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--- | ---
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- **MODEL No:** LVD-218-70/75,
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9.0 0.2 GHz TO 20 GHz | TEST DATA FOR WIDEBAND, 65/70 dB, 0.2 TO 20 GHz, DC-COUPLED, DETECTOR LOG VIDEO AMPLIFIER (DLVA), January 29, 1993
- **MODEL No:** LVD-218-70/75 AND LVD-0220-65/70,
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- **MODEL No:** LVDM-218-70/75 OPTION 818-65-60,
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MISCELLANEOUS

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● MODEL No: LVD-910-85, (SERIAL No: DL20898)

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● MODEL No: DVA-50, (SERIAL No's: DL20896 AND DL20897)
DLVA
DETECTOR LOG VIDEO AMPLIFIER
2-18 GHZ, 45 DB DYNAMIC RANGE
MODEL: LVD-218-50

FEATURES
• DC Coupled
• Wide Bandwidths
• Fast Rise Times
• Short Recovery Times
• Small Size

DESCRIPTION
The LVD-218-50 Series DLVA's offer 50 dB dynamic range over the full 2-18 GHz bandwidth with DC coupling. Units employ planar diode detectors and monolithic video circuitry for high speed performance and outstanding reliability. They are available with optional external or internal controlled CW nulling.

FUNCTIONAL BLOCK DIAGRAM

7311G GROVE ROAD, FREDERICK, MARYLAND 21701 • Tel: (301) 662-4700 • Fax: (301) 662-4938
**GUARANTEED SPECIFICATIONS**

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<tr>
<th>PARAMETER</th>
<th>SPECIFICATIONS</th>
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<tr>
<td>Frequency</td>
<td>2-18 GHz</td>
</tr>
<tr>
<td>Flatness (-20 dBm)</td>
<td>±1.5 dB</td>
</tr>
<tr>
<td>VSWR</td>
<td>3.0:1, Max.</td>
</tr>
<tr>
<td>TSS</td>
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</tr>
<tr>
<td>Logging Range</td>
<td>-40 to +5 dBm</td>
</tr>
<tr>
<td>Log Slope (Note 1)</td>
<td>50 mV/dB, ±10%</td>
</tr>
<tr>
<td>Log Linearity (-40 to 0 dBm)</td>
<td>±1.0 dB, Max.</td>
</tr>
<tr>
<td>Output Stability (-54°C to +85°C)</td>
<td>±1.0 dB, Max.</td>
</tr>
<tr>
<td>Pulse Width Range</td>
<td>50 ns to CW</td>
</tr>
<tr>
<td>Rise Time</td>
<td>20 ns, Max.</td>
</tr>
<tr>
<td>Recovery Time (from 0 dBm)</td>
<td>150 ns, Max.</td>
</tr>
<tr>
<td>Video Load</td>
<td>100 Ohms, Min.</td>
</tr>
<tr>
<td>D.C. Power (Note 2)</td>
<td>±12 V @80 mA</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 oz.</td>
</tr>
</tbody>
</table>

**Notes:**
1. Other Log slopes available.
2. Other voltages from ±9 V to ±18 V available.
3. Internal or external CW nulling available.

**MECHANICAL DATA**

**TYPICAL PERFORMANCE**

**VIDEO RESPONSE**

**VIDEO OUTPUT (V)**

**PULSE RESPONSE**

**RISE TIME**

**FALL TIME**

**ERROR (dB)**

**TRANSFER**

**ERROR**

**RF POWER (dBm)**
DLVA

DETECTOR LOG VIDEO AMPLIFIER
2-18 GHZ, 75 DB DYNAMIC RANGE
MODEL: LVD-218-70

FEATURES
• DC Coupled
• Wide Bandwidths
• Fast Rise Times
• Short Recovery Times
• Extended Dynamic Range
• MMIC Reliability

DESCRIPTION

The LVD-218-70 Series DLVA's offer 80 dB dynamic range over the full 2-18 GHz bandwidth with DC coupling. Units employ planar diode detectors, a GaAs FET LNA and monolithic video circuitry for high speed performance and outstanding reliability. They are available with optional external or internal controlled CW nulling.

FUNCTIONAL BLOCK DIAGRAM

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**GUARANTEED SPECIFICATIONS**

**PARAMETER**
- Frequency (note 4)
- Flatness (-20dBm)
- VSWR
- TSS
- Logging Range
- Log Slope (see note 1)
- Log Linearity (-65 to +10 dBm)
- Output Stability (0°C to +60°C)
- Pulse Width Range
- Rise Time
- Recovery Time
- Video Load (note 2)
- D.C. Power (note 3)
- Weight

**SPECIFICATIONS**
- 2-18 GHz
- ± 2.5 dB
- 3.0:1, Max
- -68 dBm, Min.
- -65 to +10 dBm
- 50 mV/dB
- ± 2.0 dB, Max.
- ± 2.0 dB, Max.
- 50 ns to CW
- 30 ns, Max.
- 350 ns, Max.
- 100 Ohms, Min.
- +15 V @ 400 mA
- -15 V @ 150 mA
- 7.0 oz.

**Notes:**
1. Other Log slopes available.
2. Other Video Loads down to 50 Ohms available.
3. Other voltages from ±9V to ±18V available.
4. 0.2 to 20 GHz RF Bandwidth available.
5. -55°C to +85°C operating temperature.
6. Internal or external cw nulling available.

**MECHANICAL DATA**

**Mounting Holes:** 0.104 Dia thru 4 places

**RF Input:** 3.00 (76.2)

**Video Output:** 2.816 (71.5)

**Dimensions:** inches (millimeters)
- 3.50 [88.9]
- 0.50 [12.7]

**DETECTOR LOG**

**VIDEO AMPLIFIER (DUAL)**

**VIDEO OUTPUT (V)**

**ERROR (dB)**

**RF POWER (dBm)**
DETECTOR

LOG VIDEO AMPLIFIER’S (DLVA’S)

AND

RELATED COMPONENTS

NEW

PRODUCT DEVELOPMENTS

AT

AMERICAN MICROWAVE CORPORATION

SEPTEMBER 10, 1993
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DESCRIPTION

The LVD-218 Series DLVA's are available in standard 50dB and extended 70/75dB dynamic range over the full 2-18 GHz bandwidth, with True DC coupling. Units employ planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. The DLVA's are of superior construction using state-of-the-art MIC/MMIC technology.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 1.75 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 2.0 GHz
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40 TO +5dBm
- LOG LINEARITY ERROR: ±1.5dB Maximum (OVER LOGGING RANGE AND -54°C TO +85°C)
- LOG SLOPE @ 93mA LOAD: 100mV/Db
- LOG SLOPE ACCURACY: ±4% of Average Slope
- AMPLITUDE VARIATION: ±1.5 dB Maximum (OVER -54°C TO +85°C AND LOGGING RANGE AT ANY SINGLE FREQUENCY)
- RISE TIME (10% TO 90% POINTS): 35ns Maximum
- RECOVERY TIME: ±1.0 μs (WITHIN ±1dB OF BASELINE)
- BASELINE DC OFFSET: 0 ±60 mV Maximum
- TSS: -42dBm Minimum (100ns PULSE WIDTH)
- SLO MO to 10MHz NOMINAL VIDEO BANDWIDTH
- VSFR (RF) @ -23dBm: 2.5: Maximum
- VIDEO OUTPUT LEVEL: 0 TO 5.0 Volts (50Ω Minimum Load)
- DC POWER (NO LOAD): +V: 12 TO 15V AT 100mA MAXIMUM
  -V: 12 TO 15V AT 100mA MAXIMUM
- SIZE: 2.75" X 1.50" X 0.50"

AVAILABLE OPTIONS (SPECIFY)

- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/Peak PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADES
- A08: ±1.0dB LOG LINEARITY
- A09: ±1.0dB FREQUENCY FLATNESS
- A10: -250nS TYPICAL, 350nS MAXIMUM

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B, COND. B
- SHOCK: MIL-STD-202F, METHOD 213B, COND. B
- VIBRATION: MIL-STD-202F, METHOD 2040, COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C, COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 1070, COND. A

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7311 GROVE RD., FREDERICK, MD 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-50A (OPTION ASI052)
0.5 TO 2 GHz, 40/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 1.75 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE: 5.2 TO 5.9 GHz
- FREQUENCY FLATNESS: ±0.2dB MAXIMUM
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40dBm TO +5dBm
- LOG LINEARITY ERROR: ±1.0dB MAXIMUM (±0.5dB TYPICAL)
- LOG SLOPE: 50mV/db
- LOG SLOPE ACCURACY: ±4% OF AVERAGE SLOPE
- TEMPERATURE STABILITY: ±1.0dB MAXIMUM (±0.5dB TYPICAL) (0°C TO +60°C)
- PULSE RESPONSE: 50nS TO CW
- RISE TIME: 20nS MAXIMUM, 15nS TYPICAL
- SETTLING TIME: 45nS MAXIMUM
- RECOVERY TIME: 150nS MAXIMUM
- TSS: -42dBm MINIMUM (-44dBm TYPICAL)
- VSWR (RF): 2.0:1 MAXIMUM
- MAXIMUM RF INPUT: +15dBm
- VIDEO OUTPUT LEVEL: 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (WITH 100Ω LOAD): +V 9 TO 18V @ 120mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03: FASTER RISE/RECOVERY TIMES
A04: ALTERNATE LOG SLOPES
A05: HIGH POWER RF CW/PEAK PROTECTION
A06: EXTENDED LOGGING RANGE
A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ±0.020
X.XXX ±0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B Cond. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D Cond. A

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-50 (OPTION 5259)

-0.2 TO 5.9 GHz, 40/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

The LVD-618 Series DLVA's are available in standard 50Ω and extended 70/75Ω dynamic range over the 6-18 GHz bandwidth, with true DC coupling. Units employ planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. The DLVA's are of superior construction using state-of-the-art MIC/MMIC technology.

FEATURES

- Truly DC Coupled
- Wide Bandwidths
- Fast Rise Times
- Short Recovery Times
- Superior Accuracy
- Extended Dynamic Range Capability
- Miniature Size
- 1.75 oz Weight

SPECIFICATIONS

- Frequency Range: 6 to 18 GHz
- Frequency Flatness: ±1.5dB Maximum
- Logging Range: -40 to 0dB Minimum
- Useful Range: -40 to +5dB Minimum
- Log Linearity Error: ±1.0dB Maximum (-40 to 0dB)
- Log Slope: 50mA/v dB
- Log Slope Accuracy: ±10% of Average Slope
- Temperature Stability: ±1.0 dB Maximum (-54° to +85°C)
- Pulse Response: 50ns to CW
- Rise Time: 15ns Maximum
- Settling Time: 45ns Maximum
- Recovery Time: 250ns Typical 500ns Maximum
- TSS: -40dBm Minimum
- VSWR (RF): 2.5: Maximum
- Maximum RF Input: +15dBm
- Video Output Level: 0 to 2.5 Volts (50Ω Minimum Load)
- DC Power (No Load): +V: 9 to 18V @ 120mA Maximum
- -V: 9 to 18V @ 80mA Maximum
- Size: 2.2" x 1.5" x 0.4"
- Video Load: 50 Ohms Minimum

AVAILABLE OPTIONS (SPECIFY)

A01: Extended 0.2 to 20 GHz RF Frequency Range
A02: Extended 0.5 to 18 GHz RF Frequency Range
A04: Alternate Log Slopes
A05: High Power RF CW/Peak Protection
A06: Extended Logging Range (-67dBm to +10dBm)
A07: Other Video Loads
A08: Recovery Time, 250ns Maximum
A09: Frequency Flatness of ±1.5dB Maximum

MECHANICAL OUTLINE

NOTES:
1) Dimensions are in inches
2) Tolerances: XXX ±0.020
   X.XXX ±0.010
3) Weight: 1.75 oz

ENVIRONMENTAL RATINGS

- Temperature: -54°C to +85°C (Operating)
  -65°C to +100°C (Storage)

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-618-50

8 to 18 GHz, 40/45dB, Truly DC-Coupled Detector Log Video Amplifier
DESCRIPTION

The LVD-218 SERIES DLVA'S ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

• TRULY DC COUPLED
• WIDE BANDWIDTHS
• FAST RISE TIMES
• SHORT RECOVERY TIMES
• SUPERIOR ACCURACY
• EXTENDED DYNAMIC RANGE CAPABILITY
• MINIATURE SIZE
• 5.5 OZ WEIGHT

SPECIFICATIONS

• FREQUENCY RANGE ................. 8 TO 18 GHz
• FREQUENCY FLATNESS ............... ±0.7dB
• LOGGING RANGE ...................... -40 TO 0 dBm
• USEFUL RANGE ...................... -40 TO +5 dBm
• LOG LINEARITY ERROR ............... ±0.5 dB
• LOG SLOPE ±10% TOLERANCE ......... 100mV/dB
• LOG SLOPE ACCURACY .......... ±10% OF AVERAGE SLOPE
• OUTPUT LEVEL STABILITY .......... ±1.0 dB (-54°C TO +85°C)
• PULSE RESPONSE ..................... 50nS TO CW
• RISE TIME (10% TO 90% POINTS) .... 17nS
• RECOVERY TIME .................... 300μS (WITHIN ±200 mV OF BASELINE)
• TSS ................................ -42dBm
• VSWR @ -23 dBm ..................... 3.0:1
• MAXIMUM RF INPUT ................. +15dBm
• VIDEO OUTPUT LEVEL .......... 0 TO 5 VOLTS (50Ω MINIMUM LOAD)
• DC POWER (NO LOAD) ............... +V 15V @ 140mA MAXIMUM WITH CW (60 mA NO SIGNAL)
• SIZE ................................ 3.34" x 2.47" x 0.6"

AVAILABLE OPTIONS (SPECIFY)

A01 .................. EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 .................. EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 .................. FASTER RISE/RECOVERY TIMES
A04 .................. ALTERNATE LOG SLOPES
A05 .................. HIGH POWER RF CW/PEAK PROTECTION
A06 .................. EXTENDED LOGGING RANGE
A07 .................. OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:

1. DIMENSIONS ARE IN INCHES
2. TOLERANCES: ±0.020
3. WEIGHT: 5.5 OZ
4. UNIT IS EPOXY SEALED.

ENVIRONMENTAL RATINGS

• TEMPERATURE ................. -54°C TO +85°C (OPERATING)
• HUMIDITY ...................... -65°C TO +100°C (STORAGE)
• SHOCK ......................... MIL-STD-202F, METHOD 103B COND. B
• VIBRATION ..................... MIL-STD-202F, METHOD 2040 COND. B
• ALTITUDE ...................... MIL-STD-202F, METHOD 105C COND. B
• TEMPERATURE CYCLE .......... MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-50 (OPTION ASI-S-818)
8 TO 18 GHz, 43/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 1.75 OZ WEIGHT

SPECIFICATIONS

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AVAILABLE OPTIONS (SPECIFY)

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<td>A10</td>
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MECHANICAL OUTLINE

MOUNTING SURFACE SHALL BE FREE FROM PAINT;
ALL OTHER SURFACES SHALL BE PAINTED OR PLATED.
MOUNTING SURFACE

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
- -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 103B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311 GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-50A (OPTION ASI818)
8 TO 18 GHz, 40/43dB, TRUE DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 1.75 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE .............. 2 TO 18 GHz
- FREQUENCY FLATNESS ........... ±1.0dB MAXIMUM
- LOGGING RANGE ............... -40 TO -0dBm MINIMUM
- USEFUL RANGE ................. -40 TO +5dBm
- LOG LINEARITY ERROR ......... ±0.5dB MAXIMUM
- LOG SLOPE ..................... 50mV/dB
- LOG SLOPE ACCURACY ......... ±4% of AVERAGE SLOPE
- TEMPERATURE STABILITY ...... ±1.0 dB MAXIMUM (−5° TO +85°C)
- PULSE RESPONSE ............... 50ns TO CW
- RISE TIME ...................... 20ns MAXIMUM
- SETTLING TIME ................. 45ns MAXIMUM
- RECOVERY TIME ............... 150ns TYPICAL 300ns MAXIMUM
- TSS .................. 42dBm MINIMUM
- VSWR (RF) ..................... 3.1 MAXIMUM
- MAXIMUM RF INPUT ............ +15dBm
- VIDEO OUTPUT LEVEL .......... 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (NO LOAD) ............ +V 9 TO 18V @ 75mA MAXIMUM
- SIZE .................. 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

A01 ........... EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ........... EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ........... FASTER RISE/RECOVERY TIMES
A04 ........... ALTERNATE LOG SLOPES
A05 ........... HIGH POWER RF CW/PEAK PROTECTION
A06 ........... EXTENDED LOGGING RANGE
A07 ........... OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ±0.020
   X.XXX ±0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE .......... −54°C TO +85°C (OPERATING)
- −65°C TO +100°C (STORAGE)
- HUMIDITY ........... MIL-STD-202F, METHOD 103B COND. B
- SHOCK ............. MIL-STD-202F, METHOD 213B COND. B
- VIBRATION ........... MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE ........... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE .......... MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311G GROVE RD., FREDERICK, MD. 21701
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PRODUCT FEATURE
LVD-218-50
2 TO 18 GHz, 40/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER

SIZE A
DESCRIPTION

THE LVD-218-50 (OPTION 0518) SERIES DLVA'S ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 0.5-18GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- 1.75 OZ WEIGHT
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE

SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 18 GHz
- FREQUENCY FLATNESS @-20dBm: ±1.5dB (±1.0dB TYPICAL)
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40 TO +5dBm
- LOG LINEARITY ERROR: ±1.0dB MAXIMUM (±0.5dB TYPICAL)
  (-40dBm TO 0dBm)
- LOG SLOPE: 50mV/dB
- LOG SLOPE ACCURACY: ±4% OF AVERAGE SLOPE
- TEMPERATURE STABILITY: ±1.0 dB MAXIMUM, ±0.5dB TYPICAL (-54℃ TO +85℃)
- PULSE RESPONSE: 50ns TO CW
- RISE TIME (10% TO 90% POINTS): 20ns MAXIMUM, (15ns TYPICAL)
- SETTLING TIME: 45ns MAXIMUM
- RECOVERY TIME: 150ns TYPICAL, 200ns MAXIMUM
- TSS: -40dBm MINIMUM
- VSWR (RF): 2.5:1
- MAXIMUM RF INPUT: +15dBm
- VIDEO OUTPUT LEVEL: 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (100mA LOAD): +V: 12V @ 120mA MAXIMUM
  -V: 12V @ 80mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

SMA FEMALE 2 PLACES

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ± 0.020
   X.XXX ± 0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54℃ TO +85℃ (OPERATING)
  -65℃ TO +100℃ (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
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PRODUCT FEATURE

LVD-218-50 (OPTION 0518)
0.5 TO 18 GHz, 40/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218-50F SERIES ARE SUPER-FAST DLVA'S AND ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- 1.75 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE: 2 TO 6 GHz
- FREQUENCY FLATNESS @ -20dBm: ±1.0 dB (±0.5dB TYPICAL)
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40 TO +5dBm
- LOG LINEARITY ERROR: ±1.0 dB MAXIMUM (±0.5dB TYPICAL)
- LOG SLOPE: 50mV/db
- LOG SLOPE ACCURACY: ±4% OF AVERAGE SLOPE
- TEMPERATURE STABILITY: ±1.0 dB MAXIMUM, ±0.5dB TYPICAL (0°C TO +60°C)
- PULSE RESPONSE: 50ns TO CW
- RISE TIME (10% TO 90% POINTS): 15ns MAXIMUM, (10ns TYPICAL)
- SETTLING TIME: 45ns MAXIMUM
- RECOVERY TIME: 150ns TYPICAL 250ns MAXIMUM
- TSS: -40dBm MINIMUM
- VSWR (RF): 2.5:1
- MAXIMUM RF INPUT: +15dBm
- VIDEO OUTPUT LEVEL: 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (100Ω LOAD):
  - +V: 12V @ 120mA MAXIMUM
  - -V: 12V @ 80mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:

1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: ±0.020
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -85°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 2040 COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

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PRODUCT FEATURE

LVD-218-50F (OPTION 26)
2 TO 5 GHz, 40/45dB, FAST TRULY DC-COUPLED DETECTOR/LG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218-50SF SERIES ARE SUPER-FAST DLVA'S AND ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 2-18GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- 1.75 OZ WEIGHT
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE

SPECIFICATIONS

- FREQUENCY RANGE: 2 TO 18 GHz
- FREQUENCY FLATNESS: @ -20dBm: ±1.5dB
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40 TO +5dBm
- LOG LINEARITY ERROR: ±1.0dB MAXIMUM (-40 TO 0dBm)
- LOG SLOPE: 50mV/dB
- LOG SLOPE ACCURACY: ±4% OF AVERAGE SLOPE
- TEMPERATURE STABILITY: ±1.0 dB MAXIMUM (0°C TO +60°C)
- PULSE RESPONSE: 50ns TO CW
- RISE TIME (10% TO 90% POINTS): 10ns MAXIMUM, (5ns TYPICAL)
- SETTLING TIME: 45ns MAXIMUM
- RECOVERY TIME: 150ns TYPICAL, 300ns MAXIMUM
- TSS: -40dBm MINIMUM
- VSWR (RF): 2.7:1
- MAXIMUM RF INPUT: +15dBm
- VIDEO OUTPUT LEVEL: 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (100Ω LOAD)
  - +V: 12V @ 120mA MAXIMUM
  - -V: 12V @ 80mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03: FASTER RISE/RECOVERY TIMES
A04: ALTERNATE LOG SLOPES
A05: HIGH POWER RF CW/PEAK PROTECTION
A06: EXTENDED LOGGING RANGE
A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ±0.020 X.XXX ±0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 2040 COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
73116 GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-50SF
2 TO 18 GZH, 40/45dB, SUPER-FAST TRULY DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218-50SF (OPTION 0518) SERIES ARE SUPER-FAST DLVA'S AND ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 0.5-18GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE Detectors AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FASTRISE TIMES
- SHORT RECOVERY TIMES
- 1.75 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 18 GHz
- FREQUENCY FLATNESS @ -20dBm: ± 1.5dB
- LOGGING RANGE: -40 TO 0dBm MINIMUM
- USEFUL RANGE: -40 TO +5dBm
- LOG LINEARITY ERROR: ± 1.0dB MAXIMUM (-40 TO 0dBm)
- LOG SLOPE: 50mV/dB
- LOG SLOPE ACCURACY: ± 4% OF AVERAGE SLOPE
- TEMPERATURE STABILITY: ± 1.0 dB MAXIMUM (0°C TO +60°C)
- PULSE RESPONSE: 50ns TO CW
- RISE TIME (10% TO 90% POINTS): 10ns MAXIMUM, (5ns TYPICAL)
- SETTLING TIME: 45ns MAXIMUM
- RECOVERY TIME: 150ns TYPICAL, 300ns MAXIMUM
- SSS: -40dBm MINIMUM
- VSWR (RF): 3.0:1
- MAXIMUM RF INPUT: +15dBm
- VIDEO OUTPUT LEVEL: 0 TO 2.5 VOLTS (50Ω MINIMUM LOAD)
- DC POWER (50Ω LOAD):
  +V: 12V @ 120mA MAXIMUM
  -V: 12V @ 80mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)

- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ± 0.020
   X.XXX ± 0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
- -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B, CONDITION B
- SHOCK: MIL-STD-202F, METHOD 213B, CONDITION B
- VIBRATION: MIL-STD-202F, METHOD 2040, CONDITION B
- ALTITUDE: MIL-STD-202F, METHOD 105C, CONDITION A
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D, CONDITION A

AMERICAN MICROWAVE CORPORATION
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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-50SF (OPTION 0518)
0.5 TO 18GHz 40/40dB, SUPER-FAST TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER

AMM 3/99
DESCRIPTION
AMC MODEL LVDN-0518-50 IS A 0.5 TO 18 GHz, TRULY DC COUPLED 40/45dB DETECTOR LOG VIDEO AMPLIFIER (DLVA) CONSTRUCTED USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. IT HAS RF INPUT NOISE/CW IMMUNE CIRCUITRY BUILT FOR SYSTEM NOISE CANCELLATION.

SPECIFICATIONS

- **FREQUENCY RANGE**: 0.5 TO 18 GHz
- **FREQUENCY FLATNESS**: ±1.0dB MAXIMUM
- **TSS**: -42dBm MINIMUM
- **LOGGING RANGE**: -40 TO 0 dBm MINIMUM
- **USEFUL RANGE**: ±40 TO +5 dBm
- **LOG ERROR**: ±0.5dB
- **LOG SLOPE**: 50mV/dB OR AS DESIRED
- **LOG SLOPE ACCURACY**: ±0.5dB MAXIMUM
- **LOG TEMPERATURE STABILITY**: ±1.0dB MAXIMUM (-54°C TO +85°C)
- **BASELINE STABILITY**: ±1.0dB MAXIMUM (-54°C TO +85°C)
- **RISE TIME**: 20ns MAXIMUM
- **RECOVERY TIME**: 150ns TYPICAL, 300ns MAXIMUM
- **SETTLING TIME**: 45 nS MAXIMUM
- **VSWR (RF)**: 3:1 MAXIMUM
- **VIDEO LOAD**: 50Ω TYPICAL, OR AS DESIRED
- **VIDEO SOURCE IMPEDANCE**: 50Ω TYPICAL, OR AS DESIRED
- **VIDEO OUTPUT RANGE**: 0 TO 2.5 VOLTS
- **PULSE WIDTH TO CW**: ±9V TO ±18V @ 75MA MAXIMUM
- **SIZE**: 2.3” X 2.3” X 0.45”

AVAILABLE OPTIONS (SPECIFY)

- **A01**: SELF OR EXTERNALLY BIASED NOISE/CW IMMUNITY
- **A02**: EXTENDED FREQUENCY RANGE OF 0.2 TO 20 GHz
- **A03**: EXTENDED DYNAMIC RANGE
- **A04**: FASTER RISE AND RECOVERY TIMES
- **A05**: HIGH CW/PULSED RF POWER PROTECTION
- **A06**: ALTERNATE LOG SLOPES

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ±0.020
   X.XXX ±0.010
3) WEIGHT: 2.9 OZ

ENVIRONMENTAL RATINGS

- **TEMPERATURE**: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- **HUMIDITY**: MIL-STD-202F, METHOD 103B COND. B
- **SHOCK**: MIL-STD-202F, METHOD 213B COND. B
- **VIBRATION**: MIL-STD-202F, METHOD 204D COND. B
- **ALTITUDE**: MIL-STD-202F, METHOD 105C COND. B
- **TEMPERATURE CYCLE**: MIL-STD-202F, METHOD 107D COND. A

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PRODUCT FEATURE
LVDN-0518-50
0.5 TO 18 GHz, NOISE IMMUNE, 40/45dB DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

AMC's 0.5 TO 18 GHz DLVA, MODEL LVDS-0518-50, OFFERS 3 SEPARATE SWITCHED VIDEO FILTERS. TTL CONTROL SIGNAL SWITCHES 30 MHz, 3 MHz, OR 300 KHz VIDEO BANDWIDTH FILTERS GIVING TSS OF -42dBm, -46dBm, AND -50dBm. SELECTING VIDEO FILTERS DOES NOT AFFECT THE -40dBm TO 0 dBm DYNAMIC LOGGING RANGE WHICH HAS A LINEARITY ERROR OF ±0.5dB, FREQUENCY FLATNESS FROM 0.5 TO 18 GHz OF ±1.0dB, AND TEMPERATURE STABILITY (-54º TO +65ºC) OF ±1.0dB.

SPECIFICATIONS

- **Frequency Range** ............... 0.5 TO 18 GHz
- **Frequency Flatness** ............ ±1.0dB MAXIMUM
- **Logging Range** .................. -40 TO 0 dBm MINIMUM
- **Useful Range** ................... -40 TO +5dBm
- **Log Linearity Error** ............ ±0.5dB MAXIMUM
- **Log Slope** ...................... 50mV/db
- **Log Slope Accuracy** ............ ±4% OF AVERAGE SLOPE
- **Temperature Stability** ........ ±1.0dB MAXIMUM (-54 TO +85ºC)
- **TSS**
  - VIDEO BANDWIDTH 1 (30 MHz) ....... -42dBm MINIMUM
  - VIDEO BANDWIDTH 2 (3 MHz) ........ -46dBm MINIMUM
  - VIDEO BANDWIDTH 3 (0.3 MHz) ...... -50dBm MINIMUM
- **Pulse Response** ................. 50ns TO CW (VIDEO BANDWIDTH 1)
- **Rise Time** ...................... 20ns MAXIMUM (VIDEO BANDWIDTH 1)
- **Settling Time** .................. 45ns MAXIMUM (VIDEO BANDWIDTH 1)
- **Recovery Time** .................. 150ns TYPICAL 300ns MAXIMUM (VIDEO BANDWIDTH 1)
- **Video Output Range** ............ 0 TO 2.5 VOLTS
- **Video Offset** ................... 100mV MAXIMUM
- **VSWR (RF)** ...................... 3.1 MAXIMUM
- **Maximum RF Input** ............... ±15dBm
- **Video Load** ..................... 50Ω MINIMUM
- **DC Power (No Load)** ............ +V: -9 TO 15V @ 100mA MAXIMUM
  -V: -9 TO 15V @ 100mA MAXIMUM
- **Size** .......................... 3.2” X 1.5” X 0.5”

AVAILABLE OPTIONS (SPECIFY)

- A01 ................. 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02 ................. ALTERNATIVE LOG SLOPES, AS DESIRED
- A03 ................. ALTERNATIVE VIDEO BANDWIDTHS, AS DESIRED
- A04 ................. HIGH RF CW/PEAK POWER PROTECTION
- A05 ................. OTHER VIDEO LOADS
- A06 ................. EXTENDED DYNAMIC RANGE

MECHANICAL OUTLINE

SMA FEMALE, 2 PLACES

NOTES:

1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: XXX ±0.020
  X.XXX ±0.010
3) WEIGHT: 2.9 OZ

ENVIRONMENTAL RATINGS

- **Temperature** ................. -54ºC TO +85ºC (OPERATING)
  -65ºC TO +100ºC (STORAGE)
- **Humidity** ..................... MIL-STD-202F, METHOD 103B COND. B
- **Shock** ........................ MIL-STD-202F, METHOD 213B COND. B
- **Vibration** ...................... MIL-STD-202F, METHOD 204D COND. B
- **Altitude** ...................... MIL-STD-202F, METHOD 105C COND. B
- **Temperature Cycle** .......... MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311 GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVDS-0518-50

0.5 TO 18 GHz, 40/40A8 DETECTOR LOG VIDEO AMPLIFIER (DLVA) WITH SWITCHABLE VIDEO FILTERING
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND
STANDARD 50dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH,
WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND
INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND
OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION
USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x
3.5" x 0.5".

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE ........... 2 TO 6 GHz
- FREQUENCY FLATTEN ........ ±1.75dB MAXIMUM, ±1.5dB TYPICAL
- TSS ........................ -70dBm MINIMUM
- VSWR ......................... 2.5:1 MAXIMUM
- DYNAMIC RANGE ............ -80dB
- LOGGING RANGE ............. -70 TO +10dBm
- LOG LINEARITY ............ ±1.75dB, ±1.5dB TYPICAL
- LOG SLOPE (±10% TOLERANCE) 50mV/dB OR AS DESIRED
- LOG SLOPE ACCURACY 5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY ±1.75dB MAXIMUM (0°C TO 60°C), ±1.5dB TYPICAL
- RISE TIME (10% TO 90% POINTS) 30nS MAXIMUM
- RECOVERY TIME ............... 350nS MAXIMUM
- VIDEO LOAD .................. 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD)
  +V ........................ 15V @ 350mA MAXIMUM
  -V ........................ 15V @ 200mA MAXIMUM
- SIZE ........................ 3.0" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01 ........................... EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ........................... EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ........................... FASTER RISE/RECOVERY TIMES
A04 ........................... ALTERNATE LOG SLOPES
A05 ........................... HIGH POWER RF CW/PEAK PROTECTION
A06 ........................... EXTENDED LOGGING RANGE
A07 ........................... OTHER VIDEO LOADS
A08 ........................... OTHER SUPPLY VOLTAGES
A09 ........................... ±1.0dB LOG LINEARITY
A10 ........................... ±1.0dB FREQUENCY FLATTEN
A11 ........................... ±1.5dB OUTPUT STABILITY
A12 ........................... -54°C TO +85°C OPERATION

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS

- TEMPERATURE .................. -54°C TO +85°C (OPERATING)
- -65°C TO +100°C (STORAGE)
- HUMIDITY ......................... MIL-STD-202F, METHOD 103B, COND. B
- SHOCK ............................. MIL-STD-202F, METHOD 213, COND. B
- VIBRATION ......................... MIL-STD-202F, METHOD 204D, COND. B
- ALTITUDE ......................... MIL-STD-202F, METHOD 105C, COND. B
- TEMPERATURE CYCLE ............ MIL-STD-202F, METHOD 107D, COND. A

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7311 C GROVE RD., FREDERICK, MD, 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-70/75 (OPTION 26)
2 TO 8 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND STANDARD 50dB DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x 3.5" x 0.5".

FEATURES

- TRULY DC COUPLING
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- 7.2 OZ WEIGHT
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE

SPECIFICATIONS

- FREQUENCY RANGE ................... 6 TO 10 GHz
- FREQUENCY FLATNESS .............. ±1.75dB MAXIMUM, ±1.5dB TYPICAL
- TSS .................................. -70dBm MINIMUM
- VSWR .................................. 2.5:1 MAXIMUM
- DYNAMIC RANGE ...................... 80dB
- LOGGING RANGE ...................... -70 TO +10dBm
- LOG LINEARITY ...................... ±1.75dB, ±1.5dB TYPICAL
- LOG SLOPE (± 10% TOLERANCE) ...... 50mV/dB OR AS DESIRED
- LOG SLOPE ACCURACY .............. ±5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY ........ ±1.75dB MAXIMUM (-5°C TO +85°C), ±1.5dB TYPICAL
- RISE TIME (10% TO 90% POINTS) ...... 80ns MAXIMUM
- RECOVERY TIME ...................... 350ns MAXIMUM
- VIDEO LOAD ......................... 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD) ................. 15V @ 350mA MAXIMUM
  +V .................................. 15V @ 350mA MAXIMUM
  -V .................................. 15V @ 200mA MAXIMUM
- SIZE .................................. 3.0" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01 ................................ EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ................................ EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ................................ FASTER RISE/RECOVERY TIMES
A04 ................................ ALTERNATE LOG SLOPES
A05 ................................ HIGH POWER RF CW/PEAK PROTECTION
A06 ................................ EXTENDED LOGGING RANGE
A07 ................................ OTHER VIDEO LOADS
A08 ................................ OTHER SUPPLY VOLTAGES
A09 ................................ ±1.0dB LOG LINEARITY
A10 ................................ ±1.0dB FREQUENCY FLATNESS
A11 ................................ ±1.5dB OUTPUT STABILITY
A12 ................................ -54°C TO +85°C OPERATION

ENVIRONMENTAL RATINGS

- TEMPERATURE ....................... -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY .......................... MIL-STD-202F, METHOD 103B COND. B
- SHOCK ............................... MIL-STD-202F, METHOD 213B COND. B
- VIBRATION ......................... MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE ........................... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE .............. MIL-STD-202F, METHOD 107D COND. A

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7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION 610)
6 TO 10 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER

SIZE A SHEET 1 OF 2 DOC # 100-3179
DESCRIPTION
THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND
STANDARD 50dB DYNAMIC RANGE OVER THE FULL 2–18 GHz BANDWIDTH,
WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND
INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND
OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION
USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x
3.5" x 0.5".

FEATURES
● TRULY DC COUPLED
● WIDE BANDWIDTHS
● FAST RISE TIMES
● SHORT RECOVERY TIMES
● SUPERIOR ACCURACY
● EXTENDED DYNAMIC RANGE CAPABILITY
● MINIATURE SIZE
● 7.2 OZ WEIGHT

SPECIFICATIONS
● FREQUENCY RANGE: 10 TO 18 GHz
● FREQUENCY FLATNESS: ±1.75dB MAXIMUM, ±1.5dB TYPICAL
● TSS: −70dBm MINIMUM
● VSWR: 2.5:1 MAXIMUM
● DYNAMIC RANGE: 85dB
● LOGGING RANGE: −70 TO +10dBm
● LOG LINEARITY: ±1.75dB, ±1.5dB TYPICAL
● LOG SLOPE (±10% TOLERANCE): 50mV/dB OR AS DESIRED
● LOG SLOPE ACCURACY: ±5% MAXIMUM OF AVERAGE SLOPE
● LOG TEMPERATURE STABILITY: ±1.75dB MAXIMUM (0°C TO 60°C), ±1.5dB TYPICAL
● RISE TIME (10% TO 90% POINTS): 30ns MAXIMUM
● RECOVERY TIME: 350ns MAXIMUM
● VIDEO LOAD: 50 OHMS (TYPICAL), OR AS DESIRED
● DC POWER (NO LOAD): +V 15V @ 350mA MAXIMUM
● -V 15V @ 200mA MAXIMUM
● SIZE: 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)
A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03: FASTER RISE/RECOVERY TIMES
A04: ALTERNATE LOG SLOPES
A05: HIGH POWER RF CW/PEAK PROTECTION
A06: EXTENDED LOGGING RANGE
A07: OTHER VIDEO LOADS
A08: OTHER SUPPLY VOLTAGES
A09: ±1.0dB LOG LINEARITY
A10: ±1.0dB FREQUENCY FLATNESS
A11: ±1.5dB OUTPUT STABILITY
A12: 2.4GHz TO 18.0GHz OPERATION

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS
● TEMPERATURE: −54°C TO +85°C (OPERATING)
● −65°C TO +100°C (STORAGE)
● HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
● SHOCK: MIL-STD-202F, METHOD 213B COND. B
● VIBRATION: MIL-STD-202F, METHOD 204D COND. B
● ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
● TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-70/75 (OPTION 1018)
10 TO 18 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION
THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND
STANDARD 50dB DYNAMIC RANGE OVER THE FULL 2–18 GHz BANDWIDTH,
WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND
INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND
OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION
USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x
3.5" x 0.5".

FEATURES
- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS
- FREQUENCY RANGE ....................... 6 TO 18 GHz
- FREQUENCY FLATNESS .................. ±1.75dB (±1.5dB TYPICAL)
- TSS ................................ -70dBm (-72dBm TYPICAL)
- VSWR ................................ 2.5:1
- DYNAMIC RANGE ...................... 80dB
- LOGGING RANGE ........................ -70 TO +10dBm
- LOG LINEARITY ....................... ±1.75dB (±1.5dB TYPICAL)
- LOG SLOPE .............................. ±50mW/db OR AS DESIRED
- LOG SLOPE ACCURACY ............... ±5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY ........ ±1.75dB (±1.5dB TYPICAL)
- RISE TIME .............................. 30nS MAXIMUM, 20nS TYPICAL
- RECOVERY TIME ...................... 200nS TYPICAL, 300nS MAXIMUM
- VIDEO LOAD ............................. 50 OHMS (MINIMUM), OR AS DESIRED
- DC POWER (NO LOAD) .............. +V .................. .9 TO 18V @ 350mA
- ...................................... -V .................. .9 TO 18V @ 200mA MAXIMUM
- SIZE .................................. 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)
A01 ................................ EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ................................ EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ................................ FASTER RISE/RECOVERY TIMES
A04 ................................ ALTERNATE LOG SLOPES
A05 ................................ HIGH POWER RF CW/PEAK PROTECTION
A06 ................................ EXTENDED LOGGING RANGE
A07 ................................ OTHER VIDEO LOADS

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS
- TEMPERATURE ...................... -54°C TO +85°C (OPERATING)
- .............................. -65°C TO +100°C (STORAGE)
- HUMIDITY ......................... MIL-STD-202F, METHOD 103B COND. B
- SHOCK ............................ MIL-STD-202F, METHOD 213B COND. B
- VIBRATION ......................... MIL-STD-202F, METHOD 2040 COND. B
- ALTITUDE ......................... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE ......... MIL-STD-202F, METHOD 107D COND. A

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TEL: (301) 662–4700 FAX: (301) 662–4938

PRODUCT FEATURE
LVD-218–70/75 (OPTION 618)
6 TO 18 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND STANDARD 56dB DYNAMIC RANGE OVER THE FULL 2–18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x 3.5" x 0.5".

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE ......................... 2 TO 10 GHz
- FREQUENCY FLATNESS ................. ±1.75dB TYPICAL (±2.0dB MAXIMUM)
- TSS ........................................... –68dBm
- VSWR ........................................... 2.5:1 TYPICAL (2.75:1 MAXIMUM)
- DYNAMIC RANGE ......................... 80dB
- LOGGING RANGE ......................... –70 TO +10dBm
- LOG LINEARITY ......................... ±1.75dB MAXIMUM (±1.5dB TYPICAL)
- LOG SLOPE .................................. 50mV/DB OR AS DESIRED
- LOG SLOPE ACCURACY ................. ±5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY ........ ±1.5dB MAXIMUM, ±1.0dB TYPICAL (0°C TO 50°C)
- RISE TIME .............................. 30nS MAXIMUM, 20nS TYPICAL
- RECOVERY TIME ...................... 250nS TYPICAL, 350nS MAXIMUM
- VIDEO LOAD .............................. 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD) ..........
  +V .................................. 9 TO 18V @ 350mA TYPICAL, 375mA MAXIMUM
  –V .................................. 9 TO 18V @ 200mA MAXIMUM
- SIZE ........................................... 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01 ............... EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ............... EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ............... FASTER RISE/RECOVERY TIMES
A04 ............... ALTERNATE LOG SLOPES
A05 ............... HIGH POWER RF CW/PEAK PROTECTION
A06 ............... EXTENDED LOGGING RANGE
A07 ............... OTHER VIDEO LOADS
A08 ............... –54°C TO +85°C WITH LOG TEMPERATURE STABILITY OF ±1.75dB MAXIMUM

ENVIRONMENTAL RATINGS

- TEMPERATURE ....................... –54°C TO +85°C (OPERATING)
  –65°C TO +100°C (STORAGE)
- HUMIDITY ......................... MIL-STD-202F, METHOD 103B, COND. B
- SHOCK ......................... MIL-STD-202F, METHOD 213B, COND. B
- VIBRATION ................. MIL-STD-202F, METHOD 204D, COND. B
- ALTITUDE ..................... MIL-STD-202F, METHOD 105C, COND. B
- TEMPERATURE CYCLE .......... MIL-STD-202F, METHOD 107D, COND. A

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION 210)
2 TO 10 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER

07/31/90
**DESCRIPTION**

The LVD-218 series DLVA's are available in extended 70/75dB and standard 50dB dynamic range over the full 2-18 GHz bandwidth, with true DC coupling. Units employ planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. The DLVA's are of superior construction using state-of-the-art MIC/MMIC technology. The size is 3.0" x 3.5" x 0.5".

**FEATURES**

- Truly DC coupled
- Wide bandwidths
- Fast rise times
- Short recovery times
- Superior accuracy
- Extended dynamic range capability
- Miniature size
- 7.2 oz weight

**SPECIFICATIONS**

- Frequency Range: 2 to 18 GHz
- Frequency Flatness: ±1.75 dB (±1.5dB 6-18 GHz)
- TSS: -68dBm (-70dBm 6-18 GHz)
- VSWR: 2.5:1
- Dynamic Range: 80dB
- Logging Range: -70 TO +10dBm
- Log Linearity: ±1.75dB (±1.5dB 6-18 GHz)
- Log Slope: 50mV/Db or as desired
- Log Slope Accuracy: ±5% maximum of average slope
- Log Temperature Stability: ±1.75dB (±1.5dB 6-18 GHz)
- Rise Time: 30ns maximum, 20ns typical
- Recovery Time: 200ns typical, 300ns maximum
- Video Load: 100 Ohms (TYPICAL)
- DC Power (No Load): +V 15V @ 350mA
- -V 15V @ 200mA maximum
- Size: 3.00" x 3.5" x 0.5"

**ENVIRONMENTAL RATINGS**

- Temperature: -54°C TO +85°C (Operating)
- -65°C TO +100°C (Storage)
- Humidity: MIL-STD-202F, METHOD 103B, COND. B
- Vibration: MIL-STD-202F, METHOD 204D, COND. B
- Altitude: MIL-STD-202F, METHOD 105C, COND. B
- Temperature Cycle: MIL-STD-202F, METHOD 107D, COND. A

**AVAILABLE OPTIONS (SPECIFY)**

- A01: Extended 0.2 to 20 GHz RF frequency range
- A02: Extended 0.5 to 18 GHz RF frequency range
- A03: Faster rise/recovery times
- A04: Alternate log slopes
- A05: High power RF CW/Peak protection
- A06: Extended logging range
- A07: Other video loads

**AMERICAN MICROWAVE CORPORATION**

7311 GROVE PARK, FREDERICK, MD. 21701

TEL: (301) 662-4700 FAX: (301) 662-4938

**PRODUCT FEATURE**

LVD-218-70/75

2 to 18 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION
THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75dB AND STANDARD 50dB DYNAMIC RANGE OVER THE FULL 0.5-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" X 3.5" X 0.5".

FEATURES
- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS
- FREQUENCY RANGE: 0.5 TO 12 GHz
- FREQUENCY FLATNESS: ±2.0dB MAXIMUM
- TSS: -68dBm
- VSWR: 3.0:1 MAXIMUM (2.5:1 TYPICAL)
- DYNAMIC RANGE: 80dB
- LOGGING RANGE: -70 TO +10dBm
- LOG LINEARITY: ±1.75dB
- LOG SLOPE: 50mV/dB OR AS DESIRED
- LOG SLOPE ACCURACY: ±5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY: ±1.5dB (0°C TO 60°C)
- RISE TIME: 30ns MAXIMUM, 20ns TYPICAL
- RECOVERY TIME: 250ns TYPICAL, 350ns MAXIMUM
- VIDEO LOAD: 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD)
  +V: 9 TO 18V @ 350mA TYPICAL, 375mA MAXIMUM
  -V: 9 TO 18V @ 200mA MAXIMUM
- SIZE: 3.00" X 3.5" X 0.5"

AVAILABLE OPTIONS (SPECIFY)
- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS
- A08: -54°C TO +85°C WITH LOG TEMPERATURE STABILITY OF ±1.75dB

ENVIRONMENTAL RATINGS
- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND. B
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-70/75 (OPTION 0512)
0.5 TO 12 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

THE LVD-218 SERIES DLVAs ARE AVAILABLE IN EXTENDED 70/75dB AND STANDARD 50dB DYNAMIC RANGE OVER THE FULL 0.5-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVAs ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x 3.5" x 0.5".

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 18 GHz
- FREQUENCY FLATNESS: ±2.0dB TYPICAL (±2.5dB MAXIMUM)
- TSS: -66dBm (−70dBm 6-18 GHz)
- VSWR: 3.0:1 Maximum (2.5:1 TYPICAL)
- DYNAMIC RANGE: 80dB
- LOGGING RANGE: −70 to +10dBm
- LOG LINEARITY: ±1.75dB
- LOG SLOPE: 50mV/DB OR AS DESIRED
- LOG SLOPE ACCURACY: ±5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY: ±1.5dB (0°C TO 60°C)
- RISE TIME: 30nS MAXIMUM, 20nS TYPICAL
- RECOVERY TIME: 250nS MAXIMUM, 350nS TYPICAL
- VIDEO LOAD: 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD)
  +V: 9 TO 18V @ 350mA TYPICAL, 375mA MAXIMUM
  −V: 9 TO 18V @ 200mA MAXIMUM
- SIZE: 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

AO1: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
AO2: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
AO3: FASTER RISE/RECOVERY TIMES
AO4: ALTERNATE LOG SLOPES
AO5: HIGH POWER RF CW/PEAK PROTECTION
AO6: EXTENDED LOGGING RANGE
AO7: OTHER VIDEO LOADS
AO8: −54°C TO +85°C WITH LOG TEMPERATURE STABILITY OF ±1.75dB

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS

- TEMPERATURE: −54°C TO +85°C (OPERATING), −65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B, CONDITION B
- SHOCK: MIL-STD-202F, METHOD 213B, CONDITION B
- ALTITUDE: MIL-STD-202F, METHOD 105C, CONDITION B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D, CONDITION A

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7311G CROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-70/75 (OPTION 0518)
0.5 TO 18 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

The LVD-218 Series DLVA's are available in extended 70/75 dB and standard 50 dB dynamic range over the full 0.2-20 GHz bandwidth, with true DC coupling. Units employ planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. The DLVA's are of superior construction using state-of-the-art MIC/MMIC technology. The size is 3.0" x 3.5" x 0.5".

FEATURES

- Truly DC coupled
- Wide bandwidths
- Fast rise times
- Short recovery times
- Superior accuracy
- Extended dynamic range capability
- Miniature size
- 7.2 oz weight

SPECIFICATIONS

- Frequency Range: 0.2 to 20 GHz
- Frequency Flatness: ±2.0 dB (±1.75 dB Typical)
- TSS: -60dBm (-62dBm Typical)
- VSWR: 3.0:1
- Dynamic Range: 70 dB
- Logging Range: -65dBm to +10dBm
- Log Linearity: ±2.0 dB
- Log Slope: 50mV/DB or as desired
- Log Slope Accuracy: ±5% maximum of average slope
- Log Temperature Stability: ±2.0 dB (±1.75 dB Typical)
- Rise Time: 30ns maximum, 20ns typical
- Recovery Time: 200ns typical, 300ns maximum
- Video Load: 50 Ohms (minimum), or as desired
- DC Power (No Load): +V: 9 to 18V @ 350mA
- -V: 9 to 18V @ 200mA maximum
- Size: 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01: 2 to 18 GHz RF frequency range
A02: Extended 0.5 to 18 GHz RF frequency range
A03: Faster rise/recovery times
A04: Alternate log slopes
A05: High Power RF CW/Peak protection
A06: Extended logging range
A07: Other video loads

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS

- Temperature: -54°C to +85°C (Operating)
  -65°C to +100°C (Storage)

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7311C GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION 0220)

0.2 to 20 GHz, 70/75 dB, Truly DC-coupled detector LOG video amplifier.
DESCRIPTION

THE LVD-218-70 (OPTION NI) SERIES DLVA'S HAVE EXTENDED DYNAMIC RANGE OVER THE FULL 2-18 GHz BANDWIDTH, WITH TRUE DC COUPLING AND WITH INTERNAL BUILT-IN CW/NOISE IMMUNE CIRCUITRY. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x 3.5" x 0.5".

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- 7.2 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE ............... 2 TO 18 GHz
- FREQUENCY FLATNESS ............. ±2.5dB MAXIMUM (+2.0dB TYPICAL)
- TSS ................................ -68dBm MINIMUM
- VSRR ................................ 2.5:1 MAXIMUM
- DYNAMIC RANGE .................. 68dB MINIMUM
- LOGGING RANGE .................. -68dBm TO 0dBm (MINIMUM)
- LOG LINEARITY ................... ±2.0dB MAXIMUM (+1.5 dB TYPICAL)
- LOG SLOPE ......................... 70 ±5mV/db
- LOG SLOPE ACCURACY .............. ±5% MAXIMUM, SLOPE OF BEST FIT STRAIGHT LINE
- LOG LINEARITY @10 GHz .......... ±1.5dB MAXIMUM (+1.0dB TYPICAL)
- LOG LINEARITY OVER FREQUENCY ±2.25dB MAXIMUM (+1.75dB TYPICAL)
- LOG TEMPERATURE STABILITY ...... ±1.75dB (MAXIMUM) -54 TO +85°C
- RISE TIME (10% TO 90% POINTS) 35nS TYPICAL, 40nS MAXIMUM
- RECOVERY TIME .................. 250nS TYPICAL, 350nS MAXIMUM
- VIDEO LOAD ....................... 50 OHMS, MINIMUM
- DC POWER (NO LOAD) .............. +V 9 TO 18V @ 350mA MAXIMUM
- ................................. -V 9 TO 18V @ 200mA MAXIMUM
- CW IMMUNITY (OPTIONAL) ....... CANCELLATION TO -46dBM (MINIMUM) FOR SIGNALS ≥100us PULSE WIDTH OR CW
- SIZE .............................. 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01 ................................ EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
A02 ................................ EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 ................................ FASTER RISE/RECOVERY TIMES
A04 ................................ ALTERNATE LOG SLOPES
A05 ................................ HIGH POWER RF CW/PEAK PROTECTION
A06 ................................ EXTENDED LOGGING RANGE
A07 ................................ OTHER VIDEO LOADS
A08 ................................ EXTERNAL CW IMMUNE CIRCUITRY
A09 ................................ COMPLEMENTARY VIDEO OUTPUTS

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS

- TEMPERATURE ...................... -54°C TO +85°C (OPERATING)
- ...................................... -65°C TO +100°C (STORAGE)
- HUMIDITY .......................... MIL-STD-202F, METHOD 103B, COND. B
- SHOCK .............................. MIL-STD-202F, METHOD 213B, COND. B
- VIBRATION ......................... MIL-STD-202F, METHOD 204D, COND. B
- ALTITUDE .......................... MIL-STD-202F, METHOD 105C, COND. B

TEMPERATURE CYCLE ............... MIL-STD-202F, METHOD 107D, COND. A

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION NI)
2 TO 18 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER WITH INTERNAL CW IMMUNE CIRCUITRY
DESCRIPTION

AMC MODEL LVD-910-85 DETECTOR LOG VIDEO AMPLIFIER HAS A LOGGING RANGE OF -80 TO -40/-35dBm (TSS -82 dBm), FROM 9 TO 11 GHz, WITH LINEARITY ERROR OF LESS THAN ±0.5 dB AND FREQUENCY FLATNESS OF ±1.0 dB. OTHER OCTAVE OR 2-18 GHz BAND UNITS ARE AVAILABLE. RISE AND RECOVERY TIMES ARE 50 AND 300ns RESPECTIVELY. DC POWER REQUIREMENTS ARE ONLY +5V@ 90mA AND -5V@ 35mA. SIZE IS 1.3” x 2.3” x 0.3”.

SPECIFICATIONS

- FREQUENCY RANGE .......... 9 TO 11 GHz
- FREQUENCY FLATNESS ......... ±1.0 dB MAXIMUM
- LOGGING RANGE ............. -80 TO -40dBm
- LOG LINEARITY ERROR ...... ±0.5 dB MAXIMUM
- LOG SLOPE .......... 30mV/db
- TEMPERATURE STABILITY ... ±1.0 dB MAXIMUM (0°C TO +60°C)
- VIDEO OFFSET ........ 50mV MAXIMUM
- PULSE RESPONSE ........ 100ns TO CW
- RISE TIME ............. 50ns MAXIMUM
- RECOVERY TIME .......... 300ns MAXIMUM
- TSS .......... -85dBm MINIMUM
- VSWR (RF) .......... 2.1 MAXIMUM
- POWER SUPPLY (NO VIDEO LOAD)
  +V .......... 5VDC @ 90mA MAXIMUM
  -V .......... 5VDC @ 35mA MAXIMUM
- VIDEO LOAD .......... 100Ω MINIMUM
- CONNECTORS
  RF .......... GILBERT GPO #946-3
  VIDEO .......... GILBERT GPO #944-3
  POWER .......... SOLDER PIN
- SIZE .......... 2.3” X 1.3” X 0.3”

AVAILABLE OPTIONS (SPECIFY)

A01 ALTERNATE RF FREQUENCY RANGES
A02 IMPROVED TSS
A03 -54 TO +85C OPERATING TEMPERATURE
A04 ALTERNATE LOG SLOPES
A05 FASTER PULSE RESPONSE
A06 SMA (FEMALE) CONNECTORS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: XXX ± 0.020
3) WEIGHT: 1.5 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE .......... 0°C TO +60°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY .......... MIL-STD-202F, METHOD 103B COND. B
- SHOCK .......... MIL-STD-202F, METHOD 213B COND. B
- VIBRATION .......... MIL-STD-202F, METHOD 2040 COND. B
- ALTITUDE .......... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE .......... MIL-STD-202F, METHOD 107D COND. A

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7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-910-85

9 TO 11 GHz, HIGH EFFICIENCY, SMALL SIZE 40/45dB DLVA WITH PICOWATT SENSITIVITY
LVD-218-70 (OPTION 15) DLVA WITH POSITIVE AND NEGATIVE COMPLIMENTARY OUTPUTS.

DESCRIPTION

The LVD-218 series DLVAs are available in extended 70/75dB dynamic range over the range of 2-18 GHz bandwidth, with true DC coupling. Units employ planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. The DLVAs are of superior construction using state-of-the-art MIC/MMIC technology. The size is 3.0" x 3.5" x 0.5".

FEATURES

- Truly DC Coupled
- Wide Bandwidths
- Fast Rise Times
- Short Recovery Times
- Superior Accuracy
- Extended Dynamic Range Capability
- Miniature Size
- 7.2 oz Weight

SPECIFICATIONS

- Frequency Range: 15 GHz ± 0.5 GHz
- Frequency Flatness: ±1.5dB Maximum (15GHz ± 0.5GHz), ±1.0dB Typical
- TSS: -80dBm (15 GHz ± 0.5 GHz)
- VSWR: 2.5:1 Maximum (@ -20dBm, 15GHz ± 0.5GHz), 2.0:1 Typical
- Logging Range: -75 dBm to -30dBm
- Log Linearity: ±2.5dB Maximum (-75dBm to -30dBm), 1.5dB Typical
- Log Slope (Positive): 50mV/dB (±10% Tolerance in 75 OHM Load)
- Log Slope (Negative): 50mV/dB (±10% Tolerance in 75 OHM Load)
- Log Slope Accuracy: ±5% Maximum of Average Slope
- Log Temperature Stability: ±2.5dB (0°C to 60°C), ±1.5dB Typical
- Rise Time (10% to 90% Points): 50nS Typical
- Recovery Time: 250nS Typical (-80 to -40 dBm)
- Output Video Source Impedance: 75 OHMS ±10% Tolerance
- DC Power (No Load): +V: 9 to 18V @ 250mA Maximum, -V: 9 to 18V @ 100mA Maximum
- Size: 3.0" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

- A01: Any Frequency Value in the 0.2 to 20 GHz range
- A02: ±1dB Frequency Flatness at any Frequency in the 0.2 to 20 GHz range
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS
- A08: OTHER RF BANDWIDTH
- A09: LOG LINEARITY OF ±1.5dB MAXIMUM
- A10: OTHER PROJECTS

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TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION 15)
5GHz ±0.5GHz, 70/75dB, Truly DC-Coupled Detector Log Video Amplifier
With Buffered/Inverted and Un-Inverted (Yield) Video Outputs

MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS

- Temperature: -54°C to +85°C (Operating)
- Humidity: 65°C to +100°C (Storage)
- Shock: MIL-STD-202F, METHOD 103B COND. B
- Vibration: MIL-STD-202F, METHOD 213B COND. B
- Altitude: MIL-STD-202F, METHOD 105G COND. B
- Temperature Cycle: MIL-STD-202F, METHOD 107D COND. A
DESCRIPTION

AMC MODEL TDLVA-0518-50 HAS 30/35dB LOGGING DYNAMIC RANGE WITH THRESHOLD DETECTION CAPABILITY. VIDEO OUTPUT BELOW THRESHOLD IS WITHIN ±20mV DC AND WITH A NOISE LEVEL OF UNDER 25mV RMS. LOGGING ABOVE THRESHOLD IS INSTANTANEOUS WITH A DYNAMIC RANGE OF 30/35dB MINIMUM. DIFFERENT THRESHOLD LEVELS FROM -35dBm TO -10dBm ARE AVAILABLE WITH A TYPICAL INPUT VSWR OF 1.5:1. LOG LINEARITY ABOVE THRESHOLD IS ±0.5dB (-55°C TO +85°C) WITH ±1.0dB LOG STABILITY. AMC'S TDLVA'S OFFER PULSE RESPONSE FROM 50ns TO 1µs WITH RISE TIMES OF 20ns AND RECOVERY TIMES OF UNDER 50ns. FREQUENCY RANGE IS 0.5 TO 18 GHz, WITH FLATNESS OF ±1.0dB TYPICAL. SIZE OF THE UNIT IS 2.2" X 1.5" X 0.4".

SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 18 GHz
- FREQUENCY FLATNESS: ±1.0dB MAXIMUM
- THRESHOLD: -35dBm ±1.0dB TOLERANCE (OVER TEMPERATURE ±1.5dB)
- LOGGING RANGE: -35 TO 0 dBm (NOMINAL)
- USEFUL RANGE: -35 TO +5dBm
- LOG LINEARITY ERROR: ±0.5dB MAXIMUM
- LOG SLOPE: 50mV/µW
- LOG SLOPE ACCURACY: ±4% OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY: ±1.0dB MAXIMUM (-54° TO +85°C)
- PULSE RESPONSE: 50ns TO CW
- RISE TIME: 20ns MAXIMUM
- SETTLING TIME: 45ns MAXIMUM
- RECOVERY TIME: 50ns MAXIMUM
- VSWR: 2.1 MAXIMUM
- VIDEO OUTPUT
  - DC: ±20mV MAXIMUM (BELOW THRESHOLD)
  - AC: 25mV RMS MAXIMUM (BELOW THRESHOLD)
- VIDEO LOAD: 50Ω MINIMUM
- MAXIMUM RF INPUT: +15dBm
- DC POWER (NO LOAD)
  - +V: 9 TO 18V @ 75mA MAXIMUM
  - -V: 9 TO 18V @ 75mA MAXIMUM
- SIZE: 2.2" X 1.5" X 0.4"

OPTIONS (SPECIFY)

A01: ALTERNATE THRESHOLD LEVELS -35 TO -10dBm
A02: 0.2 TO 20 GHz RF EXTENDED FREQUENCY RANGE
A03: ALTERNATE LOG SLOPE
A04: HIGH RF CW/PEAK POWER PROTECTION

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ±0.020
   X.XXX ±0.010
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54°C TO +85°C (OPERATING)
  -85°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B, COND. B
- SHOCK: MIL-STD-202F, METHOD 213B, COND. B
- VIBRATION: MIL-STD-202F, METHOD 2040, COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C, COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D, COND. A

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7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

TDLVA-0518-50
0.5 TO 18 GHz, 30/35dB THRESHOLD DETECTOR LOG VIDEO AMPLIFIER
DESCRIPTION

AMC MODEL DVA-50 PROVIDES A LINEAR AMPLIFIED VIDEO OUTPUT VOLTAGE PROPORTIONAL TO THE INPUT RF VOLTAGE, WHERE THE VIDEO OUTPUT = K x VIN. A TYPICAL VALUE FOR K IS 6. FOR A VIDEO OUTPUT BETWEEN 0 AND 5 VOLTS. THIS UNIT OPERATES FROM 6 TO 18 GHZ WITH TYPICAL TRANSFER LAW LINEARITY OF ±0.5 DB BETWEEN INPUT POWER LEVELS OF -5 AND +15 DB. FREQUENCY FLATNESS OVER THE 6 TO 18 GHZ RANGE IS ±1.5 DB WITH A SIGNAL TO NOISE RATIO GREATER THAN 60 dB AT -5 DBM INPUT POWER. INPUT VSWR IS BETTER THAN 2:1. CURRENT DRAW IS UNDER 30 mA PER SUPPLY BETWEEN ±9 AND ±18 VOLTS. SIZE IS 2.2" x 1.5" x 0.4".

SPECIFICATIONS

- FREQUENCY RANGE: 6 TO 18 GHZ
- FREQUENCY FLATNESS: ±1.5 dB MAXIMUM
- VSWR (RF): 2:1 MAXIMUM
- INPUT POWER RANGE: -5 TO +15 dBm
- MAXIMUM INPUT POWER: +20 dBm
- VIDEO OUTPUT: 0 TO 5 VOLTS MAXIMUM
- VIDEO LOAD: 50Ω MINIMUM
- SIGNAL TO NOISE RATIO: 60 dB MINIMUM, @ -5 dBm INPUT
- OUTPUT LINEARITY: ±0.5 dB TYPICAL, ±0.7 MAXIMUM
- RISE TIME: 20 ns MAXIMUM
- FALL TIME: 50 ns MAXIMUM
- BASELINE STABILITY: ±10 mV
- OUTPUT STABILITY: ±0.75 dB MAXIMUM (0 TO 60°C)
- DC POWER (NO VIDEO LOAD)
  +V: +9 TO 18 VOLTS @ 30 mA MAXIMUM
  -V: -9 TO 18 VOLTS @ 30 mA MAXIMUM
- CONNECTORS
  RF INPUT/VIDEO OUTPUT: SMA (FEMALE)
  POWER SUPPLY: SOLDER PIN
- SIZE: 2.2" x 1.5" x 0.4"

AVAILABLE OPTIONS (SPECIFY)

A01: EXTENDED FREQUENCY RANGE (0.5 TO 18 GHZ)
A02: -54° TO +85° OPERATING TEMPERATURE
A03: ALTERNATE VIDEO TRANSFER GAIN
A04: OTHER RISE/FALL TIMES

MECHANICAL OUTLINE

SMA FEMALE
2 PLACES

0.206
0.085
0.314
1.776
0.40
0.213
0.104 DIA THRU
4 PLACES

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: X.XX ± 0.020
   X.XXX ± 0.010
3) WEIGHT: 2.9 OZ

ENVIRONMENTAL RATINGS

- TEMPERATURE: 0°C TO +60°C (OPERATING)
  -65°C TO +100°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 103B COND.
- SHOCK: MIL-STD-202F, METHOD 213B COND.
- VIBRATION: MIL-STD-202F, METHOD 204D COND.
- ALTITUDE: MIL-STD-202F, METHOD 105C COND.
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND.

AMERICAN MICROWAVE CORPORATION
73116 GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
DVA-50
6 TO 18 GHZ, DC-COUPLED LINEAR DETECTOR VIDEO AMPLIFIER
DESCRIPTION

AMC Model VA-100 is a high speed video buffer amplifier which offers excellent signal fidelity in a 50 ohm system. The -3dB bandwidth is DC to 120 MHz with linear phase/amplitude characteristics. Slew rate limiting occurs at 2000 V/µs, with settling time of under 15 ns to 0.2% and a maximum of 15% for 0 to 2V step. Input and output connectors are SMA (female) with VSWR of 1.5:1 maximum and operating range is -54°C to +85°C. Unit operates from ±9V to ±18V @ ±25mA. Size is 3.0” x 2.0” x 1.0”.

SPECIFICATIONS

- Gain: 1.00 ± 2.5% (DC)
- -3dB Bandwidth: 120MHz (Minimum)
- Slew Rate: 2000 V/µs (Minimum)
- Rise Time (0 to 2V Step): 3ns (Maximum)
- Overshoot: 15% (Maximum)
- Settling Time: 15ns (Maximum to 0.2%)
- DC Offset: ±25mV (Maximum)
- Input/Output Impedance: 50Ω (Nominal)
- Input/Output VSWR: 1.5:1 (Maximum)
- Power Supply (Quiescent)
  +V: 9 to 18V @ 25mA (Maximum)
  -V: 9 to 18V @ 25mA (Maximum)
- Propagation Delay (DC to 100MHz): 3ns (Maximum)
- Size: 3.0” x 2.0” x 1.0”

OPTIONS

- A01: Available gain to 3X
- A02: Matching to alternate loads input/output

MECHANICAL OUTLINE

FEEDTHRU 2 PLACES

1.00
0.688
1.625
2.00

+15VDC
-15VDC

SMA FEMALE 2 PLACES

1.500
3.00

NOTES:
1) Dimensions are in inches
2) Tolerances: ±0.020
3) Weight: 6.48 oz

ENVIRONMENTAL RATINGS

- Temperature: -54°C to +85°C (Operating)
  -65°C to +125°C (Storage)
- Humidity: MIL-STD-202F, METHOD 103B COND. B
- Vibration: MIL-STD-202F, METHOD 204D COND. B
- Altitude: MIL-STD-202F, METHOD 105C COND. B
- Temperature Cycle: MIL-STD-202F, METHOD 107D COND. A

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PRODUCT FEATURE
VA-100
DC TO 120 MHz, HIGH SPEED VIDEO BUFFER AMPLIFIER
TEST DATA
ON
100 MHz TO 18 GHz
45dB DYNAMIC RANGE
DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER (DLVA)

MODEL No: LVD-218-50A-0118
(Serial No: DLS0210)

BY
AMERICAN MICROWAVE CORPORATION

MARCH 11, 1995
100MHz TO 18GHz
45dB DYNAMIC RANGE
DETECTOR LOG
VIDEO AMPLIFIER
(DLVA)

- TRULY DC-COUPLED
- 40/45dB DYNAMIC RANGE
- ULTRA-WIDE BANDWIDTHS
- SHORT RECOVERY TIMES
- FAST RISE TIMES
- SMALL SIZE

AMC MODEL No: LVD-218-50-0118

SPECIFICATIONS:

- FREQUENCY RANGE : 100MHz TO 18.0 GHz
- TSS : -40dBm MIN.
- INPUT VSWR : 3.0:1 @ -20dBm (0.1 to 18.0GHz)
- FLATNESS : ±1.0dB MAX. @ -20dBm (0.1 to 18.0GHz)
- LOG SLOPE : 50mV/dB (Other Slopes Available)
- SLOPE ACCURACY : ±4% OF AVERAGE SLOPE
- LOG LINEARITY : ±1.0dB MAX. (@-40dBm TO 0dBm)
- RISE TIME : 20nS MAX. (10% TO 90% POINTS)
- SETTLING TIME : 45nS MAX.
- RECOVERY TIME : 200nS Typical (300nS MAX.)
- OUTPUT STABILITY : ±1.0dB MAX. (-54°C TO +85°C)
- DC POWER SUPPLY : +15vdc @ 120mA MAX. (Other Voltages Available)
- RF INPUT POWER : +13dBm MAX.
- SIZE : 1.5" X 2.2" X 0.4"

OTHER FREQUENCY BANDWIDTHS AVAILABLE
**SUMMARY TEST DATA**
ON
**DETECTOR LOG VIDEO AMPLIFIER—DLVA**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (0.1 - 18 GHz)</td>
<td>3.0:1</td>
<td>2.9:1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to 0 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.2 V to 2.2 V</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (0.1 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-42 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>+49 to &lt;52 mV/dB</td>
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</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.0 dB (max)</td>
<td>-0.87 dB</td>
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<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (0.1 - 18 GHz) @ -20 dBM</td>
<td>±1.0 dB (max)</td>
<td>±0.5 dB</td>
<td></td>
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<tr>
<td>7</td>
<td>RECOVERY TIME (typical) -40 to 0 dBm</td>
<td>150 nS TYP</td>
<td>200μS</td>
<td>200sec</td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54°C to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.7 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 nS (max)</td>
<td>18.2sec</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V</td>
<td>120 mA (max)</td>
<td>67 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V</td>
<td>80 mA (max)</td>
<td>61 mA</td>
<td></td>
</tr>
</tbody>
</table>

**TESTED BY:** B.B.  
**TEMPERATURE:** -54°C TO +85°C  
**DATE:** 3/2/95

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 3/2/95

**QA/QC APPROVAL:**  
**DATED:** 3/2/95
LVD-218-50A: S/N DL50210
LOG TRANSFER
WITH TEMPERATURE

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

+ 30 C  - 55 C  + 85 C

TESTED BY: B.B., 3/2/95
10 GHz
LVD-218-50A: S/N DL50210
LOG TRANSFER
WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

0 1 2 3
RF INPUT POWER (dBm)

0.1 GHz + 10 GHz * 18 GHz

TESTED BY: B.B., 3/2/95
+ 30 C
TEST DATA
ON
0.5 to 18 GHz
ULTRA - WIDEBAND
40/45 dB
TRULY DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER
(DLVA)
AMC MODEL NO: LVD-218-50 (Option 0518)
(SERIAL NO: DL30468)
BY
AMERICAN MICROWAVE CORPORATION
10 SEPTEMBER 1993
DESCRIPTION
THE LVD-218-50 (OPTION 0518) SERIES DLVA's ARE AVAILABLE IN STANDARD 50dB AND EXTENDED 70/75dB DYNAMIC RANGE OVER THE FULL 0.5-18GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA's ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY.

FEATURES
- **TRULY DC COUPLED**
- **WIDE BANDWIDTHS**
- **FAST RISE TIMES**
- **SHORT RECOVERY TIMES**
- **SUPERIOR ACCURACY**
- **EXTENDED DYNAMIC RANGE CAPABILITY**
- **MINIATURE SIZE**
- **1.75 OZ WEIGHT**

SPECIFICATIONS
- **FREQUENCY RANGE**: 0.5 TO 18 GHz
- **FREQUENCY FLATNESS @-20dBm**: ±1.5dB (±1.0dB TYPICAL)
- **LOGGING RANGE**: -40 TO 0dBm MINIMUM
- **USEFUL RANGE**: -40 TO +5dBm
- **LOG LINEARITY ERROR**: ±1.0dB MAXIMUM (±0.5dB TYPICAL)
- **LOG SLOPE**: 50mV/dB
- **LOG SLOPE ACCURACY**: ±4% OF AVERAGE SLOPE
- **TEMPERATURE STABILITY**: ±1.0 dB MAXIMUM, ±0.5dB TYPICAL (-54°C TO +85°C)
- **PULSE RESPONSE**: 5nS TO CW
- **RISE TIME (10% TO 90% POINTS)**: 20nS MAXIMUM, (15nS TYPICAL)
- **SETTLING TIME**: 45nS MAXIMUM
- **RECOVERY TIME**: 150nS TYPICAL, 200nS MAXIMUM
- **TSS**: -40dBm MINIMUM
- **VSWR (RF)**: 2.5:1
- **MAXIMUM RF INPUT**: +15dBm
- **VIDEO OUTPUT LEVEL**: 0 TO 2.5 VOLS (50Ω MINIMUM LOAD)
- **DC POWER (100Ω LOAD)**
  - **+V**: -12V @ 120mA MAXIMUM
  - **-V**: -12V @ 80mA MAXIMUM
- **SIZE**: 2.2" X 1.5" X 0.4"

AVAILABLE OPTIONS (SPECIFY)
- A01: EXTENDED 0.2 TO 20 GHz RF FREQUENCY RANGE
- A02: EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
- A03: FASTER RISE/RECOVERY TIMES
- A04: ALTERNATE LOG SLOPES
- A05: HIGH POWER RF CW/PEAK PROTECTION
- A06: EXTENDED LOGGING RANGE
- A07: OTHER VIDEO LOADS

MECHANICAL OUTLINE

NOTES:
1) DIMENSIONS ARE IN INCHES
2) TOLERANCES: ±0.020
3) WEIGHT: 1.75 OZ

ENVIRONMENTAL RATINGS
- **TEMPERATURE**: -54°C TO +85°C (OPERATING)
- **-65°C TO +100°C (STORAGE)**
- **HUMIDITY**: MIL-STD-202F, METHOD 103B, CONDITION B
- **SHOCK**: MIL-STD-202F, METHOD 213B, CONDITION B
- **VIBRATION**: MIL-STD-202F, METHOD 204D, CONDITION B
- **ALTITUDE**: MIL-STD-202F, METHOD 105C, CONDITION B
- **TEMPERATURE CYCLE**: MIL-STD-202F, METHOD 107D, CONDITION A

AMERICAN MICROWAVE CORPORATION
731G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE
LVD-218-50 (OPTION 0518)
0.5 TO 18 GHz, 40/45dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER

[Diagram of mechanical outline with dimensions and components]
**SUMMARY TEST DATA**

ON

DETECTOR LOG VIDEO AMPLIFIER--DLVA

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (2 - 18 GHz)</td>
<td>2.7:1</td>
<td>2.5:1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +0 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.3 to 2.3 VOLTS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-42 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>50 to 51 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.0 dB (max)</td>
<td>-0.5 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±1.5 dB at -20 dBm (max)</td>
<td>±1.1 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>150 nseconds</td>
<td>100 nS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54°C to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.6 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>17 nS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V with 100 ohm load</td>
<td>120 mA (max)</td>
<td>87.5 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V with 100 ohm load</td>
<td>80 mA (max)</td>
<td>69.2 mA</td>
<td></td>
</tr>
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</table>

PRODUCTION MANAGER APPROVAL: [Signature] DATED: 6/25/93

QA/QC APPROVAL: [Signature] DATED: 6/25/93
S\N DL30468
LOG TRANSFER
WITH TEMPERATURE

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

+ 30 °C  - -55 °C  * +85 °C

TESTED BY: B.B., 6/10/93
10 GHz
TEST DATA

FOR

WIDEBAND

2 - 18 GHz DC-COUPL ED

DETECTOR LOG VIDEO AMPLIFIER
(DLVA)

MODEL: LVD-218-50A
(SERIAL NO: BG40192)

BY

AMERICAN MICROWAVE CORPORATION

17 FEBRUARY 1992
# LVD-218-50A
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### TEST DATA

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<td>TEST DATA ON DLVA -30°C</td>
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<td>TEST DATA ON DLVA 0°C</td>
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<td>TEST DATA ON DLVA +30°C</td>
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<td>TEST DATA ON DLVA +85°C</td>
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<td>LOG TRANSFER RESPONSE VS. FREQUENCY</td>
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<td>LOG TRANSFER RESPONSE VS. TEMPERATURE - 2 GHz</td>
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<td>LOG TRANSFER RESPONSE VS. TEMPERATURE - 10 GHz</td>
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<td>11.0</td>
<td>LOG TRANSFER RESPONSE VS. TEMPERATURE - 18 GHz</td>
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<td>12.0</td>
<td>LOG TRANSFER RESPONSE ERROR VS. TEMPERATURE - 2 GHz</td>
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<td>13.0</td>
<td>LOG TRANSFER RESPONSE ERROR VS. TEMPERATURE - 10 GHz</td>
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<tr>
<td>14.0</td>
<td>LOG TRANSFER RESPONSE ERROR VS. TEMPERATURE - 18 GHz</td>
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<td>15.0</td>
<td>LOG LINEARITY - 2 GHz</td>
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<td>16.0</td>
<td>LOG LINEARITY - 6 GHz</td>
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<td>LOG LINEARITY - 10 GHz</td>
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<td>LOG LINEARITY - 18 GHz</td>
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<td>21.0</td>
<td>FREQUENCY RESPONSE</td>
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<td>22.0</td>
<td>FREQUENCY FLATNESS - ERROR</td>
<td>23</td>
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<td>23.0</td>
<td>FREQUENCY FLATNESS -(-20 dBm)</td>
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<td>RECOVERY TIME VS. PULSE WIDTH - 2 GHz</td>
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<tr>
<td>25.0</td>
<td>RECOVERY TIME VS. PULSE WIDTH - 10 GHz</td>
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<td>RECOVERY TIME VS. PULSE WIDTH - 18 GHz</td>
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<td>RECOVERY TIME AT 10 GHz - DETAILED VIEW</td>
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<tr>
<td>28.0</td>
<td>RECOVERY TIME AT 10 GHz - DETAILED VIEW</td>
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<tr>
<td>29.0</td>
<td>RISE TIME VS. FREQUENCY</td>
<td>30</td>
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<tr>
<td>30.0</td>
<td>PULSE RESPONSE - 2 GHz</td>
<td>31</td>
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<td>31.0</td>
<td>PULSE RESPONSE - 10 GHz</td>
<td>32</td>
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<td>32.0</td>
<td>PULSE RESPONSE - 18 GHz</td>
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</tr>
<tr>
<td>33.0</td>
<td>VSWR VS. FREQUENCY @ -20 dBm</td>
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<tr>
<td>34.0</td>
<td>TSS VS. VIDEO BANDWIDTH AND RF FREQUENCY</td>
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### ADDITIONAL TEST DATA

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<td>RECOVERY TIME - 18 GHz @ +85°C</td>
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<tr>
<td>37.0</td>
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</tr>
<tr>
<td>38.0</td>
<td>RISE TIME AND PULSE RESPONSE - 18 GHz @ +85°C</td>
<td>40</td>
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<td>39.0</td>
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<td>41</td>
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</table>
## TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER--DLVA

**MODEL NO:** LVD-218-50A  
**DATE:** 2/10/92  
**SERIAL NO:** BG40192  
**TESTED BY:** B. Baker

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (2 - 18 GHz)</td>
<td>2.7:1</td>
<td>2.6:1</td>
<td>Q</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm</td>
<td>PLOT ATTACHED</td>
<td>-</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-42 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (+ 10% TOL)</td>
<td>50 mV/dB</td>
<td>48 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.5 dB (max)</td>
<td>±0.48 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±2.0 dB at -20 dBm (max)</td>
<td>±0.25 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>300 µS</td>
<td>300 µS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54 to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.65 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>12 µS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V</td>
<td>120 mA (max)</td>
<td>100.7 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V</td>
<td>80 mA (max)</td>
<td>53.8 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 2/11/92  
**QA/QC APPROVAL:**  
**DATED:** 2/11/92
<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
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<td>2.7:1</td>
<td>2.6:1</td>
<td>QA/QC</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm</td>
<td>PLOT ATTACHED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-41 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>48 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.5 dB (max)</td>
<td>±0.53 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±2.0 dB at -20 dBm (max)</td>
<td>±0.35 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>300 µS</td>
<td>250 µS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54 to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.65 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>12 µS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V</td>
<td>120 mA (max)</td>
<td>101.5 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V</td>
<td>80 mA (max)</td>
<td>63.3 mA</td>
<td></td>
</tr>
</tbody>
</table>

PRODUCTION MANAGER APPROVAL: [Signature] DATED: 2/11/92

QA/QC APPROVAL: [Signature] DATED: 2/11/92
## Test Data

**On**

**Detector Log Video Amplifier—DLVA**

**Model No:** LVD-218-50A

**Serial No:** BG-40192

**Temperature:** 0°C

### Test Item Table

<table>
<thead>
<tr>
<th>Test Item No.</th>
<th>Parameters</th>
<th>Specified Value</th>
<th>Measured Value</th>
<th>Remarks</th>
</tr>
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<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (2 - 18 GHz)</td>
<td>2.7:1</td>
<td>2.6:1</td>
<td>J</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm</td>
<td>PLOT ATTACHED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-41 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (±10% TOL)</td>
<td>50 mV/dB</td>
<td>49 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.5 dB (max)</td>
<td>±0.56 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±2.0 dB at -20 dBm (max)</td>
<td>±0.5 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>300 µs</td>
<td>250 µs</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54 to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.65 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>12 NS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V</td>
<td>120 mA (max)</td>
<td>161.9 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V</td>
<td>80 mA (max)</td>
<td>63.8 mA</td>
<td>V</td>
</tr>
</tbody>
</table>

**Production Manager Approval:**

**QA/QC Approval:**

**Date:** 2/10/92

**Tested By:**

**Job No:**

**Date:** 12/2/92
## TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER—DLVA

**MODEL NO:** LVD-218-50A  
**SERIAL NO:** BG40192  
**DATE:** 2/10/92  
**TESTED BY:** B. Baker  
**TEMPERATURE:** +30°C

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (2 - 18 GHz)</td>
<td>2.7:1</td>
<td>2.6:1</td>
<td>S</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm</td>
<td>PLOT ATTACHED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-41 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/db</td>
<td>49 mV/db</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.5 dB (max)</td>
<td>±0.65 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±2.0 dB at -20 dBm (max)</td>
<td>±0.3 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>150 μS</td>
<td>130 μS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54 to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.65 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>16 NS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V</td>
<td>120 mA (max)</td>
<td>101.5 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V</td>
<td>80 mA (max)</td>
<td>64.4 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
DATED: 2/11/92  
**QA/QC APPROVAL:**  
DATED: 2/11/92
## TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER--DLVA

**MODEL NO:** LVD-218-50A

**SERIAL NO:** BG 40192

**TEMPERATURE** +60°C

**JOB NO:** ______

**DATE** 2/10/92

**TESTED BY:** B. Baker

### TEST ITEM NO. | PARAMETERS | SPECIFIED VALUE | MEASURED VALUE | REMARKS QA/QC
---|---|---|---|---
1 | INPUT VSWR @ -20 dBm (2 - 18 GHz) | 2.7:1 | 2.6:1 | 
2 | TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm | PLOT ATTACHED | | 
3 | TSS (2 - 18 GHz) | -40 dBm (min) | -41 dBm | 
4 | LOG SLOPE (± 10% TOL) | 50 mV/DB | 49 mV/DB | 
5 | LOG LINEARITY @ -40 dBm TO 0 dBm | ±1.5 dB (max) | ±0.52 dB | 
6 | FREQUENCY FLATNESS (2 - 18 GHz) | ±2.0 dB at -20 dBm (max) | ±0.34 dB | 
7 | RECOVERY TIME (max) -40 to 0 dBm | 150 μS | 120 μS | 
8 | OUTPUT STABILITY (-54 to +85°C) | ±1.0 dB (max) | ±0.66 dB | 
9 | RISE TIME (10% TO 90% POINTS) | 20 NS (max) | 12 μS | 
10 | D.C. POWER @ +12 V | 120 mA (max) | 99.9 mA | 
11 | D.C. POWER @ -12 V | 80 mA (max) | 64.6 mA | 

**PRODUCTION MANAGER APPROVAL:**

**DATING:** 2/11/92

**QA/QC APPROVAL:**

**DATING:** 2/13/92
# TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER--DLVA

MODEL NO: LVD-218-50A
SERIAL NO: BG40192
TEMPERATURE +85°C

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (2 - 18 GHz)</td>
<td>2.7:1</td>
<td>2.6:1</td>
<td>□</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -40 dBm to +5 dBm</td>
<td>PLOT ATTACHED</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>TSS (2 - 18 GHz)</td>
<td>-40 dBm (min)</td>
<td>-40 dBm</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>49 mV/dB</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -40 dBm TO 0 dBm</td>
<td>±1.5 dB (max)</td>
<td>±0.6 dB</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (2 - 18 GHz)</td>
<td>±2.0 dB at -20 dBm (max)</td>
<td>±0.25 dB</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (max) -40 to 0 dBm</td>
<td>150 µS</td>
<td>120 µS</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-54 to +85°C)</td>
<td>±1.0 dB (max)</td>
<td>±0.65 dB</td>
<td>—</td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>20 NS (max)</td>
<td>13 µS</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +12 V</td>
<td>120 mA (max)</td>
<td>98.9 mA</td>
<td>□</td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -12 V</td>
<td>80 mA (max)</td>
<td>64.7 mA</td>
<td>□</td>
</tr>
</tbody>
</table>

PRODUCTION MANAGER APPROVAL: [Signature]
DATED: 2/11/92

QA/QC APPROVAL: [Signature]
DATED: 2/11/92
LVD-218-50A
LOG TRANSFER RESPONSE
VS. FREQUENCY

OUTPUT (VOLTS)

INPUT POWER (dBm)

--- 2GHz
--- 6GHz
--- 10GHz
--- 12GHz
--- 15GHz
--- 18GHz

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
LOG TRANSFER RESPONSE
VS. TEMPERATURE - 2GHz

OUTPUT (VOLTS)

INPUT POWER (dBm)

-55C — -30C — 0C — +30C — +60C — +85C

S/N: BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A
LOG TRANSFER RESPONSE
VS. TEMPERATURE - 10GHz

S/N: BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A
LOG TRANSFER RESPONSE
VS. TEMPERATURE - 18GHz

S/N:BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A

LOG TRANSFER RESPONSE ERROR
VS. TEMPERATURE - 2GHz

ERROR (dB)

INPUT POWER (dBm)

-55C  -30C  0C  +30C  +60C  +85C

S/N:BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A
LOG TRANSFER RESPONSE ERROR
VS. TEMPERATURE - 10GHz

ERROR (dB)

INPUT POWER (dBm)

-55C — -30C — 0C — +30C — +60C — +85C

S/N:BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A

LOG TRANSFER RESPONSE ERROR

VS. TEMPERATURE - 18GHz

ERROR (dB)

-1.0 -0.75 -0.5 -0.25 0 0.25 0.5 0.75 1

INPUT POWER (dBm)

-50 -40 -30 -20 -10 0 10

-55C -30C 0C +30C +60C +85

S/N:BG40192 2/10/92
TESTED BY: B.B.
LVD-218-50A
LOG LINEARITY - 2GHz

ERROR (dB)

INPUT POWER (dBm)

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
LOG LINEARITY - 6GHz

ERROR (dB)

INPUT POWER (dBm)

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A

LOG LINEARITY - 10GHz

ERROR (dB)

INPUT POWER (dBm)

S/N: BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
LOG LINEARITY - 12GHz

ERROR (dB)

INPUT POWER (dBm)

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
LOG LINEARITY - 15GHz

ERROR (dB)

INPUT POWER (dBm)

S/N: BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
LOG LINEARITY - 18GHz

ERROR (dB)

INPUT POWER (dBm)

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
FREQUENCY RESPONSE

OUTPUT (VOLTS)

0  0.5  1  1.5  2  2.5  3

0  5  10  15  20

FREQUENCY (GHz)

--- 0dBm --- -5dBm --- -10dBm --- -20dBm
--- -30dBm --- -35dBm --- -40dBm

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A
FREQUENCY FLATNESS - ERROR

ERROR (dB)

FREQUENCY (GHz)

0dBm  -5dBm  -10dBm  -20dBm
-30dBm  -35dBm  -40dBm

S/N:BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
LVD-218-50A

FREQUENCY FLATNESS (-20dBm)

ERROR (dB)

FREQUENCY (GHz)

S/N: BG40192 2/10/92
ROOM TEMPERATURE
TESTED BY: B.B.
RECOVERY TIME VS. PULSE WIDTH - 2 GHz

POWER LEVEL (dBm)

SQUARE WAVE with 1 µS Pulse
0.4 v/div
50 ns/div

SQUARE WAVE with 10 µS Pulse
0.4 v/div
50 ns/div

SQUARE WAVE with 100 µS Pulse
0.4 v/div
50 ns/div

S/N: BG40192    ROOM TEMPERATURE
TESTED BY: B.B.  2/10/92
RECOVERY TIME VS. PULSE WIDTH - 10 GHz

POWER LEVEL (dBm)

SQUARE WAVE
with 1 µs Pulse
0.4 v/div
50 ns/div

SQUARE WAVE
with 10 µs Pulse
0.4 v/div
50 ns/div

SQUARE WAVE
with 100 µs Pulse
0.4 v/div
50 ns/div

S/N: BG40192
ROOM TEMPERATURE
TESTED BY: B.B.
2/10/92
RECOVERY TIME VS. PULSE WIDTH - 18 GHz

POWER LEVEL (dBm)

SQUARE WAVE with 1 µS Pulse
0.4 v/div
50 ns/div

SQUARE WAVE with 10 µS Pulse
0.4 v/div
50 ns/div

SQUARE WAVE with 100 µS Pulse
0.4 v/div
50 ns/div

S/N: BG40192       ROOM TEMPERATURE
TESTED BY: B.B.      2/10/92
RECOVERY TIME AT 10 GHz - DETAILED VIEW

S/N: BG40192  SQUARE WAVE with 10 µs Pulse
ROOM TEMPERATURE  TESTED BY: B.B.  2/10/92
S/N: BG40192     SQUARE WAVE with 10 µs Pulse
ROOM TEMPERATURE    TESTED BY: B.B.  2/10/92
RISE TIME VS. FREQUENCY

POWER LEVEL (dBm)

0 2 GHz
-10 10 ns/div
-20 0.4 v/div
-30
-40

0 10 GHz
-10 10 ns/div
-20 0.4 v/div
-30
-40

0 18 GHz
-10 10 ns/div
-20 0.4 v/div
-30
-40

S/N: BG40192  ROOM TEMPERATURE
TESTED BY: B.B.  2/10/92
PULSE RESPONSE - 2 GHz

20 ns/div
0.4 v/div

200 ns/div
0.4 v/div

2 µs/div
0.4 v/div

20 µs/div
0.4 v/div

S/N: BG40192       ROOM TEMPERATURE
TESTED BY: B.B.     2/10/92
PULSE RESPONSE - 10 GHz

POWER LEVEL (dBm)

20 ns/div
0.4 v/div

200 ns/div
0.4 v/div

2 µs/div
0.4 v/div

20 µs/div
0.4 v/div

S/N: BG40192  ROOM TEMPERATURE
TESTED BY: B.B.  2/10/92
PULSE RESPONSE - 18 GHz

S/N: BG40192       ROOM TEMPERATURE
TESTED BY: B.B.     2/10/92
LVD-218-50A

VSWR VS. FREQUENCY @ -20 dBm
2 TO 18 GHz

S/N: BG40192 2/10/92
TESTED BY: B.B.
## TSS VS. VIDEO

**BANDWIDTH AND RF FREQUENCY**

<table>
<thead>
<tr>
<th>VIDEO BANDWIDTH</th>
<th>2 GHz</th>
<th>10 GHz</th>
<th>18 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MHz</td>
<td>-48 dBm</td>
<td>-48 dBm</td>
<td>-46 dBm</td>
</tr>
<tr>
<td>10 MHz</td>
<td>-44 dBm</td>
<td>-44 dBm</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>20 MHz</td>
<td>-43 dBm</td>
<td>-43 dBm</td>
<td>-41 dBm</td>
</tr>
<tr>
<td>OPEN BANDWIDTH</td>
<td>-40 dBm</td>
<td>-40 dBm</td>
<td>-40 dBm</td>
</tr>
</tbody>
</table>

S/N: BG40192  ROOM TEMPERATURE
TESTED BY: B.B.  2/10/92
ADDITIONAL
TEST DATA
RECOVERY TIME - 18 GHz (DETAILED VIEW)

- S/N: BG40192  SQUARE WAVE WITH 10µS PULSE
  ROOM TEMPERATURE  TESTED BY: B.B.  2/10/92

-0 dBm
  0.4 v/div
  50 ns/div

-10 dBm
  0.4 v/div
  50 ns/div

-20 dBm
  0.4 v/div
  50 ns/div

-30 dBm
  0.4 v/div
  50 ns/div
RECOVERY TIME - 18 GHz

-20 dBm
50 ns/div
0.4 v/div

-30 dBm
50 ns/div
0.4 v/div

S/N: BG40192 + 85°C SQUARE WAVE WITH 10µS PULSE
TESTED BY: B.B. 2/10/92
TYPICAL
TEST DATA
FOR
WIDEBAND
0.5 - 18 GHz DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER
(DLVA)

MODEL: LVD-0518-50

BY

AMERICAN MICROWAVE CORPORATION

15 SEPTEMBER 1992
## SUMMARY TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER--DLVA

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>MEASURED VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.49 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>48.0 to 500 mV/dB</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C</td>
<td>±0.25 dB</td>
</tr>
<tr>
<td></td>
<td>(0 TO 35 dBm)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C</td>
<td>±0.6 dB</td>
</tr>
<tr>
<td></td>
<td>(-35 TO 40 dBm)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>2.2 ms MAX</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 nS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 µS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (±0 dBm INPUT)</td>
<td>400 nS MAX</td>
</tr>
<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±2.0 dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE</td>
<td>0.067 to 0.082 VOLTs</td>
</tr>
<tr>
<td></td>
<td>(-54°C TO +85°C)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA)</td>
<td>58.3 mA MAX</td>
</tr>
<tr>
<td></td>
<td>(NO INPUT, +15V)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA)</td>
<td>68.2 mA</td>
</tr>
<tr>
<td></td>
<td>(NO INPUT, -15V)</td>
<td></td>
</tr>
</tbody>
</table>

PRODUCTION MANAGER APPROVAL: [Signature] DATED: 8-27-97
QA/QC APPROVAL: [Signature] DATED: 8-27-92
### SUMMARY TEST DATA

#### ON

DETECTOR LOG VIDEO AMPLIFIER—DLVA

<table>
<thead>
<tr>
<th>CUSTOMER</th>
<th>JOB NO: 20495</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL NO:</td>
<td>LVD-0518</td>
</tr>
<tr>
<td>SERIAL NO:</td>
<td>DL-2C357</td>
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</table>

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>MEASURED VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.46 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>49.5 TO 50.5 mV/10 dB</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.45 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±0.8 dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>24 nS MAX</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 nS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>29 µS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (±0 dBm INPUT)</td>
<td>400 nS MAX</td>
</tr>
<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±2.0 dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.7 : 1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0 : 1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.069 TO 0.095</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>57.7 mA MAX</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>67.5 mA MAX</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**

**DATE:** 8-27-92

**QA/QC APPROVAL:**

**DATE:** 8-27-92
<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
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<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.44 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>49.0 to 51.0 mv</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-47.0 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (35 TO 40 dBm)</td>
<td>±1.1 dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>24 ns</td>
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<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>500 nS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 μS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400 μS</td>
</tr>
<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±1.5 dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.1 : 1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.8 : 1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.055 to 0.089 VOLT</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.2 mA MAX</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>66.4 mA MAX</td>
</tr>
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</table>
## SUMMARY TEST DATA

**ON**

**DETECTOR LOG VIDEO AMPLIFIER--DLVA**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
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<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>( \pm 0.97 ) dB</td>
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<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>480 to 50.2 MV/( \mu )A</td>
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<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>( \pm 0.4 ) dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (35 TO 40 dBm)</td>
<td>( \pm 0.8 ) dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>22 ms (max)</td>
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<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 ( \mu )S</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 ( \mu )S</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400 ( \mu )S (max)</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>( \pm 2.0 ) dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.8:1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.080 TO 0.110 Vvolts</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.3 mA (max)</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>67.9 mA (max)</td>
</tr>
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PRODUCTION MANAGER APPROVAL: [Signature]  DATED: 8/27/92

QA/QC APPROVAL: [Signature]  DATED: 8/27/92
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<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.45dB</td>
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<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>48.75 to 50.25 μV/dB</td>
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<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-92 dBm</td>
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<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.55dB</td>
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<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±0.5dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>22μS</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40μS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20μS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400μS</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±1.75dB</td>
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<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.06 to 0.078 VOLTS</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>60.7 mA max</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>69.7 mA max</td>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>± 0.47 dB</td>
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<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>49.5 to 52.5 nV/μB</td>
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<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>± 0.4 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>± 0.5 dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>23 ms max</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>400 μS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 μS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400 μS max</td>
</tr>
<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>± 1.5 dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2:6:1 max</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1 max</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.045 to 0.110</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>59.4 mA max</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>68.8 mA max</td>
</tr>
</tbody>
</table>

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QA/QC APPROVAL: [Signature] DATED: 8-27-92
## SUMMARY TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER--DLVA

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<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.45 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>49.5 TO 50.1 mV/dB</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.9 dB</td>
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<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±0.6 dB</td>
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<tr>
<td>6</td>
<td>RISE TIME</td>
<td>21µS max</td>
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<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40µS</td>
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<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20µS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400µS max</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±1.3 dB</td>
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<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.2:1</td>
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<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1</td>
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<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.048 TO 0.106 Volts</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.3mA max</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>68.5mA max</td>
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QA/QC APPROVAL: [Signature] DATED: 8-27-92
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<th>TEST ITEM NO.</th>
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<th>MEASURED VALUE</th>
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<tbody>
<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.44 dB</td>
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<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>48.0 TO 51.0 mV/decibel</td>
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<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±1.0 dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>22.8 ns</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 ns</td>
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<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 μs</td>
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<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400 μs max</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±0.6 dB</td>
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<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.7:1</td>
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<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1</td>
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<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.087 TO 0.116 volts</td>
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<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>603 mA max</td>
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<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>67.9 mA max</td>
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<td>TEST ITEM NO.</td>
<td>PARAMETERS</td>
<td>MEASURED VALUE</td>
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<td>49.25 to 50.5 V/\text{dB}</td>
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<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
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<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±0.5 dB</td>
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<tr>
<td>6</td>
<td>RISE TIME</td>
<td>22 ms max</td>
</tr>
<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 nS</td>
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<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 \mu S</td>
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<tr>
<td>9</td>
<td>RECOVERY TIME (-0 dBm INPUT)</td>
<td>300 \mu S max</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±1.5 dB</td>
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<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
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<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
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<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.043 to 0.081 V/\text{dB}</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.8 mA</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>68.0 mA</td>
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<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.45 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>48.0 TO 51.5 MVD/1dB</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-42 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±1.1 dB</td>
</tr>
<tr>
<td>6</td>
<td>RISE TIME</td>
<td>220S max</td>
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<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 nS</td>
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<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 µS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>300 µS</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±1.5 dB</td>
</tr>
<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
</tr>
<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.9:1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.037 TO 0.084 VOLTS</td>
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<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.7 mA max</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>68.3 mA max</td>
</tr>
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PRODUCTION MANAGER APPROVAL: [Signature] DATED: 8-27-92

QA/QC APPROVAL: [Signature] DATED: 8-27-92
## SUMMARY TEST DATA

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**DETECTOR LOG VIDEO AMPLIFIER—DLVA**

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<tr>
<td>1</td>
<td>LOG LINEARITY (-40 TO 0 dBm)</td>
<td>±0.47 dB</td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE (-40 TO 0 dBm)</td>
<td>48.5 TO 50.5 mV/db</td>
</tr>
<tr>
<td>3</td>
<td>TSS LEVEL (0.5 TO 18 GHz)</td>
<td>-9.2 dBm</td>
</tr>
<tr>
<td>4</td>
<td>LOG STABILITY FROM -54°C TO +85°C (0 - 35 dBm)</td>
<td>±0.5 dB</td>
</tr>
<tr>
<td>5</td>
<td>LOG STABILITY FROM -54°C TO +85°C (-35 TO 40 dBm)</td>
<td>±0.7 dB</td>
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<tr>
<td>6</td>
<td>RISE TIME</td>
<td>20 μS</td>
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<tr>
<td>7</td>
<td>SETTLING TIME (100 nS PULSE, -25 dBm)</td>
<td>40 μS</td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME (+14 dBm INPUT)</td>
<td>20 μS</td>
</tr>
<tr>
<td>9</td>
<td>RECOVERY TIME (≤0 dBm INPUT)</td>
<td>400 μS</td>
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<tr>
<td>10</td>
<td>FREQUENCY FLATNESS (0.5 TO 18 GHz)</td>
<td>±2.2 dB</td>
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<tr>
<td>11</td>
<td>VSWR (0 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>2.5:1</td>
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<tr>
<td>12</td>
<td>VSWR (-20 dBm INPUT, 0.5 TO 18 GHz)</td>
<td>3.0:1</td>
</tr>
<tr>
<td>13</td>
<td>VIDEO BASELINE VOLTAGE (-54°C TO +85°C)</td>
<td>0.0444 TO 0.100 VOLTS</td>
</tr>
<tr>
<td>14</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, +15V)</td>
<td>58.5 mA</td>
</tr>
<tr>
<td>15</td>
<td>D.C. POWER CONSUMPTION (mA) (NO INPUT, -15V)</td>
<td>67.8 mA</td>
</tr>
</tbody>
</table>

**JOB NO:** 20495

**TESTED BY:** B. Baker

**DATE:** 9/14/92

**PRODUCTION MANAGER APPROVAL:**

**DATED:** 9/15/92

**QA/QC APPROVAL:**

**DATED:** 9-15-92
LVD-0518-50
LOG TRANSFER WITH TEMPERATURE

9/9/92, 10 GHz
S/N: DL20890
LVD-0518-50
VIDEO OUTPUT WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

FREQUENCY (GHz)

- -40 dBm  - -36 dBm  - -30 dBm  - -20 dBm
- -10 dBm  - -5 dBm   0 dBm  +5 dBm

9/9/92
S/N: DL20890
TEST DATA
ON
0.5 to 18 GHz
ULTRA - WIDEBAND
70/75 dB
TRULY DC-COUPL ED
DETECTOR LOG VIDEO AMPLIFIER
(DLVA)
AMC MODEL NO: LVD-218-70/75 (Option 0518)
(SERIAL NO: DL308148)
BY
AMERICAN MICROWAVE CORPORATION
10 SEPTEMBER 1993
DESCRIPTION

THE LVD-218 SERIES DLVA'S ARE AVAILABLE IN EXTENDED 70/75db AND STANDARD 50db DYNAMIC RANGE OVER THE FULL 0.5-18 GHz BANDWIDTH, WITH TRUE DC COUPLING. UNITS EMPLOY PLANAR DIODE DETECTORS AND INTEGRATED VIDEO CIRCUITRY FOR HIGH SPEED PERFORMANCE AND OUTSTANDING RELIABILITY. THE DLVA'S ARE OF SUPERIOR CONSTRUCTION USING STATE-OF-THE-ART MIC/MMIC TECHNOLOGY. THE SIZE IS 3.0" x 3.5" x 0.5".

FEATURES

- TRULY DC COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SHORT RECOVERY TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE CAPABILITY
- MINIATURE SIZE
- 7.2 OZ WEIGHT

SPECIFICATIONS

- FREQUENCY RANGE .................. 0.5 TO 18 GHz
- FREQUENCY FLATNESS .............. ±2.0dB TYPICAL (±2.5dB MAXIMUM)
- TSS .................................. -68dBm (-70dBm 6-18 GHz)
- VSWR .................................. 3.0:1 MAXIMUM (2.5:1 TYPICAL)
- DYNAMIC RANGE .................... 80db
- LOGGING RANGE ..................... -70 TO +10dBm
- LOG LINEARITY ..................... ±1.75db
- LOG SLOPE .......................... 50mV/db OR AS DESIRED
- LOG SLOPE ACCURACY .............. ±1.5% MAXIMUM OF AVERAGE SLOPE
- LOG TEMPERATURE STABILITY ....... ±1.5°C (0°C TO 60°C)
- RISE TIME ......................... 30ns MAXIMUM, 20ns TYPICAL
- RECOVERY TIME .................... 250ns MAXIMUM, 350ns TYPICAL
- VIDEO LOAD ......................... 50 OHMS (TYPICAL), OR AS DESIRED
- DC POWER (NO LOAD) .............. +V - 9 TO 18V @350mA TYPICAL, 375mA MAXIMUM
- -V - 9 TO 18V @200mA MAXIMUM
- SIZE ............................ 3.00" x 3.5" x 0.5"

AVAILABLE OPTIONS (SPECIFY)

A01 .................................. EXTENDED 0.2 TO 10 GHz RF FREQUENCY RANGE
A02 .................................. EXTENDED 0.5 TO 18 GHz RF FREQUENCY RANGE
A03 .................................. FASTER RISE/RECOVERY TIMES
A04 .................................. ALTERNATE LOG SLOPES
A05 .................................. HIGH POWER RF CW/PEAK PROTECTION
A06 .................................. EXTENDED LOGGING RANGE
A07 .................................. OTHER VIDEO LOADS
A08 .................................. -54°C TO +85°C WITH LOG TEMPERATURE STABILITY OF ±1.75dB

MECHANICAL OUTLINE

ENVIROMENTAL RATINGS

- TEMPERATURE ...................... -54°C TO +85°C (OPERATING)
- -65°C TO +100°C (STORAGE)
- HUMIDITY .......................... MIL-STD-202F, METHOD 103B COND. B
- SHOCK .............................. MIL-STD-202F, METHOD 213B COND. B
- VIBRATION .......................... MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE .......................... MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE .............. MIL-STD-202F, METHOD 1070 COND. A

AMERICAN MICROWAVE CORPORATION
7311G GROVE RD., FREDERICK, MD. 21701
TEL: (301) 662-4700 FAX: (301) 662-4938

PRODUCT FEATURE

LVD-218-70/75 (OPTION 0518)
0.5 TO 18 GHz, 70/75 db, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER
SIZE A SHEET 1 OF 2 ENG. # 352-2276
### SUMMARY TEST DATA

**ON**

**DETECTOR LOG VIDEO AMPLIFIER (DLVA)**

**CUSTOMER:** Lockheed Sanders  
**JOB NO:** 3018-2  
**MODEL NO:** LVD-218-70 (OPTION 0518)  
**SERIAL NO:** DL 308148

**TESTED BY:** B.B.  
**TEMPERATURE:** -55°C to +85°C  
**DATE:** 9/8/93

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR (0.5 - 18 GHz)</td>
<td>3.0:1 (MAX)</td>
<td>2.3:1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -70 dBm to +10 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.3 to 4.3 VOLTS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (0.5 - 18 GHz)</td>
<td>-68 dBm (MIN)</td>
<td>-68 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>48 to 51 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -70 dBm TO +10 dBm</td>
<td>±1.75 dB (MAX)</td>
<td>±1.65 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (0.5 - 18 GHz)</td>
<td>±2.0 dB (MAX)</td>
<td>±1.8 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME (MAX) -70 to +10 dBm</td>
<td>250 nSEC</td>
<td>200 nSEC</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (-55°C to +85°C)</td>
<td>±1.75 dB (MAX)</td>
<td>±1.3 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>30 nSEC (MAX)</td>
<td>30 nSEC</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V</td>
<td>400 mA (MAX)</td>
<td>340 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V</td>
<td>200 mA (MAX)</td>
<td>130 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**QA/QC APPROVAL:**

**DATED:** 9/8/93
DLVA 218-70 : S/N DL308148
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

- 0.5 GHz
- 2 GHz
- 6 GHz
- 10 GHz
- 14 GHz
- 18 GHz

TESTED BY B.B, 9/3/93, + 30 C
DLVA 218-70 : S/N DL308148
LOG LINEARITY

VIDEO OUTPUT (VOLTS)  ERROR (dB)

RF INPUT POWER (dBm)

--- VIDEO  --- ERROR

TESTED BY B.B, 9/3/93, 10GHz, +30 C
DLVA 218-70: S/N DL308148
LOG TRANSFER WITH TEMPERATURE

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

+ 30 C  - 55 C  + 85 C

TESTED BY B.B, 9/3/93, 10 GHz
TEST DATA

FOR

WIDEBAND

70/75 dB

6 - 18 GHz DC-COUPLED

DETECTOR LOG VIDEO AMPLIFIER
(DLVA)

AMC MODEL: LVD-218-70/75
(SERIAL NO: DL.20538)

BY

AMERICAN MICROWAVE CORPORATION

11 MAY 1992
# LVD-218-70/75 (6 - 18 GHz)
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<td>DATA SHEET ON LVD-218-50/70</td>
<td>1-2</td>
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<tr>
<td>2.0</td>
<td>TEST DATA ON DLVA 0°C</td>
<td>3</td>
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<tr>
<td>3.0</td>
<td>TEST DATA ON DLVA 30°C</td>
<td>4</td>
</tr>
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<td>4.0</td>
<td>TEST DATA ON DLVA 60°C</td>
<td>5</td>
</tr>
<tr>
<td>5.0</td>
<td>LOG RESPONSE WITH FREQUENCY (6-18 GHz)</td>
<td>6</td>
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<tr>
<td>6.0</td>
<td>LOG RESPONSE WITH TEMPERATURE - 6 GHz</td>
<td>7</td>
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<tr>
<td>7.0</td>
<td>LOG RESPONSE WITH TEMPERATURE - 12 GHz</td>
<td>8</td>
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<tr>
<td>8.0</td>
<td>LOG RESPONSE WITH TEMPERATURE - 18 GHz</td>
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<tr>
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<tr>
<td>10.0</td>
<td>LOG RESPONSE ERROR WITH TEMPERATURE - 12 GHz</td>
<td>11</td>
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<tr>
<td>11.0</td>
<td>LOG RESPONSE ERROR WITH TEMPERATURE - 18 GHz</td>
<td>12</td>
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<tr>
<td>12.0</td>
<td>LOG LINEARITY ERROR - 6 GHz</td>
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<tr>
<td>13.0</td>
<td>LOG LINEARITY ERROR - 10 GHz</td>
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<td>14.0</td>
<td>LOG LINEARITY ERROR - 14 GHz</td>
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<td>15.0</td>
<td>LOG LINEARITY ERROR - 18 GHz</td>
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<td>FREQUENCY RESPONSE OVER DYNAMIC RANGE</td>
<td>17</td>
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<tr>
<td>17.0</td>
<td>FREQUENCY FLATNESS - ERROR (+10 TO -70 dBm)</td>
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<tr>
<td>18.0</td>
<td>RECOVERY TIME VS. PULSE WIDTH - 6 GHz</td>
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<td>19.0</td>
<td>RECOVERY TIME VS. PULSE WIDTH - 12 GHz</td>
<td>20</td>
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<td>20.0</td>
<td>RECOVERY TIME VS. PULSE WIDTH - 18 GHz</td>
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<td>21.0</td>
<td>RECOVERY TIME - 12 GHz (DETAILED VIEW)</td>
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<td>22.0</td>
<td>RISE TIME WITH FREQUENCY</td>
<td>23</td>
</tr>
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<td>23.0</td>
<td>PULSE RESPONSE - 6 GHz</td>
<td>24</td>
</tr>
<tr>
<td>24.0</td>
<td>PULSE RESPONSE - 12 GHz</td>
<td>25</td>
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<td>25.0</td>
<td>PULSE RESPONSE - 18 GHz</td>
<td>26</td>
</tr>
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<td>26.0</td>
<td>INPUT VSWR VS. FREQUENCY @ -20 dBm</td>
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<td>27.0</td>
<td>TSS VS. VIDEO BANDWIDTH AND RF FREQUENCY</td>
<td>28</td>
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### ADDITIONAL TEST DATA

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<th>Title</th>
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<tr>
<td>28.0</td>
<td>RECOVERY TIME - 12 GHz @ +85°C</td>
<td>30</td>
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<tr>
<td>29.0</td>
<td>RISE TIME AND PULSE RESPONSE - 12 GHz @ +85°C</td>
<td>31</td>
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<tr>
<td>30.0</td>
<td>RECOVERY TIME - 12 GHz @ 0°C</td>
<td>32</td>
</tr>
<tr>
<td>31.0</td>
<td>RISE TIME AND PULSE RESPONSE - 12 GHz @ 0°C</td>
<td>33</td>
</tr>
</tbody>
</table>
DLVA
DETECTOR LOG VIDEO AMPLIFIER
2-18 GHZ, 45 DB DYNAMIC RANGE
MODEL: LVD-218-50

FEATURES
- DC Coupled
- Wide Bandwidths
- Fast Rise Times
- Short Recovery Times
- Small Size

DESCRIPTION
The LVD-218-50 Series DLVA's offer 50 dB dynamic range over the full 2-18 GHz bandwidth with DC coupling. Units employ planar diode detectors and monolithic video circuitry for high speed performance and outstanding reliability. They are available with optional external or internal controlled CW nulling.

FUNCTIONAL BLOCK DIAGRAM

7311G GROVE ROAD, FREDERICK, MARYLAND 21701. • Tel: (301) 662-4700 • Fax: (301) 662-4938
# GUARANTEED SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2-18 GHz</td>
</tr>
<tr>
<td>Flatness (-20 dBm)</td>
<td>±1.5 dB</td>
</tr>
<tr>
<td>VSWR</td>
<td>3.0:1, Max.</td>
</tr>
<tr>
<td>TSS</td>
<td>-40 dBm, Max.</td>
</tr>
<tr>
<td>Logging Range</td>
<td>-40 to +5 dBm</td>
</tr>
<tr>
<td>Log Slope (Note 1)</td>
<td>50 mV/dB, ±10%</td>
</tr>
<tr>
<td>Log Linearity (-40 to 0 dBm)</td>
<td>±1.0 dB, Max.</td>
</tr>
<tr>
<td>Output Stability (-54°C to +85°C)</td>
<td>±1.0 dB, Max.</td>
</tr>
<tr>
<td>Pulse Width Range</td>
<td>50 ns to CW</td>
</tr>
<tr>
<td>Rise Time</td>
<td>20 ns, Max.</td>
</tr>
<tr>
<td>Recovery Time (from 0 dBm)</td>
<td>150 ns, Max.</td>
</tr>
<tr>
<td>Video Load</td>
<td>100 Ohms, Min.</td>
</tr>
<tr>
<td>D.C. Power (Note 2)</td>
<td>±12 V @ 80 mA</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 oz.</td>
</tr>
</tbody>
</table>

**Notes:**
1. Other Log slopes available.
2. Other voltages from ±9 V to ±18 V available.
3. Internal or external CW nulling available.

### MECHANICAL DATA

- SWA FEMALE 2 PLACES
- Connector size: 0.21 [5.3] x 0.31 [7.9] x 0.49 [12.4] inches
- Dimensions: INCHES (MILLIMETERS)

![Mechanical Data Diagram]
DLVA
DETECTOR LOG VIDEO AMPLIFIER
2-18 GHZ, 75 DB DYNAMIC RANGE
MODEL: LVD-218-70

FEATURES
• DC Coupled
• Wide Bandwidths
• Fast Rise Times
• Short Recovery Times
• Extended Dynamic Range
• MMIC Reliability

DESCRIPTION
The LVD-218-70 Series DLVA's offer 80 dB dynamic range over the full 2-18 GHz bandwidth with DC coupling. Units employ planar diode detectors, a GaAs FET LNA and monolithic video circuitry for high speed performance and outstanding reliability. They are available with optional external or internal controlled CW nulling.

FUNCTIONAL BLOCK DIAGRAM
GUARANTEED SPECIFICATIONS

PARAMETER                     SPECIFICATIONS               TYPICAL PERFORMANCE VIDEO RESPONSE

- Frequency (note 4)           2-18 GHz                     VIDEO OUTPUT (V)
- Flatness (-20dBm)            ± 2.5 dB
- VSWR                        3.0:1, Max
- TSS                         -68 dBm, Min.
- Logging Range               -65 to +10 dBm
- Log Slope (see note 1)      50 mV/dB
- Log Linearity (-65 to +10 dBm) ± 2.0 dB, Max.
- Output Stability (0°C to +60°C) ± 2.0 dB, Max.
- Pulse Width Range           50 ns to CW
- Rise Time                   30 ns, Max.
- Recovery Time               350 ns, Max
- Video Load (note 2)         100 Ohms, Min.
- D.C. Power (note 3)         +15V@400mA
                                -15V @150mA
- Weight                      7.0 oz.

Notes:
1. Other Log slopes available.
2. Other Video Loads down to 50 Ohms available.
3. Other voltages from ±9V to ±18V available.
4. 0.2 to 20 GHz RF Bandwidth available.
5. -55°C to +85°C operating temperature.
6. Internal or external cw nulling available.

MECHANICAL DATA

Mounting holes: 0.104" dia thru 4 places

RF INPUT

3.00 [76.2]

2.816 [71.5]

3.50 [88.9]

[2.3] 0.09

0.24 [6.1]

[2.3] 0.09

2.40 [61.5]

0.50 [12.7]

SMA FEMALE 2 PLACES

Dimensions: Inches (Millimeters)
## SUMMARY TEST DATA

**ON**

**DETECTOR LOG VIDEO AMPLIFIER—DLVA**

**CUSTOMER:**

**JOB NO:** 108141

**MODEL NO:** LVD-618-70

**SERIAL NO:** DL20538

<table>
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<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (6 - 18 GHz)</td>
<td>2.5:1 (max), (-7.36 dB)</td>
<td>2.4:1</td>
<td>[Signature]</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -70 dBm to +10 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.359 - 4.9 V/OUTS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (6 - 18 GHz)</td>
<td>-72 dBm (min)</td>
<td>-74 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>51.6 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -70 dBm TO +10 dBm</td>
<td>±1.75 dB (max)</td>
<td>±1.69 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (6 - 18 GHz)</td>
<td>±1.75 dB (max)</td>
<td>±1.5 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME -70 to +10 dBm</td>
<td>250 nS (max)</td>
<td>250 nS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (0 to +60°C)</td>
<td>±1.75 dB (max)</td>
<td>±1.49 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>30 nS (max)</td>
<td>19 nS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V</td>
<td>500 mA (max)</td>
<td>460 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V</td>
<td>200 mA (max)</td>
<td>146 mA</td>
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</table>

**PRODUCTION MANAGER APPROVAL:** [Signature]  DATED: 6-2-92

**QA/QC APPROVAL:** [Signature]  DATED: 6-2-92
# SUMMARY TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER—DLVA

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<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (6 - 18 GHz)</td>
<td>2.5:1 (max) (-7.36 dB)</td>
<td>2.4:1</td>
<td>Sel</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -70 dBm to +10 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.345 V</td>
<td>4.45 V</td>
</tr>
<tr>
<td>3</td>
<td>TSS (6 - 18 GHz)</td>
<td>-72 dBm (min)</td>
<td>-73 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>51.3 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -70 dBm TO +10 dBm</td>
<td>±1.75 dB (max)</td>
<td>±1.3 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (6 - 18 GHz)</td>
<td>±1.75 dB (max)</td>
<td>±1.6 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME -70 to +10 dBm</td>
<td>250 nS (max)</td>
<td>250 nS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (0 to +60°C)</td>
<td>±1.75 dB (max)</td>
<td>±1.47 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>30 nS (max)</td>
<td>18 nS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V</td>
<td>500 mA (max)</td>
<td>465 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V</td>
<td>200 mA (max)</td>
<td>147 mA</td>
<td></td>
</tr>
</tbody>
</table>

PRODUCTION MANAGER APPROVAL: [Signature]  DATED: 6-2-92

QA/QC APPROVAL: [Signature]  DATED: 6-2-92
# SUMMARY TEST DATA

**ON**

**DETECTOR LOG VIDEO AMPLIFIER—DLVA**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20 dBm (6 - 18 GHz)</td>
<td>2.5:1 (max) (-7.36 dB)</td>
<td>24:1</td>
<td>JH</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -70 dBm to +10 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.216 - 4.92 VOLTS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (6 - 18 GHz)</td>
<td>-72 dBm (min)</td>
<td>-72 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>52.6 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -70 dBm TO +10 dBm</td>
<td>±1.75 dB (max)</td>
<td>±1.3 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (6 - 18 GHz)</td>
<td>±1.75 dB (max)</td>
<td>±1.73 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RECOVERY TIME -70 to +10 dBm</td>
<td>250 nS (max)</td>
<td>250 nS</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>OUTPUT STABILITY (0 to +60°C)</td>
<td>±1.75 dB (max)</td>
<td>±1.47 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>30 nS (max)</td>
<td>18 nS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V</td>
<td>500 mA (max)</td>
<td>470 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V</td>
<td>200 mA (max)</td>
<td>147 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**

**QA/QC APPROVAL:**

**DATED:** 6-2-92
LVD-618-70
LOG RESPONSE WITH FREQUENCY

OUTPUT (VOLTS)

INPUT POWER (dBm)

6GHz  8GHz  10GHz  12GHz
14GHz  16GHz  18GHz

S/N: DL20538
TESTED BY: B.B. 5/7/92
ROOM TEMPERATURE
LVD-618-70
LOG RESPONSE WITH TEMPERATURE - 6GHz

OUTPUT (VOLTS)

RF INPUT POWER (dBm)

0 C  30 C  60 C

S/N DL20538  5/7/92
TESTED BY: B.B.
LVD-618-70
LOG RESPONSE WITH TEMPERATURE - 12GHz

OUTPUT (VOLTS)

RF INPUT POWER (dBm)

0 C  30 C  60 C

S/N DL20538  5/7/92
TESTED BY: B.B.
LVD-618-70

LOG RESPONSE
WITH TEMPERATURE - 18GHz

OUTPUT (VOLTS)

RF INPUT POWER (dBm)

S/N DL20538 5/7/92
TESTED BY: B.B.
LVD-618-70
LOG RESPONSE ERROR
WITH TEMPERATURE - 6GHz

ERROR (dB)

RF INPUT POWER (dBm)

-1.5
-1
-0.5
0
0.5
1
1.5

0 C  30 C  60 C

S/N DL20538 5/7/92
TESTED BY: B.B.
LVD-618-70

LOG RESPONSE ERROR
WITH TEMPERATURE - 12GHz

ERROR (dB)

RF INPUT POWER (dBm)

S/N DL20538 5/7/92
TESTED BY: B.B.
LVD-618-70

LOG RESPONSE ERROR
WITH TEMPERATURE - 18GHz

ERROR (dB)

RF INPUT POWER (dBm)

0 C  30 C  60 C

S/N DL20538  5/7/92
TESTED BY: B.B.
LVD-618-70
LOG LINEARITY ERROR - 6GHz

ERROR (dB)

RF INPUT POWER (dBm)

S/N DL20538 5/7/92
TESTED BY: B.B. ROOM TEMPERATURE
LVD-618-70
LOG LINEARITY ERROR - 10GHz

S/N DL20538 5/7/92
TESTED BY: B.B. ROOM TEMPERATURE
LVD-618-70
LOG LINEARITY ERROR -14GHz

ERROR (dB)

RF INPUT POWER (dBm)

S/N DL20538 5/7/92
TESTED BY: B.B. ROOM TEMPERATURE
LVD-618-70
LOG LINEARITY ERROR -18GHz

ERROR (dB)

S/N DL20538 5/7/92
TESTED BY: B.B. ROOM TEMPERATURE
LVD-618-70
FREQUENCY RESPONSE

OUTPUT (VOLTS)

FREQUENCY (GHz)

+10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm

S/N DL20538 5/7/92
ROOM TEMPERATURE TESTED BY: B.B.
LVD-618-70
FREQUENCY FLATNESS - ERROR

ERROR (dB)

FREQUENCY (GHz)

S/N DL20538 5/7/92
ROOM TEMPERATURE TESTED BY: B.B.
RECOVERY TIME VS. PULSE WIDTH - 6 GHz

POWER LEVEL (dBm)

SQUARE WAVE with 1 µS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with 10 µS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with 100 µS pulse
0.75 v/div
100 ns/div

S/N: DL20538    ROOM TEMPERATURE
TESTED BY: B.B.    5/7/92
RECOVERY TIME VS. PULSE WIDTH - 12 GHz

POWER LEVEL (dBm)

+10
0
-10
-20
-30
-40
-50
-60
-70

SQUARE WAVE with 1 μS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with 10 μS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with 100 μS pulse
0.75 v/div
100 ns/div

S/N: DL20538  ROOM TEMPERATURE
TESTED BY: B.B.  5/7/92
RECOVERY TIME VS. PULSE WIDTH - 18 GHz

POWER LEVEL (dBm)

SQUARE WAVE with
1 μS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with
10 μS pulse
0.75 v/div
100 ns/div

SQUARE WAVE with
100 μS pulse
0.75 v/div
100 ns/div

S/N: DL20538    ROOM TEMPERATURE
TESTED BY: B.B.    5/7/92
RECOVERY TIME - 12 GHz (DETAILED VIEW)

S/N: DL20538  SQUARE WAVE WITH 10 µS PULSE  ROOM TEMPERATURE
TESTED BY: B.B.  5/7/92
RISE TIME VS. FREQUENCY

POWER LEVEL (dBm)

+10 6 GHz
 0 12 GHz
-10 0.75 v/div
-20 0.75 v/div
-30 20 ns/div
-40 20 ns/div
-50
-60
-70

S/N: DL20538  ROOM TEMPERATURE
TESTED BY: B.B.  5/7/92
PULSE RESPONSE - 6 GHz

POWER LEVEL (dBm)

50 ns/div
0.75 v/div

200 ns/div
0.75 v/div

2 μs/div
0.75 v/div

20 μs/div
0.75 v/div

S/N: DL20538
ROOM TEMPERATURE
TESTED BY: B.B.
5.7.92
PULSE RESPONSE - 18 GHz

POWER LEVEL (dBm)

20 ns/div
0.75 v/div

200 ns/div
0.75 v/div

2 μs/div
0.75 v/div

20 μs/div
0.75 v/div

S/N: DL20538  ROOM TEMPERATURE
TESTED BY: B.B.  5/7/92
LVD-618-70

INPUT VSWR @ -20dBm

S/N DL20538 5/7/92
TESTED BY B.B. ROOM TEMPERATURE
# TSS VS. VIDEO

## BANDWIDTH AND RF FREQUENCY

<table>
<thead>
<tr>
<th>VIDEO BANDWIDTH</th>
<th>6 GHz</th>
<th>10 GHz</th>
<th>18 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MHz</td>
<td>-80 dBm</td>
<td>-79 dBm</td>
<td>-79 dBm</td>
</tr>
<tr>
<td>10 MHz</td>
<td>-75 dBm</td>
<td>-74 dBm</td>
<td>-74 dBm</td>
</tr>
<tr>
<td>20 MHz</td>
<td>-74 dBm</td>
<td>-73 dBm</td>
<td>-73 dBm</td>
</tr>
<tr>
<td>OPEN BANDWIDTH</td>
<td>-73 dBm</td>
<td>-72 dBm</td>
<td>-72 dBm</td>
</tr>
</tbody>
</table>

---

*S/N: DL20538  
ROOM TEMPERATURE  
TESTED BY: B.B.  
5/7/92*
ADDITIONAL TEST DATA
RECOVERY TIME - 12 GHz

S/N: DL20538  +85°C   SQUARE WAVE WITH 10 µS PULSE  
TESTED BY: B.B.  5/7/92
RISE TIME AND PULSE RESPONSE - 12 GHz

POWER LEVEL (dBm)

20 ns/div
0.75 v/div

2 μs/div
0.75 v/div

S/N: DL20538   +85°C   SQUARE WAVE WITH 10 μS PULSE
TESTED BY: B.B. 5/7/92
S/N: DL20538  0°C  SQUARE WAVE WITH 10 µS PULSE
TESTED BY: B.B.  5/7/92
TEST DATA
FOR
WIDE BAND
65/70 dB
0.2 - 20 GHz DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER
(DLVA)

AMC MODEL: LVD-218-70/75 AND LVD-0220-65/70
(SERIAL NO: DL211103)

BY

AMERICAN MICROWAVE CORPORATION

29 JANUARY 1993
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9.0 LOG LINEARITY - 2 GHz .................................................... 10

10.0 LOG LINEARITY - 8 GHz .................................................. 11

11.0 LOG LINEARITY - 10 GHz ................................................ 12

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## SUMMARY TEST DATA

ON

DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** SYSTEMS RESEARCH LABORATORY  
**TESTED BY:** B. Baker  
**JOB NO.:** 207199  
**MODEL NO.:** LVD-218-70  
**DATE:** 1/27/93  
**TEMPERATURE:** Room

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR (0.2 - 20 GHz)</td>
<td>2.5:1 (max) (-7.36 dB)</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -65 dBm to +10 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.15 TO 3.75 VOLTS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS (0.2 - 20 GHz)</td>
<td>-62 dBm (min)</td>
<td>-62 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>45.0 TO 50.0 mV/dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -65 dBm TO +10 dBm</td>
<td>±2.0 dB (max)</td>
<td>-1.9 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS @ -25 dBm (2 - 20 GHz)</td>
<td>±1.75 dB (max)</td>
<td>±0.8 dB</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>FREQUENCY FLATNESS @ -25 dBm (0.2 - 2 GHz)</td>
<td>±2.5 dB (max)</td>
<td>±0.6dB</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>RECOVERY TIME -65 TO +10 dBm</td>
<td>300 nS (max)</td>
<td>300 nS</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME (10% TO 90% POINTS)</td>
<td>30 nS (max)</td>
<td>19 nS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>D.C. POWER @ +15 V (NO LOAD VIDEO)</td>
<td>350 mA (max)</td>
<td>340 mA</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>D.C. POWER @ -15 V (NO LOAD VIDEO)</td>
<td>200 mA (max)</td>
<td>137 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 2/1/93  
**QA/QC APPROVAL:**  
**DATED:** 2/1/93
0.2 - 20 GHz DLVA
FREQUENCY FLATNESS @ -55 dBm

ERROR (dB)

FREQUENCY (GHz)

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
FREQUENCY FLATNESS @ -25 dBm

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
FREQUENCY FLATNESS @ +10 dBm

ERROR (dB)

FREQUENCY (GHz)

S/N DL21103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 500MHz

VIDEO OUT (VOLTS) vs. LOG ERROR (dB)

RF INPUT POWER (dBm)

S/N DL211103, 1/27/93
TESTED BY: B.B., ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 1GHz

VIDEO OUT (VOLTS)  LOG ERROR (dB)

RF INPUT POWER (dBm)

1 GHz  ERROR

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 2GHz

VIDEO OUT (VOLTS)

LOG ERROR (dB)

RF INPUT POWER (dBm)

2 GHz  

ERROR

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 8GHz

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 10GHz

VIDEO OUT (VOLTS) vs LOG ERROR (dB)

RF INPUT POWER (dBm)

- S/N DL211103, 1/27/93
- TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 18GHz

VIDEO OUT (VOLTS) vs. RF INPUT POWER (dBm)

S/N DL211103, 1/27/93
TESTED BY: B.B., ROOM TEMP.
0.2 - 20 GHz DLVA
LOG LINEARITY - 20GHz

VIDEO OUT (VOLTS) vs RF INPUT POWER (dBm)

LOG ERROR (dB)

20 GHz vs ERROR

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
0.2 - 20 GHz DLVA
INPUT RETURN LOSS

S/N DL211103, 1/27/93
TESTED BY: B.B, ROOM TEMP.
RISE AND RECOVERY TIMES

POWER LEVEL (dBm)

100 nS/div
0.63 V/div

S/N: DL211103
TESTED BY: B.B. 1/30/93
TEST DATA
ON
2.0 TO 18.0 GHz
TRULY DC-COUPLED
70 dB MINIMUM DYNAMIC RANGE
FAST RISE AND RECOVERY TIMES
WITH
INTERNAL CW/NOISE
IMMUNITY/CANCELLATION CIRCUITRY

AMC MODEL No:
LVD-218-70 with OPTION "NI"

SERIAL NUMBERS: DL61297, DL61298, DL61299, DL612100, DL612101,
DL50430, DL30443, DL30447, DL30449, DL30450, DL30451, DL30452,
DL30453, DL30454, DL30455, DL30456, DL30457, DL30458.

DESIGNED
BY
A. K. GORWARA

TESTED
BY
B. BAKER

REPORTED
BY
P. D. WOOD

MARCH 7, 1997
2.0 TO 18.0 GHz, 70/75dB, TRULY DC-COUPLED DETECTOR LOG VIDEO AMPLIFIER (DLVA) WITH INTERNAL CW IMMUNE CIRCUITY

- TRULY DC-COUPLED
- WIDE BANDWIDTHS
- FAST RISE TIMES
- SUPERIOR ACCURACY
- EXTENDED DYNAMIC RANGE
- SHORT RECOVERY TIMES

SPECIFICATIONS:

- FREQUENCY RANGE
- FREQUENCY FLATNESS
- TSS
- VSWR
- DYNAMIC RANGE
- LOGGING RANGE
- LOG LINEARITY
- LOG SLOPE
- LOG SLOPE ACCURACY
- LOG LINEARITY @ 10 GHz
- LOG LINEARITY OVER FREQUENCY
- LOG TEMPERATURE STABILITY
- RISE TIME (10% TO 90% POINTS)
- RECOVERY TIME
- VIDEO LOAD
- DC POWER (NO LOAD)
- CW IMMUNITY (OPTIONAL)
- SIZE

AVAILABLE OPTIONS:

- A01
- A02
- A03
- A04
- A05
- A06
- A07
- A08
- A09

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
MECHANICAL OUTLINE:

RF INPUT

VIDEO OUTPUT

SMA FEMALE

2 PLACES

3.00

2.816

3.304

0.09

0.09

0.50

0.24

MOUNTING HOLES
0.104 DIA THRU
4 PLACES

DIMENSIONS ARE IN INCHES. TOLERANCES: X.XX = 0.020", X.XXX = 0.010"

LVD-218-70/75 (OPTION "NT")
FUNCTIONAL BLOCK DIAGRAM:

ENVIRONMENTAL RATINGS:

ENVIRONMENTAL RATINGS

TEMPERATURE .......... -54°C TO +85°C (OPERATING)
-65°C TO +100°C (STORAGE)

HUMIDITY ............. MIL-STD-202F, METHOD 1038 COND. B
SHOCK ................ MIL-STD-202F, METHOD 213B COND. B
VIBRATION ............. MIL-STD-202F, METHOD 2048 COND. B
ALTITUDE .............. MIL-STD-202F, METHOD 105C COND. B
TEMPERATURE CYCLE .......... MIL-STD-202F, METHOD 107D COND. A

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL61297

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARK QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREQUENCY</td>
<td>2 GHz to 12 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (min.)</td>
<td>±1.5 dB</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-68 dB (min.)</td>
<td>-70 dB</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>DYNAMIC RANGE</td>
<td>70 dB (min.)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOGGING RANGE</td>
<td>-65 to +5 dBm</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.0 dB (max.)</td>
<td>+1.0 dB</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG SLOPE ACCURACY</td>
<td>±5% (max.), SLOPE OF BEST FIT STRAIGHT LINE</td>
<td>68.5 to 72 mV/db</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>LOG TEMPERATURE STABILITY</td>
<td>±1.75 dB (max.)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>RISE TIME (10% TO 90%)</td>
<td>40 nSEC (max.)</td>
<td>160 nSEC</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CW IMMUNITY</td>
<td>CANCELLATION TO</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>D.C. POWER @ +15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>320 mA</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>D.C. POWER @ -15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>139 mA</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER—DLVA**

**CUSTOMER:** KAMAN SCIENCES

**JOB NO.:** 608161-4  **TESTED BY:** 0.6  **DATE:** 3/3/97

---

**production manager approval:** [Signature]  **Dated:** 3/3/97

**QA/QC approval:** [Signature]  **Dated:** 3/3/97

---

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL61297

LVD-218-70: S\N DL61297
LOG TRANSFER WITH FREQUENCY

![Graph showing video output (volts) vs. RF input power (dBm) with annotations for 2 GHz, 7 GHz, and 12 GHz, at 25°C on 2/25/97.]

AMERICAN MICROWAVE CORPORATION

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# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL61298

**FORM:** KA-101 608161-4

---

**SUMMARY TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER—DLVA**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREQUENCY</td>
<td>2 GHz TO 12 GHz</td>
<td>PASS</td>
<td>V</td>
</tr>
<tr>
<td>2</td>
<td>FREQUENCY FLATNESS</td>
<td>±1.5 dB (min.)</td>
<td>±2.6 dB</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-60 dB (min.)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (max.)</td>
<td>1.7:1</td>
<td>V</td>
</tr>
<tr>
<td>5</td>
<td>DYNAMIC RANGE</td>
<td>70 dB (min.)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOGGING RANGE</td>
<td>-62 TO +5 dBm</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±3.0 dB (max.)</td>
<td>-0.9 dB</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG SLOPE ACCURACY</td>
<td>70 MV/dB (nom.)</td>
<td>±5% (max.), SLOPE OF BEST FIT STRAIGHT LINE</td>
<td>66.8 ± 0.8, 68.7 ± 0.4 dB</td>
</tr>
<tr>
<td>9</td>
<td>LOG TEMPERATURE STABILITY</td>
<td>0°C TO +60°C</td>
<td>±1.75 dB (max.)</td>
<td>PASS</td>
</tr>
<tr>
<td>10</td>
<td>RISE TIME (10% TO 90%)</td>
<td>40 nSEC (max.)</td>
<td>25 nSEC</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CW IMMUNITY</td>
<td>CANCELLATION TO -46 dBm (min.)</td>
<td>PASS</td>
<td>V</td>
</tr>
<tr>
<td>12</td>
<td>D.C. POWER @ +15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>350 mA</td>
<td>V</td>
</tr>
<tr>
<td>13</td>
<td>D.C. POWER @ -15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>138 mA</td>
<td>V</td>
</tr>
</tbody>
</table>

**TESTED BY:** B.B.  
**DATE:** 2/27/97

**PRODUCTION MANAGER APPROVAL:** DATED: 3/3/97  
**QA/QC APPROVAL:** DATED: 3/3/97

---

**AMERICAN MICROWAVE CORPORATION**  
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL61298

LVD-218-70: S/N DL61298
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

- 2 GHz + 7 GHz * 12 GHz

+ 25 C, 2/27/97

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
# Actual Measured Test Data

**Serial Number:** DL61299

---

## Summary Test Data

**On:** Detector Log Video Amplifier—DLVA

<table>
<thead>
<tr>
<th>Test Item No.</th>
<th>Parameters</th>
<th>Specified Value</th>
<th>Measured Value</th>
<th>Remark QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency</td>
<td>2 GHz to 12 GHz</td>
<td>0.45</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Frequency Flatness</td>
<td>±2.5 dB (min.)</td>
<td>±1.3 dB</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-68 dB (min.)</td>
<td>-70 dB</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.1:1</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>Dynamic Range</td>
<td>70 dB (min.)</td>
<td>Pass</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>Logging Range</td>
<td>-65 to +5 dBm</td>
<td>Pass</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>Log Linearity</td>
<td>±2.0 dB (max.)</td>
<td>+1.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>Log Slope Accuracy</td>
<td>±5% (max.), slope of best fit straight line</td>
<td>66.5 mV/°C</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>Log Temperature Stability</td>
<td>±1.75 dB (max.)</td>
<td>Pass</td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>Rise Time (10% to 90%)</td>
<td>40 nsec (max.)</td>
<td>20 nsec</td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>CW Immunity</td>
<td>Cancellation to -46 dBm (min.)</td>
<td>Pass</td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>D.C. Power @ +15V</td>
<td>500 mA (max.) no load</td>
<td>330 mA</td>
<td>✓</td>
</tr>
<tr>
<td>13</td>
<td>D.C. Power @ -15V</td>
<td>500 mA (max.) no load</td>
<td>140 mA</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Production Manager Approval:** [Signature] Dated: 2/2/97

**QA/QC Approval:** [Signature] Dated: 3/3/97

---

**American Microwave Corporation**

7311-G Grove Road, Frederick, Maryland 21704 • Tel. (301) 662-4790 • Fax (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL61299

LVD-218-70: S\N DL61299
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

→ 2 GHz  +7 GHz  ∗ 12 GHz

+25 C, 2/24/97
## ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL612100

### SUMMARY TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER—DLVA

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARK QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREQUENCY</td>
<td>2 GHz TO 12 GHz</td>
<td>PASS</td>
<td>J</td>
</tr>
<tr>
<td>2</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (min.)</td>
<td>±1.5 dB</td>
<td>J</td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-68 dB (min.)</td>
<td>-70.2 dBm</td>
<td>J</td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (max.)</td>
<td>1.9:1</td>
<td>J</td>
</tr>
<tr>
<td>5</td>
<td>DYNAMIC RANGE</td>
<td>70 dB (min.)</td>
<td>PASS</td>
<td>J</td>
</tr>
<tr>
<td>6</td>
<td>LOGGING RANGE</td>
<td>-65 TO +5 dBm</td>
<td>PASS</td>
<td>J</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.0 dB (max.)</td>
<td>-1.3 dB</td>
<td>J</td>
</tr>
<tr>
<td>8</td>
<td>LOG SLOPE ACCURACY</td>
<td>70 MV/DB (nom.)</td>
<td>±5% (max.), SLOPE OF BEST FIT STRAIGHT LINE</td>
<td>71.570, 75.5 MV/DB</td>
</tr>
<tr>
<td>9</td>
<td>LOG TEMPERATURE STABILITY</td>
<td>8°C TO +50°C</td>
<td>±1.75 dB (max.)</td>
<td>PASS</td>
</tr>
<tr>
<td>10</td>
<td>RISE TIME (10% TO 90%)</td>
<td>40 nSEC (max.)</td>
<td>PASS</td>
<td>J</td>
</tr>
<tr>
<td>11</td>
<td>CW IMMUNITY</td>
<td>CANCELLATION TO -46 dBm (min.)</td>
<td>PASS</td>
<td>J</td>
</tr>
<tr>
<td>12</td>
<td>D.C. POWER @ +15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>370 mA</td>
<td>J</td>
</tr>
<tr>
<td>13</td>
<td>D.C. POWER @ -15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>197 mA</td>
<td>J</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** [Signature]  DATED: 3/3/57

**QA/QC APPROVAL:** [Signature]  DATED: 3/3/97

---

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-1700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL612100

LVD-218-70: S\N DL612100
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

$\rightarrow$ 2 GHz $\rightarrow$ 7 GHz $\times$ 12 GHz

+ 25°C, 2/24/97
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL612101

---

**SUMMARY TEST DATA ON**

**DETECTOR LOG VIDEO AMPLIFIER—DLVA**

**CUSTOMER:** KAMAN SCIENCES  
**JOB NO:** 608161-4  
**MODEL NO:** LVD-218-70 OPTION NI  
**SERIAL NO:** DL612101  
**TESTED BY:**  
**DATE:** 2/22/97

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARK QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREQUENCY</td>
<td>2 GHz TO 12 GHz</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (min.)</td>
<td>±1.5 dB</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-68 dB (min.)</td>
<td>-70 dB</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.1:1</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>DYNAMIC RANGE</td>
<td>70 dB (min.)</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>LOGGING RANGE</td>
<td>-55 TO +5 dBm</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.0 dB (max.)</td>
<td>-1.05 dB</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>LOG SLOPE ACCURACY</td>
<td>±5% (max.), SLOPE OF BEST FIT STRAIGHT LINE</td>
<td>70 TO 72 mV/DB</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>LOG TEMPERATURE STABILITY (6°C TO +64°C)</td>
<td>±1.75 dB (max.)</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>RISE TIME (10% TO 90%)</td>
<td>40 nSEC (max.)</td>
<td>20 nSEC</td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>CW IMMUNITY</td>
<td>CANCELLATION TO -46 dBm (min.)</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>D.C. POWER @ +15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>330 mA</td>
<td>✓</td>
</tr>
<tr>
<td>13</td>
<td>D.C. POWER @ -15V</td>
<td>500 mA (max.) NO LOAD</td>
<td>137 mA</td>
<td>✓</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 3/3/97  
**QA/QC APPROVAL:**  
**DATED:** 3/3/97

---

**AMERICAN MICROWAVE CORPORATION**  
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
SERIAL NUMBER: DL612101

LVD-218-70: S\N DL612101
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

-70 -60 -50 -40 -30 -20 -10 0 10

RF INPUT POWER (dBm)

2 GHz + 7 GHz * 12 GHz

+ 25 C, 2/27/97
**ACTUAL MEASURED TEST DATA**

**SERIAL NUMBER:** DL50430

**FORM:** DLVA-66/595

**JOB NO:** 50248

**SUMMARY TEST DATA**

**ON**

**DETECTOR LOG VIDEO AMPLIFIER-DLVA**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FREQUENCY</td>
<td>2 - 18 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (MAX)</td>
<td>±1.9 dB</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TSS</td>
<td>-68 dB (MIN)</td>
<td>-68 dB</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>VSWR</td>
<td>2.5:1 (MAX)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>DYNAMIC RANGE</td>
<td>68 dB (MIN)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOGGING RANGE</td>
<td>-65 dBm TO 6 Dbm</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.0 dB (MAX)</td>
<td>-1.9 dB</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG SLOPE</td>
<td>70 ±5mV/dB</td>
<td>69.49 mV/dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>LOG SLOPE ACCURACY</td>
<td>±5% (MAX), SLOPE OF BEST FIT STRAIGHT LINE</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>LOG TEMPERATURE STABILITY (0°C TO +60°C)</td>
<td>±1.75 dB (MAX)</td>
<td>±1.25 dB</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>RISE TIME (10% TO 90%)</td>
<td>40 nSEC. (MAX)</td>
<td>12 nSEC</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>RECOVERY TIME</td>
<td>350 nSEC. (MAX)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>VIDEO LOAD</td>
<td></td>
<td>93.2 mV (MIN)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>CW IMMUNITY</td>
<td>CANCELLATION TO -46 dBm (MIN)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>D.C. POWER @ +15 V</td>
<td>500 mA (MAX) NO LOAD</td>
<td>330 mA</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>D.C. POWER @ -15 V</td>
<td>500 mA (MAX) NO LOAD</td>
<td>143 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**

**QA/QC APPROVAL:**

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL50430

LVD-218-70: S\N DL50430
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

- 2 GHz  - 6 GHz  * 10 GHz  - 14 GHz  * 18 GHz

* 25 C, 7/30/95

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FRÉDÉRICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
LVD-218-70: S/N DL50430
LOG TRANSFER WITH TEMPERATURE

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

+25°C  0°C  +80°C

10 GHz, 7/30/95
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30443

**FORM:** DLVA-16/0393

**JOB NO:** 206151 - R1

**SUMMARY TEST DATA**

**ON**

DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** CTC/CSINT

**TESTED BY:** B.B.

**DATE:** 10/20/93

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30443

| TEST ITEM NO. | PARAMETERS                        | SPECIFIED VALUE | MEASURED VALUE | QA/QC APP
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.2:1</td>
<td></td>
</tr>
</tbody>
</table>
| 3             | TANGENTIAL SIGNAL SENSITIVITY (TSS) | -66 dBm (min.) @ +85°C  
                |                   | -68 dBm (min.) @ -28°C  | -68 dBm  
                |                   | -70 dBm          |             |
| 4             | DYNAMIC RANGE                     | 66 dB (min.) @ +85°C  
                |                   | 68 dB (min.) @ -28°C  | PASS        |
| 5             | FREQUENCY FLATNESS                | ±2.5 dB (max)  
                |                   | ±2.0 dB Design Goal | ±1.5 dB    |
| 6             | LOG SLOPE                         | 70 ±5 mV/DB     | C9 ±0.1dB      |             |
| 7             | LOG LINEARITY (Worst Case Accuracy) | ±2.5 dB (max)  
                |                   | ±0.3 dB Design Goal | ±2.0 dB  
                |                   | (Plot Attached)  |             |
| 8             | LOG LINEARITY @ 10 GHz            | ±1.5 dB (max)  
                |                   | ±1.0 dB Design Goal | ±1.0 dB  
                |                   | (Plot Attached)  |             |
| 9             | RISE TIME                         | 35 usec typical  
                |                   | 40 usec (max.)     | 30.5 usec  |
| 10            | CW IMMUNITY                       | -46 dBm         | PASS           |             |
| 11            | DC POWER @ +15V (No Load)         | 600 mA (max.)   | 390 mA         |             |
| 12            | DC POWER @ -15V (No Load)         | 250 mA (max.)   | 135 mA         |             |

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL.: (301) 662-4700 • FAX: (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30443

S/N DL30443
LOG LINEARITY - 10 GHz

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30443

S/N DL30443
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

- 10 GHz
- 2 GHz
- 18 GHz

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30447

**FORM:** DLVA-16/0393

**JOB NO:** 206151 - P1

**SUMMARY TEST DATA**

**ON**

DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** CTC/CSIST

**JOB NO:** 206151 - P1

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30447

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td><strong>PASS</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td><strong>2.0:1</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (ISS)</td>
<td>-66 dBm (min.) @ 85°C</td>
<td><strong>-69 dBm</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-63 dBm (min.) @ -23°C</td>
<td><strong>-71 dBm</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE</td>
<td>(-66 dBm to 0 dBm at +85°C)</td>
<td><strong>66 dB (min.) @ +85°C</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-63 dBm to 0 dBm at -23°C)</td>
<td><strong>58 dB (min.) @ -23°C</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max.) (±2.0 dB Design Goal)</td>
<td>±1.5 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ± 5 mV/µdB</td>
<td><strong>69 mV/µdB</strong></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY (Worst Case Accuracy)</td>
<td>±2.5 dB (max.) (±2.0 dB Design Goal) (Plot Attached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>±2.0 dB</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 nsec typical</td>
<td>30 nsec (max.)</td>
<td><strong>30 SEC</strong></td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td><strong>PASS</strong></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td><strong>3.25 mA</strong></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td><strong>130 mA</strong></td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** [Signature] DATED: 10/21/93

**QA/QC APPROVAL:** [Signature] DATED: 10/21/93

---

**AMERICAN MICROWAVE CORPORATION**

7211-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
SERIAL NUMBER: DL30447

S/N DL30447
LOG LINEARITY - 10 GHz

VIDEO OUTPUT (VOLTS) vs RF INPUT POWER (dBm)

ERROR (dB)

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30447

S\N DL30447
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

10 GHz  2 GHz  18 GHz

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30449

FORM: DLVA-16/0393

SUMMARY TEST DATA
ON DETECTOR LOG VIDEO AMPLIFIER—DLVA

CUSTOMER: CTC/CST

JOB NO: 206151

MODEL NO: LVD-218-70

SERIAL NO: DL30449

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.1:1</td>
<td></td>
</tr>
</tbody>
</table>
| 3             | TANGENTIAL SIGNAL SENSITIVITY (ISS) | -66 dBm (min.) @ +85°C  
(-66 dBm (min.) @ -28°C) | PASS           |         |
| 4             | DYNAMIC RANGE  | 66 dB (min.) @ +85°C  
(68 dB (min.) @ -28°C) | PASS           |         |
| 5             | FREQUENCY FLATNESS | ±2.5 dB (max.)  
(±2.0 dB Design Goal) | ±2.5dB         |         |
| 6             | LOG SLOPE      | 70 ±5 mV/Db     | PASS           |         |
| 7             | LOG LINEARITY  | ±2.5 dB (max.)  
(±2.0 dB Design Goal)  
(Tilt Attached) | -0.8dB         |         |
| 8             | LOG LINEARITY @ 10 GHz | ±1.5 dB (max.)  
(±1.0 dB Design Goal)  
(Tilt Attached) | +0.6dB         |         |
| 9             | RISE TIME      | 35 nsec typical  
40 nsec (max.)    | PASS           |         |
| 10            | CW IMMUNITY    | -66 dBm         | PASS           |         |
| 11            | DC POWER @ +15V (No Load) | 600 mA (max.)  | 310mA         |         |
| 12            | DC POWER @ -15V (No Load) | 250 mA (max.)  | 140mA         |         |

PRODUCTION MANAGER APPROVAL: SR

QA/QC APPROVAL: PW

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30449

S\N DL30449
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30449

S/N DL30449
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
TEST DATA
LVD-218-70 (Option "NI")
PAGE 27

ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30449

S\N DL30449
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
### ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30450

**FORM:** DLVA-16/0393

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30450

**CUSTOMER:** CTC/CSISt

**JOB NO:** 206151

**TESTED BY:** B. B

**DATE:** 4/29/93

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 Gfs</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>1.5:1 (max.)</td>
<td>2.11:0</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (ISS)</td>
<td>-66 dbm (min.) @ +85°C</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-66 dbm (min.) @ -35°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE</td>
<td>(-68 dbm to 0 dbm at +85°C)</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-68 dbm to 0 dbm at -35°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max.)</td>
<td>±2.5 dB</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±2.5 dB Design Goal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ±5 mV/Db</td>
<td>68 mV/Db</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY (Worst Case Accuracy)</td>
<td>±2.5 dB (max.)</td>
<td>±1.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±2.5 dB Design Goal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Plot Attached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>-1.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±1.5 dB Design Goal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Plot Attached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 nsec typical</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 nsec (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>+6 dBm</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td>320 mA</td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td>130 mA</td>
<td>✓</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** SRR

**DATED:** 4/20/93

**QA/QC APPROVAL:** PJ

**DATED:** 4/30/93

---

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
Serial Number: DL30450

S/N DL30450
Log Transfer & Error - 2 GHz

Video Output (Volts) & Log Error (dB)

RF Input Power (dBm)

Tested by: B.B., 4/29/93
CW Immune Disabled
SERIAL NUMBER: DL30450

S\N DL30450
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED

AMERICAN MICROWAVE CORPORATION
- 7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30450

S\N DL30450
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30451

**FORM:** DLVA-16/0393

**MODEL NO:** LVD-218-70

## SUMMARY TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** CTC/CSIST

**JOB NO:** 206151 - 21

**TESTED BY:** B.B.

**DATE:** 9/20/93

**COMMENT:**

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.4:1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (TSS)</td>
<td>-66 dBm (min.) @ +55°C</td>
<td>-68 dBm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-65 dBm (min.) @ -25°C</td>
<td>-70 dBm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE</td>
<td>66 dB (min.) @ +55°C</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>68 dB (min.) @ -25°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max.)</td>
<td>±2.25 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>±2.0 dB Design Goal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ± 5 mV/dB</td>
<td>69.4 mV/db</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.5 dB (max.)</td>
<td>±2.0 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Worst Case Accuracy)</td>
<td>(±2.0 dB Design Goal)</td>
<td>(Plot Attached)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>±0.6 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±1.0 dB Design Goal)</td>
<td>(Plot Attached)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 msc typical</td>
<td>30.5 sec</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 msc (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td>340 mA</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td>135 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** [Signature]  
**DATED:** 10/21/93

**QA/QC APPROVAL:** [Signature]  
**DATED:** 10/21/93

---

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704  
TEL. (301) 662-4700  
FAX (301) 662-4938
SERIAL NUMBER: DL30451

S\N DL30451
LOG LINEARITY - 10 GHz

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30451

S\N DL30451
LOG TRANSFER WITH FREQUENCY

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

10 GHz
2 GHz
18 GHz

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
## ACTUAL MEASURED TEST DATA

### SERIAL NUMBER: DL30452

### SUMMARY TEST DATA
ON
DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** CTC/CSIT
**JOB NO:** 206151
**MODEL NO:** LVD-218-70
**SERIAL NO:** DL30452

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL</td>
<td>-66 dB (min.) @ +35°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SENSITIVITY (TSS)</td>
<td>-64 dB (min.) @ -20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE (dBm)</td>
<td>66 dB (min.) @ +35°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-60 dBm to 0 dBm at +35°C)</td>
<td>68 dB (min.) @ -20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max.)</td>
<td>±2.5 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±2.0 dB Design Goal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ±5 mV/dB</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY (Worst Case)</td>
<td>±2.5 dB (max.)</td>
<td>-1.6 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Worst Case Accuracy)</td>
<td>(±2.0 dB Design Goal) (Plot Attached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>-1.5 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(±1.0 dB Design Goal) (Plot Attached)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 nsec typical</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td>PASS</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td>420 mA</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td>141 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**
**QA/QC APPROVAL:**

**AMERICAN MICROWAVE CORPORATION**
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30452

S\N DL30452
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30452

S/N DL30452
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED

AMERICAN MICROWAVE CORPORATION
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30452

S\N DL30452
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
# Actual Measured Test Data

## Serial Number: DL30453

**Form:** DLVA-16/0393  
**Job No.:** 206151

### Summary Test Data

**On**  
**Detector Log Video Amplifier—DLVA**

**Customer:** CTC/CSIST  
**Job No.:** 206151  
**Tested by:** 8. B.  
**Date:** 4/29/93

**Model No.:** LVD-218-70  
**Serial No.:** DL30453

<table>
<thead>
<tr>
<th>Test Item No.</th>
<th>Parameters</th>
<th>Specified Value</th>
<th>Measured Value</th>
<th>Remarks QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input Frequency</td>
<td>2 to 18 GHz</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Input VSWR</td>
<td>2.4:1 (max.)</td>
<td>2.4:1</td>
<td></td>
</tr>
</tbody>
</table>
| 3             | Tangential Signal Sensitivity (TSS) | -66 dBm (min.) @ +85°C  
-63 dBm (min.) @ -28°C | Pass |                 |
| 4             | Dynamic Range | -66 dBm to 0 dBm at +85°C  
-63 dBm to 0 dBm at -28°C | Pass |                 |
| 5             | Frequency Flatness | ±2.5 dB (max.)  
(±2.0 dB Design Goal) | ±2.5 dB |                 |
| 6             | Log Slope     | 70 ±5 mV/DB     | Pass           |                 |
| 7             | Log Linearity (Worst Case Accuracy) | ±2.5 dB (max.)  
(±2.0 dB Design Goal)  
(Plot Attached) | -1.3 dB |                 |
| 8             | Log Linearity @ 10 GHz | ±1.5 dB (max.)  
(±1.0 dB Design Goal)  
(Plot Attached) | -1.3 dB |                 |
| 9             | Rise Time     | 35 sec typical  
45 sec (max.) | Pass           |                 |
| 10            | CW Immunity   | -46 dBm         | Pass           |                 |
| 11            | DC Power @ +15V (No Load) | 600 mA (max.) | 320 mA |                 |
| 12            | DC Power @ -15V (No Load) | 250 mA (max.) | 145 mA |                 |

**Production Manager Approval:**  
**Dated:** 4/26/93

**QA/QC Approval:**  
**Dated:** 4/26/93

---

**American Microwave Corporation**  
7311-G Grove Road, Frederick, Maryland 21704  
Tel.: (301) 662-4700  
Fax: (301) 662-4938
SERIAL NUMBER: DL30453

S\N DL30453
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
SERIAL NUMBER: DL30453

S\N DL30453
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30453

S\N DL30453
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
# ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30454

**FORM:** DLVA-16/0393

**JOE NO:** 206151

## SUMMARY TEST DATA

ON

DETECTOR LOG VIDEO AMPLIFIER—DLVA

**CUSTOMER:** CTC/CSIST

**JOB NO:** 206151

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30 454

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td><strong>PASS</strong></td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td><strong>2.2:1</strong></td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (TSS)</td>
<td>-66 dBm (min.) @ +35°C</td>
<td><strong>PASS</strong></td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE</td>
<td>(-66 dBm to 0 dBm at +35°C) (-66 dBm to 0 dBm at -28°C)</td>
<td>66 dB (min.) @ +35°C</td>
<td><strong>PASS</strong></td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max) (±2.0 dB Design Goal)</td>
<td>±2.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ±5 mV/DB</td>
<td><strong>PASS</strong></td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY</td>
<td>±2.5 dB (max.) (±2.0 dB Design Goal) (Plot Attached)</td>
<td>+1.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.) (±1.0 dB Design Goal) (Plot Attached)</td>
<td>+0.5 dB</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 nsec typical 40 nsec (max.)</td>
<td><strong>PASS</strong></td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td><strong>PASS</strong></td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td><strong>330 mA</strong></td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td><strong>144 mA</strong></td>
<td>✓</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** S SE

**DATED:** 4/20/93

**QA/QC APPROVAL:**

**DATED:** 4/30/93

---

**AMERICAN MICROWAVE CORPORATION**

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SERIAL NUMBER: DL30454

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30454

S/N DL30454
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30454

S\N DL30454
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
### ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30455

**FORM:** DLVA-16/0393

**JOB NO:** 206151

**CUSTOMER:** CTC/CSIST

**JOB NO:** 206151

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30455

### SUMMARY TEST DATA

**ON DETECTOR LOG VIDEO AMPLIFIER—DLVA**

**TESTED BY:** Q.B.

**DATE:** 4/29/93

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.0:1</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (TSS)</td>
<td>-66 dBm (min.) @ +85°C</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE</td>
<td>-68 dBm (min.) @ -28°C</td>
<td>65 dB (min.) @ +85°C (max.)</td>
<td>PASS</td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max.)</td>
<td>±2.0 dB</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ±5 mV/dB</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY (Worst Case Accuracy)</td>
<td>±1.5 dB (max.)</td>
<td>1.2 dB</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>0.6 dB</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 nsec typical</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td>PASS</td>
<td>✓</td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td>320 mA</td>
<td>✓</td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td>145 mA</td>
<td>✓</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** SP

**DATED:** 4/20/93

**QA/QC APPROVAL:** PW

**DATED:** 4/30/93

---

**AMERICAN MICROWAVE CORPORATION**

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ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30455

S/N DL30455
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
SERIAL NUMBER: DL30455

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
SERIAL NUMBER: DL30455

S/N DL30455
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
## ACTUAL MEASURED TEST DATA

**SERIAL NUMBER:** DL30456

**MODEL NO:** LVD-218-70

**TEST DATA**

**LVD-218-70 (Option "NI")**

**PAGE 51**

---

### SUMMARY TEST DATA

**ON**

DETECTOR LOG VIDEO AMPLIFIER-DLVA

**CUSTOMER:** CTC/CSIST

**JOB NO:** 206151-\(\beta\)

**TESTED BY:** B.B.

**DATE:** 10/20/93

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30456

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>Pass</td>
<td>QA/QC</td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TANGENTIAL SIGNAL SENSITIVITY (ISS)</td>
<td>-66 dBm (min.) @ +85°C</td>
<td>-68 dBm (min.) @ -28°C</td>
<td>68 dBM</td>
</tr>
<tr>
<td>4</td>
<td>DYNAMIC RANGE (-66 dBm to 0 dBm at +85°C)</td>
<td>4.5 dB (min.) @ +85°C</td>
<td>70 dB</td>
<td>Pass</td>
</tr>
<tr>
<td>5</td>
<td>FREQUENCY FLATNESS</td>
<td>±2.5 dB (max)</td>
<td>±2.5 dBF</td>
<td>QA/QC</td>
</tr>
<tr>
<td>6</td>
<td>LOG SLOPE</td>
<td>70 ± 5 mV/dB</td>
<td>69.4 mV/dB</td>
<td>QA/QC</td>
</tr>
<tr>
<td>7</td>
<td>LOG LINEARITY (Worst Case Accuracy)</td>
<td>±2.5 dB (max.)</td>
<td>±2.0 dB</td>
<td>QA/QC</td>
</tr>
<tr>
<td>8</td>
<td>LOG LINEARITY @ 10 GHz</td>
<td>±1.5 dB (max.)</td>
<td>±1.0 dB</td>
<td>QA/QC</td>
</tr>
<tr>
<td>9</td>
<td>RISE TIME</td>
<td>35 msec typical</td>
<td>30 sec</td>
<td>QA/QC</td>
</tr>
<tr>
<td>10</td>
<td>CW IMMUNITY</td>
<td>-46 dBm</td>
<td>PASS</td>
<td>QA/QC</td>
</tr>
<tr>
<td>11</td>
<td>DC POWER @ +15V (No Load)</td>
<td>600 mA (max.)</td>
<td>390 mA</td>
<td>QA/QC</td>
</tr>
<tr>
<td>12</td>
<td>DC POWER @ -15V (No Load)</td>
<td>250 mA (max.)</td>
<td>140 mA</td>
<td>QA/QC</td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**

**DATED:** 10/21/93

**QA/QC APPROVAL:**

**DATED:** 10/21/93

---

**AMERICAN MICROWAVE CORPORATION**

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ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30456

S\N DL30456
LOG LINEARITY - 10 GHz

VIDEO OUTPUT (VOLTS)          ERROR (dB)
6                                                   1.5
5                                                   1
4                                                   0.5
3                                                   0
2                                                   -0.5
1                                                   -1
0                                                   -1.5

RF INPUT POWER (dBm)
-80                                                  -1.5
-70                                                  -1
-60                                                  -0.5
-50                                                   0
-40                                                   0.5
-30                                                   1
-20                                                   1.5
-10                                                  2
0                                                     3

--- VIDEO      --- ERROR

TESTED BY: B.B., 9/20/93
CW IMMUNE DISABLED, +25 C
SERIAL NUMBER: DL30456

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

-80 -70 -60 -50 -40 -30 -20 -10 0

10 GHz  2 GHz  18 GHz

TESTED BY: B.B., 10/20/93
CW IMMUNE DISABLED, +25 C
**ACTUAL MEASURED TEST DATA**

**SERIAL NUMBER:** DL30457

**FORM:** DLVA-16/0393

**CUSTOMER:** CTC/C diagnosed

**JOB NO:** 206151

**MODEL NO:** LVD-218-70

**SERIAL NO:** DL30457

---

**TEST ITEM NO.** | **PARAMETERS** | **SPECIFIED VALUE** | **MEASURED VALUE** | **REMARKS QA/QC**
--- | --- | --- | --- | ---
1 | INPUT FREQUENCY | 2 to 18 GHz | **PASSED** | 
2 | INPUT VSWR | 2.5:1 (max.) | **2.12:1** | 
3 | TANGENTIAL SIGNAL SENSITIVITY (TSS) | -66 dBm (min.) @ +85°C  
-63 dBm (min.) @ -25°C | **PASS** | 
4 | DYNAMIC RANGE  
(-66 dBm to 0 dBm at +85°C)  
(-63 dBm to 0 dBm at -25°C) | 66 dB (min.) @ +85°C  
63 dB (min.) @ -25°C | **PASS** | 
5 | FREQUENCY FLATNESS | ±2.5 dB (max.)  
(±2.0 dB Design Goal) | **2.5dB** | 
6 | LOG SLOPE | 70 ±5 mV/DB | **PASSED** | 
7 | LOG LINEARITY (Worst Case Accuracy) | ±2.5 dB (max.)  
(±2.0 dB Design Goal)  
(Fail Attached) | **-1.2dB** | 
8 | LOG LINEARITY @ 10 GHz | ±1.5 dB (max.)  
(±1.0 dB Design Goal)  
(Fail Attached) | **0.7dB** | 
9 | RISE TIME | 35 nsec typical  
40 nsec (max.) | **PASSED** | 
10 | CW IMMUNITY | -46 dBm | **PASSED** | 
11 | DC POWER @ +15V (No Load) | 600 mA (max.) | **370mA** | 
12 | DC POWER @ -15V (No Load) | 250 mA (max.) | **200mA** | 

**PRODUCTION MANAGER APPROVAL:** [Signature]  
**DATED:** 4/30/93

**QA/QC APPROVAL:** [Signature]  
**DATED:** 4/34/93

---

**AMERICAN MICROWAVE CORPORATION**

7311-G GROVE ROAD, FREDERICK, MARYLAND 21704  
TEL. (301) 662-4700  
FAX (301) 662-4938
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30457

S\N DL30457
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30457

S\N DL30457
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30457

S\N DL30457
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
# ACTUAL MEASURED TEST DATA

**TEST DATA**  
LVD-218-70 (Option "NI")  
PAGE S8

## SERIAL NUMBER: DL30458

### FORM: DLVA-16/0393  
**JOE NO:** 206151

### SUMMARY TEST DATA  
**ON DETECTOR LOG VIDEO AMPLIFIER—DLVA**

**CUSTOMER:** CTC/CSIST  
**JOB NO:** 206151  
**DATE:** 4/29/93  
**MODEL NO:** LVD-218-70  
**SERIAL NO:** DL30458

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT FREQUENCY</td>
<td>2 to 18 GHz</td>
<td>PASS</td>
<td>✔️</td>
</tr>
<tr>
<td>2</td>
<td>INPUT VSWR</td>
<td>2.5:1 (max.)</td>
<td>2.0:1</td>
<td>✔️</td>
</tr>
</tbody>
</table>
| 3             | TANGENTIAL SIGNAL SENSITIVITY (TSS) | -86 dBm (min.) @ +35°C  
               |              | -86 dBm (min.) @ -35°C |
| 4             | DYNAMIC RANGE | 66 dB (min.) @ +35°C  
               |              | 68 dB (min.) @ -35°C |
| 5             | FREQUENCY FLATNESS | ±2.5 dB (max)  
               |              | ±2.5 dB       | ✔️      |
| 6             | LOG SLOPE     | 70 ± 5 mV/db    | ✔️             |         |
| 7             | LOG LINEARITY | ±2.5 dB (max.)  
               |              | (±1.0 dB Design Goal) |
| 8             | LOG LINEARITY @ 10 GHz | ±1.5 dB (max.)  
               |              | (±1.0 dB Design Goal) | (Plot Attached) |
| 9             | RISE TIME     | 35 nsoc typical  
               |              | ✔️             |         |
| 10            | CW IMMUNITY   | -46 dBm         | ✔️             |         |
| 11            | DC POWER @ +15V (No Load) | 600 mA (max.)  
               |              | 310 mA        | ✔️      |
| 12            | DC POWER @ -15V (No Load) | 250 mA (max.)  
               |              | 130 mA        | ✔️      |

**PRODUCTION MANAGER APPROVAL:**  
**DATE:** 4/30/93  
**QA/QC APPROVAL:**  
**DATE:** 4/30/93

---

AMERICAN MICROWAVE CORPORATION  
7311-G GROVE ROAD, FREDERICK, MARYLAND 21704 • TEL. (301) 662-4700 • FAX (301) 662-4938
SERIAL NUMBER: DL30458

S\N DL30458
LOG TRANSFER & ERROR - 2 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30458

S\N DL30458
LOG TRANSFER & ERROR - 10 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
ACTUAL MEASURED TEST DATA

SERIAL NUMBER: DL30458

S\N DL30458
LOG TRANSFER & ERROR - 18 GHz

VIDEO OUTPUT (VOLTS) & LOG ERROR (dB)

RF INPUT POWER (dBm)

TESTED BY: B.B., 4/29/93
CW IMMUNE DISABLED
TEST DATA

ON

8.0 TO 18.0 GHz
(2.0 TO 18.0 GHz OR 0.5 TO 18.0 GHz UNITS ARE AVAILABLE)

MINIATURE

LOW CURRENT DRAW

LOW VOLTAGE (UNREGULATED)

-60 dBm TANGENTIAL SENSITIVITY
(-65 dBm UNITS ARE AVAILABLE)

65 dB DYNAMIC RANGE
(60 dB, 65 dB, 70 dB, and 75 dB UNITS ARE AVAILABLE)

HIGH RELIABILITY

EXTENDED RANGE
DETECTOR LOGARITHMIC VIDEO AMPLIFIER
(ER-DLVA)

AMC MODEL No:
LVDM-218-70/75 OPTION 818-65-60
SERIAL NUMBERS: DL711204

DESIGNED
BY
A. K. GORWARA

TESTED
BY
B. BAKER

REPORTED
BY
P. D. WOOD

27 JANUARY 1998
8.0 TO 18.0 GHz
HIGH RELIABILITY
65 dB DYNAMIC RANGE
DETECTOR LOG VIDEO AMPLIFIER

- MINIATURE
- VERY STABLE
- FAST SETTLING
- HIGH RELIABILITY
- LOW CURRENT DRAW
- WIDE DYNAMIC RANGE

SPECIFICATIONS

- FREQUENCY : 8.0 TO 18.0 GHz
  (6 TO 18 GHz, 2 TO 18 GHz,
  OR 0.5 TO 18 GHz UNITS ARE AVAILABLE)

- LOG SLOPE (WITH 100 Ω ±5% LOAD) : 50 mV/dB ±5 mV NOMINAL (OTHER SLOPES
  AVAILABLE)

- LOGGING DYNAMIC RANGE : -60 TO + 5 dBm MIN.
  (OUTPUT VOLTAGE 0.2 TO 3.35 VOLTS) (60 dB, 65 dB,
  70 dB, OR 75 dB DYNAMIC RANGE UNITS ARE
  AVAILABLE)

- LOG LINEARITY : ±1.75 dB MAX., ±1.5 dB TYP. (FROM BEST
  FIT STRAIGHT LINE)

- FREQUENCY FLATNESS (8.0 TO 18.0 GHz) : ±1.75 dB MAX., ±1.5 dB TYP.

- OUTPUT STABILITY OVER TEMPERATURE : ±1.0 dB MAX. (0°C TO +50°C)

- TSS LEVEL : -60 dBm MIN. (-65 dBm UNITS ARE AVAILABLE)

- RISE TIME (10% TO 90% POINTS) : 20 nS MAX.

- SETTLING TIME : 40 nS MAX., 30 nS TYP.

- RECOVERY TIME : 400 nS MAX., 250 nS TYP.

- INPUT VSWR@-20 dBm (8.0 to 18.0 GHz) : 3:1 MAX., 2.5:1 TYP.

- D. C. OFFSET : ±1.5 dB MAX., ±1.0 dB TYP.

- VIDEO LOAD IMPEDANCE : 100 Ω

- RF INPUT POWER : +15 dBm MAX.

- D. C. POWER (EXTERNALLY REGULATED
  AND NO LOAD CONDITION) : +9 vdc ±5%, @ +275 mA MAX.

- SIZE : 3.4" x 1.75" x 0.5"

- WEIGHT : ≤4.0 oz.
MECHANICAL OUTLINE

ENVIRONMENTAL SPECIFICATIONS

STANDARD RATINGS:

- TEMPERATURE
  -54°C TO +85°C (OPERATING)
  -65°C TO +100°C (STORAGE)

- HUMIDITY
  MIL-STD-202F, METHOD 1038 CONDITION B

- SHOCK
  MIL-STD-202F, METHOD 2138 CONDITION B

- VIBRATION
  MIL-STD-202F, METHOD 204D CONDITION B

- ALTITUDE
  MIL-STD-202F, METHOD 105C CONDITION B

- TEMPERATURE CYCLE
  MIL-STD-202F, METHOD 107D CONDITION A

HIGH RELIABILITY RATINGS:

- (THESE SPECIFICATIONS ARE AVAILABLE, INQUIRE WITH FACTORY FOR DETAILS)

  - ACCELERATION
    0.2G²/Hz FROM 10-500Hz X, Y & Z AXIS, 2 HOURS PER AXIS

  - RANDOM VIBRATION
    X AXIS TO 100 Hz @ 0.04 G²/Hz, 150 - 400 Hz @ 1.0 G²/Hz
    Y AXIS TO 130 Hz @ 0.04 G²/Hz, 130 - 250 Hz @ 4.0 G²/Hz,
    250-500 Hz, 6 dB
    Z AXIS TO 100 Hz @ 0.1 G²/Hz, 100 - 300 Hz @ 4.0 G²/Hz,
    300-500 Hz, 6 dB

- SINUSOIDAL VIBRATION
  X AXIS 35 - 100 Hz @ 6 G RMS, 100 - 250 Hz @ 15 G RMS
  Y & Z AXIS 35 - 100 Hz @ 6 G RMS, 100 - 250 Hz @ 30 G RMS

(ACTUAL TESTING HAS BEEN PERFORMED FOR VIBRATIONS PER MIL-STD-202F, METHOD 204, 0.2G²/Hz FROM 10-500Hz X, Y & Z AXIS, 15 MINUTES PER AXIS)

27 JANUARY 1998
# SUMMARY TEST DATA

## FORM: LVDM-70-MP  25/0997

## AMERICAN MICROWAVE CORPORATION

**JOB NO:** 709191-3

## SUMMARY TEST DATA ON DETECTOR LOG VIDEO AMPLIFIER–DLVA

**CUSTOMER:** McDONNELL DOUGLAS  
**MODEL NO:** LVDM-218-70/75 OPTION 818, GH  
**SERIAL NO:** D-I-71-11344

**TESTED BY:**  
**TEMPERATURE:** 0°C TO +60°C  
**DATE:** 1/23/98

## CW APPLICATION

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INPUT VSWR @ -20dBm (8-18 GHz)</td>
<td>3.0:1 (MAX)</td>
<td>1.5:1</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>TYPICAL OUTPUT VOLTAGE @ -60 dBm TO +5 dBm</td>
<td>PLOT ATTACHED</td>
<td>0.35 VOMS</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>TSS (8-18 GHz)</td>
<td>-60 dBm (MIN)</td>
<td>-51 dBm</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>LOG SLOPE (± 10% TOL)</td>
<td>50 mV/dB</td>
<td>48.7 to 51.2 mV/dB</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>LOG LINEARITY @ -60 dBm TO +5 dBm</td>
<td>±1.75 dB (MAX)</td>
<td>±1.5 dB TYPICAL</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>FREQUENCY FLATNESS (8-18 GHz)</td>
<td>±1.75 dB (MAX)</td>
<td>±1.2 dB</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>OUTPUT STABILITY (0°C TO 60°C)</td>
<td>±1.0 dB (MAX)</td>
<td>±0.4 dB</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>D.C. POWER @ +9V REGULATED WITH NO LOAD</td>
<td>275 mA (MAX)</td>
<td>255 mA</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>225 mA TYPICAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>D.C. POWER @ -9 V REGULATED WITH NO LOAD</td>
<td>150 mA (MAX)</td>
<td>148 mA</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125 mA TYPICAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 1/23/98

**QA/QC APPROVAL:**  
**DATED:** 1/23/98

27 JANUARY 1998
LOG TRANSFER WITH TEMPERATURE @ 12.0 GHz
AS MEASURED AT +25°C, 0°C AND +60°C
SERIAL No: DL711204

27 JANUARY 1998
LOG TRANSFER WITH FREQUENCY

27 JANUARY 1998

+25 C, 1/22/98

VF: 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4

RF INPUT POWER (dBm)

VIDEO OUTPUT (VOLTS)

- 8 GHz + 10 GHz ≈ 12 GHz ≈ 14 GHz ≈ 16 GHz + 18 GHz
TEST DATA
FOR
50 dB
9.3 to 10.8 GHz DC-COUPLED
DETECTOR LOG VIDEO AMPLIFIER
(DLVA)
WITH
-85 dBm TSS LEVEL
AMC MODEL: LVD-910-85
(SERIAL NO: DL20898)
BY
AMERICAN MICROWAVE CORPORATION
11 SEPTEMBER 1992
GPD TYPE CONNECTOR

TAP THRU 2-56
4 PLACES

GPD TYPE CONNECTOR

DIMENSIONS ARE IN INCHES

TOLERANCE: X.XXX ±0.010
X.XX ±0.020

ORIGINAL RELEASE
07/19/92
**SUMMARY TEST DATA**

**ON**

**DETECTOR LOG VIDEO AMPLIFIER--DLVA**

**CUSTOMER:** E. G. & G  
**JOB NO:** 112243  
**MODEL NO:** LVD-910-85  
**SERIAL NO:** DL20898  
**TESTED BY:**  
**DATE:** 9/10/92

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TSS (min)</td>
<td>-85 dBm</td>
<td>-85 dBm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 TO 60°, 9.3 TO 10.8 GHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LOG SLOPE</td>
<td>25mV/min, 100mV max</td>
<td>33 mV/dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-80 TO -35dBm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>LOG LINEARITY ERROR (max)</td>
<td>±1.0dB</td>
<td>±1.0dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-80 TO -35dBm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ABSOLUTE ACCURACY (ERROR MAX) WITH FREQUENCY, POWER, TEMPERATURE, OFFSET 9.3 TO 10.8GHz, 0 TO 60°C, -80 TO -35dBm</td>
<td>±2.0dB</td>
<td>-1.5dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>ABSOLUTE ACCURACY WITH FREQUENCY AND TEMPERATURE</td>
<td>±1.0dB</td>
<td>±0.95dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>CURRENT DRAW (max)</td>
<td>±5V, 1000 ohm load</td>
<td>120 mA</td>
<td>79 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-5V, 1000 ohm load</td>
<td>20 mA</td>
<td>28 mA</td>
</tr>
<tr>
<td>7</td>
<td>VSWR 9.3 TO 10.8 GHz</td>
<td>2.0:1</td>
<td>1.9:1</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>RISE TIME (MAX)</td>
<td>1.5 μSEC</td>
<td>600μS</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>FALL TIME (MAX)</td>
<td>1.5 μSEC</td>
<td>650μS</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>RECOVERY TIME (MAX)</td>
<td>30 μSEC (max)</td>
<td>10μS</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:**  
**DATE:** 9/11/92  
**QA/QC APPROVAL:**  
**DATE:** 9/11/92
VIDEO OUTPUT VOLTAGE VERSUS INPUT RF POWER
AT 9.3 GHz, 10.8 GHz, AND TEMPERATURES
OF 0°C, 30°C, AND 60°C
AMC MODEL NO: LVD-910-85 SERIAL NO: DL20898

<table>
<thead>
<tr>
<th>RF INPUT POWER (dBm)</th>
<th>VIDEO OUTPUT (VOLTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.8 GHz, 0°C</td>
</tr>
<tr>
<td>-35</td>
<td>1.553</td>
</tr>
<tr>
<td>-40</td>
<td>1.401</td>
</tr>
<tr>
<td>-45</td>
<td>1.23</td>
</tr>
<tr>
<td>-50</td>
<td>1.069</td>
</tr>
<tr>
<td>-55</td>
<td>0.888</td>
</tr>
<tr>
<td>-60</td>
<td>0.708</td>
</tr>
<tr>
<td>-65</td>
<td>0.526</td>
</tr>
<tr>
<td>-70</td>
<td>0.361</td>
</tr>
<tr>
<td>-75</td>
<td>0.18</td>
</tr>
<tr>
<td>-80</td>
<td>0.049</td>
</tr>
</tbody>
</table>
S/N DL20898
LOG TRANSFER & ERROR
9.3GHz @ +30C

VIDEO OUTPUT (VOLTS)

ERROR (dB)

RF INPUT POWER (dBm)

--- VIDEO (VOLTS) --- LINEARIZED --- ERROR (dB) ---

9/9/92
S/N DL20898
LOG TRANSFER & ERROR
10.8GHz @ 0C

VIDEO OUTPUT (VOLTS)    ERROR (dB)

RF INPUT POWER (dBm)


0 0.5 1 1.5 2

--- VIDEO (VOLTS) --- LINEARIZED --- ERROR (dB)

9/9/92
S/N DL20898
LOG TRANSFER & ERROR
9.3GHz @ +60C

VIDEO OUTPUT (VOLTS)

ERROR (dB)

RF INPUT POWER (dBm)

VIDEO (VOLTS)  LINEARIZED  ERROR (dB)

9/9/92
TEST DATA
FOR
20 dB
6 to 18 GHz DC-COUPL ED
LINEAR DETECTOR VIDEO AMPLIFIER
(LDVA)

AMC MODEL NO: DVA-50
(SERIAL NO’S: DL20896 & DL20897)

BY

AMERICAN MICROWAVE CORPORATION

25 SEPTEMBER 1992
TEST DATA

ON

AMC MODEL NO: DVA-50
SERIAL NO: DL20896
# SUMMARY TEST DATA
ON
LINEAR DETECTOR VIDEO AMPLIFIER--LDVA

**CUSTOMER:** Norden Systems  
**TESTED BY:** B. Barkli  
**MODEL NO:** DVA-50  
**SERIAL NO:** DL 20896  
**DATE:** 9/24/92

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VSWR (6 - 18 GHz)</td>
<td>2.0:1</td>
<td>2.0:1</td>
<td>O.K.</td>
</tr>
<tr>
<td>2</td>
<td>RISE TIME</td>
<td>70 nS (max)</td>
<td>65 nS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>FREQUENCY FLATNESS 6 - 18 GHz (REFERRED TO RF INPUT)</td>
<td>±1.5 dB (max)</td>
<td>±1.05 dB</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>TRANSFER LAW LINEARITY 6 - 12 GHz, +5 TO +15 dBm</td>
<td>±0.35 dB (max)</td>
<td>±0.55 dB</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>VIDEO OUTPUT STABILITY 0°C TO +65°C (REFERRED TO RF INPUT)</td>
<td>±0.5 dB (max)</td>
<td>±0.5 dB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>BASELINE STABILITY</td>
<td>±3 mV (max)</td>
<td>±0.5 mV</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>POSITIVE CURRENT DRAW @ +15V (NO INPUT SIGNAL)</td>
<td>50 mA</td>
<td>15 mA</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>NEGATIVE CURRENT DRAW @ -15V (NO INPUT SIGNAL)</td>
<td>50 mA</td>
<td>15 mA</td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCTION MANAGER APPROVAL:** [Signature]  
DATED: 9/25/92

**QA/QC APPROVAL:** [Signature]  
DATED: 9/25/92
## SUMMARY TEST DATA
### ON
### LINEAR DETECTOR VIDEO AMPLIFIER—LDVA

**MODEL NO:** DVA-50  
**SERIAL NO:** DL20896

<table>
<thead>
<tr>
<th>RF INPUT POWER (dBm)</th>
<th>VIDEO OUTPUT (VOLTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 GHz, 30°C</td>
</tr>
<tr>
<td>+15</td>
<td>4.66</td>
</tr>
<tr>
<td>+10</td>
<td>2.433</td>
</tr>
<tr>
<td>+5</td>
<td>1.248</td>
</tr>
<tr>
<td>0</td>
<td>0.618</td>
</tr>
<tr>
<td>-5</td>
<td>0.286</td>
</tr>
</tbody>
</table>
DL20896
VIDEO OUTPUT 0 C

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

--- 6 GHz  --- 12 GHz  --- 18 GHz

9/22/92
DL20896
LINEARITY ERROR 0°C

LINEARITY ERROR (dB)

RF INPUT POWER (dBm)

ERROR 6 GHz
ERROR 12 GHz
ERROR 18 GHz

9/22/92
TEST DATA

ON

AMC MODEL NO: DVA-50
SERIAL NO: DL20897
# SUMMARY TEST DATA

**ON**

**LINEAR DETECTOR VIDEO AMPLIFIER—LDVA**

**CUSTOMER:** NORDEN SYSTEMS  
**TESTED BY:** T. Baker  
**MODEL NO:** DVA-50  
**SERIAL NO:** DL20897  
**DATE:** 9/24/92

<table>
<thead>
<tr>
<th>TEST ITEM NO.</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>MEASURED VALUE</th>
<th>REMARKS QA/QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VSWR (6 - 18 GHz)</td>
<td>2.0:1</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RISE TIME</td>
<td>70 nS (max)</td>
<td>60 nS</td>
<td></td>
</tr>
</tbody>
</table>
| 3             | FREQUENCY FLATNESS  
6 - 18 GHz  
(REFERRED TO RF INPUT) | ±1.5 dB (max)   | ±1.2 dB        |                |
| 4             | TRANSFER LAW LINEARITY  
6 - 12 GHz, -5 TO +15 dBm  
(REFERRED TO RF INPUT) | ±0.35 dB (max)  | ±0.6 dB        |                |
| 5             | VIDEO OUTPUT STABILITY  
0°C TO +65°C  
(REFERRED TO RF INPUT) | ±0.5 dB (max)   | ±0.6 dB        |                |
| 6             | BASELINE STABILITY                | ±3 mV (max)     | ±1.4 mV        |                |
| 7             | POSITIVE CURRENT DRAW @  
+15V (NO INPUT SIGNAL) | 50 mA           | 16 mA          |                |
| 8             | NEGATIVE CURRENT DRAW @  
-15V (NO INPUT SIGNAL) | 50 mA           | 16 mA          |                |

**PRODUCTION MANAGER APPROVAL:**  
**DATED:** 9-25-92  
**QA/QC APPROVAL:**  
**DATED:** 9-25-92
SUMMARY TEST DATA
ON
LINEAR DETECTOR VIDEO AMPLIFIER--LDVA

MODEL NO: DVA-50
SERIAL NO: DL20897

<table>
<thead>
<tr>
<th>RF INPUT POWER (dBm)</th>
<th>VIDEO OUTPUT (VOLTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 GHz, 30°C</td>
</tr>
<tr>
<td>+15</td>
<td>4.7</td>
</tr>
<tr>
<td>+10</td>
<td>2.442</td>
</tr>
<tr>
<td>+5</td>
<td>1.245</td>
</tr>
<tr>
<td>0</td>
<td>0.609</td>
</tr>
<tr>
<td>-5</td>
<td>0.277</td>
</tr>
</tbody>
</table>
DL20897
VIDEO OUTPUT 0 C

VIDEO OUTPUT (VOLTS)

RF INPUT POWER (dBm)

6 GHz        12 GHz        18 GHz

9/22/92
DL20897
LINEARITY ERROR 30 C

LINEARITY ERROR (dB)

RF INPUT POWER (dBm)

error 6 GHz  error 12 GHz  error 18 GHz

9/22/92
DL20897
LINEARITY ERROR 65 C

LINEARITY ERROR (db)

RF INPUT POWER (dBm)

-0.6
-0.4
-0.2
0
0.2
0.4
0.6

ERROR 6 GHz
ERROR 12 GHz
ERROR 18 GHz

9/22/92