

## DESCRIPTION

THE MODEL ERDLVA-218-CW-75MV IS A CW IMMUNE EXTENDED RANGE DETECTOR LOG VIDEO AMPLIFIER (ERDLVA) THAT OPERATES BETWEEN THE 2 TO 18 GHz FREQUENCY RANGE WITH A LOG SLOPE OF 75 m / dB AND RISE TIME OF 25 ns.

## SPECIFICATIONS

- FREQUENCY RANGE:----- 2.0 TO 18.0 GHz
- TSS:----- -42 dBm (8.5 dBV SNR)
- FREQUENCY FLATNESS:----- ±1.5 dB MAX AT-20 dBm
- MONOTONIC DYNAMIC RANGE:----- ±75mv -40 dBm TO + 20 dBm
- LOGGING RANGE:----- -40 dBm TO + 20 dBm MIN
- LOG SLOPE:----- 75 ±10mV MAX per dB
- LOG SLOPE LINEARITY:----- -40 TO +20 dBM ±1.00 dB MAX @25°C, ± 1.5dB MAX OVER TEMPERATURE
- THROUGHPUT DELAY TIME:----- 30 ns MAX 10% RF TO 10% VIDEO
- VIDEO BANDWIDTH:----- 20 MHz OVER 60 dB LOGGING RANGE
- RISE TIME AND RECOVERY TIME:----- RISE TIME 25 ns MAX RECOVERY TIME 500 ns
- OVERSHOOT:----- 1 dB DURING FIRST 50 ns
- SETTLING TIME:----- ±0.5 dB WITHIN 25 ns FROM 90%
- PULSE DROOP:----- 1 dB ON PULSES UP TO 250 us
- TRAILING EDGE MONOTONICITY:----- ± 2 dB OVER FULL LOGGING RANGE
- DUTY CYCLE (0.05 us TO 250 us PW):- 0 - 70%
- NEGATIVE GOING OUTPUT:----- CLAMPED AT -0.70 V
- PULSE WIDTH:----- WITHIN 10 ns OF RF PULSE WIDTH @ -5 dB FROM PEAK
- VIDEO OUTPUT LEVEL AVERAGE@-40 dBm OVER FREQUENCY):----- 300 ±50 mV @25°C
- LOG VIDEO OUTPUT VOLTAGE RANGE:----- 300 mV TO 4800 mV NOMINAL, 0 TO 5090 mV MAX
- VIDEO LOAD:----- 66ft. RG71B CABLE TERMINATED IN 93 OHMS
- OUT-OF-BAND PERFORMANCE (1.8 GHz TO 18.3 GHz):----- WITHIN 1.0 dB OF IN-BAND PERFORMANCE
- BASELINE DC OFFSET:----- 0 TO 125 mV MAX
- BASELINE NOISE:----- 62 mV TO 102 mV RMS MAX
- LOAD STABILITY:----- NO OSCILLATIONS 50 OHM LOAD AND CABLE

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	PRELIMINARY	9/22/2015	JM
	A1	RELEASE	7/20/2021	JM
	B1	ECN# 22-0021	2/15/2022	JM

## SPECIFICATIONS

- CW RECOVERY CIRCUIT PERFORMANCE:----- CW IMMUNITY RANGE -50 dBm TO -10 dBm.  
CW ATTACK TIME 1500 us MAX  
RELEASE TIME 250 us MAX  
SHALL NOT ACT ON NOISE LESS THAN 250 us.
- INPUT IMPEDANCE:----- 50 ohms NOM
- INPUT VSWR:----- LESS THAN 2.5:1 MAX UP TO -20dBm  
INPUT AND LESS THAN 3.0:1 MAX UP TO +15 dBm INPUT
- INPUT POWER HANDLING:----- CW RF INPUT LEVELS OF +23 dBm MIN
- VOLTAGES AND CURRENT (NO SIGNAL):----- +12.0V +5% MAX UNREGULATED  
0.25 amp MAX  
-12.0V +5% MAX UNREGULATED 0.25 amp MAX
- NOISE:----- 200mV P- P SWITCHING POWER SUPPLY NOISE. 20 TO 100 KHz SWITCHING RATE WITH 1 TO 20 MHz FUNDAMENTAL SWITCHING FREQUENCIES AND RESULTING HARMONICS.
- RIPPLE:----- POWER SUPPLY RIPPLE OF ±1 % FROM DC TO 1 MHz ON ALL POWER LINES.
- SUPPLY VOLTAGE FOLD BACK:----- NO DAMAGE
- LEAKAGE LEVELS:----- <-60 dBm
- WARM-UP TIME:----- 10 SECONDS

**PMI CONFIDENTIAL AND PROPRIETARY**

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ISO 9001 CERTIFIED

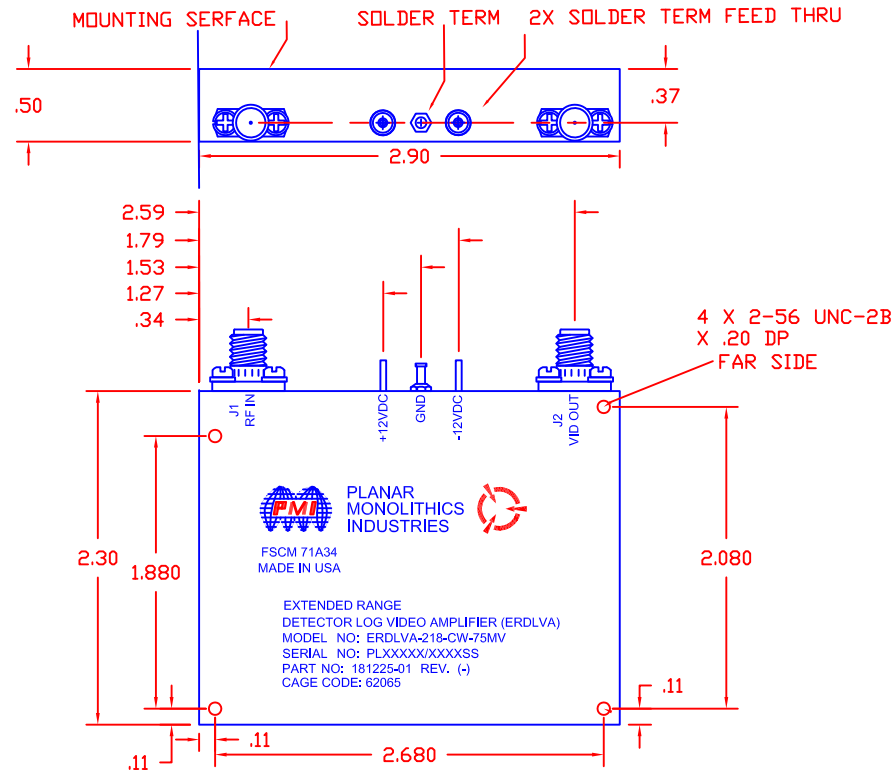


APPROVALS		DATE	TITLE		
DRAWN		JM	PRODUCT FEATURE ERDLVA-218-CW-75MV		
CHECKED		9-22-15	SIZE	FSCM NO.	DWG NO.
ISSUED			A	71A34	27042440
			SCALE	N:S	SHEET 1 OF 2
					REV. B1

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## ENVIRONMENTAL RATINGS

- TEMPERATURE: ——— -25 °C TO +85 °C (OPERATING)  
-40 °C TO +85 °C (STORAGE)
- HUMIDITY: ——— TO 100% +30 °C TO +55°C WITH CONDENSATION, 240 HR EXPOSURE
- FUNGUS: ——— NO FUNGUS NUTRIENT MATERIALS, PCB'S TO BE HUMISEALED
- VIBRATION: ——— 0.2"(DOUBLE AMPLITUDE) 5-14 Hz, 2.0 G 14 TO 33 Hz, 0.036"(DOUBLE AMPLITUDE) 33 TO 52 Hz, 5.0 G 52 TO 500 Hz
- ALTITUDE: ——— NON-OPERATING: SEA LEVEL TO 40,000 FEET ASL. OPERATING: SEA LEVEL TO 20,000 FEET ASL
- RANDOM VIBRATION: — 0.04 g<sup>2</sup> / Hz FROM 60 TO 35 Hz, DECREASING @ 3 dB / OCTAVE FROM 60 TO 20 Hz AND 350 Hz TO 2 kHz, 6 GRAMS TOTAL
- FUNCTIONAL SHOCK: — 40 G (6 SHOCKS PER AXIS, 6 TO 9 ms DURATION)

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
X.XX ±0.020  
X.XXX ±0.010

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				SHEET	2 OF 2