

## DESCRIPTION

THE MODEL ERDLVA-218-CW-75MV-93 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 MAX
- 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
- LOG VIDEO OUTPUT VOLTAGE RANGE:----- 300 mV TO 4800 mV NOMINAL, 0 TO 5090 mV MAX
- VIDEO LOAD IMPEDANCE:----- 93 ohms ±2%
- BASELINE DC OFFSET:----- 0 TO 125 mV MAX
- BASELINE NOISE:----- 62 mV TO 102 mV RMS MAX
- LOAD STABILITY:----- NO OSCILLATIONS 93 OHM LOAD AND CABLE

## 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

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	PRELIMINARY	8/24/2021	
	A1	RELEASE	2-15-22	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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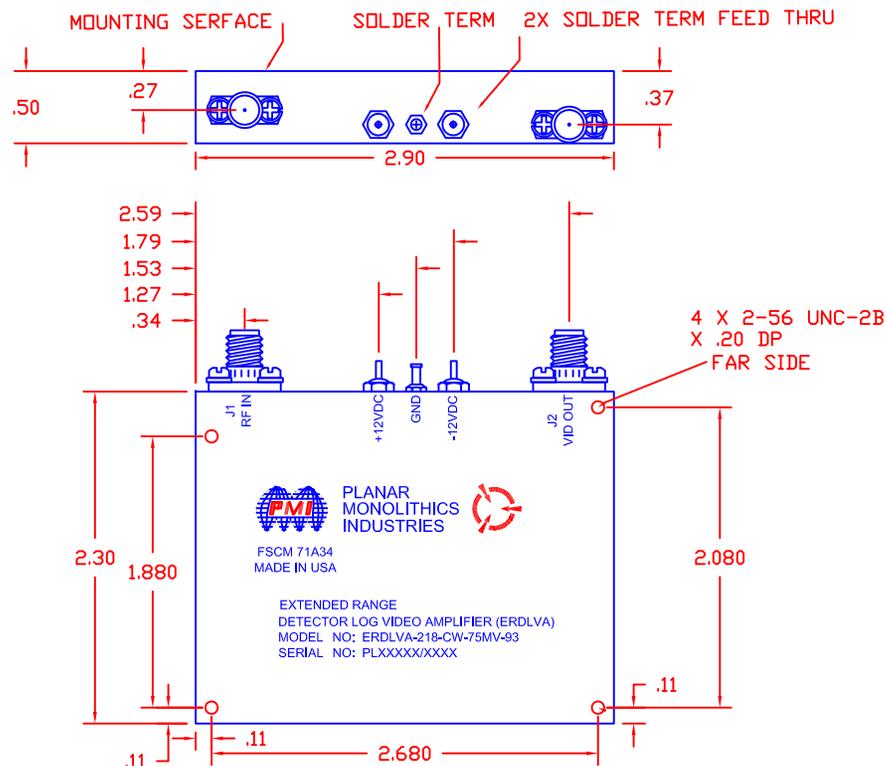


APPROVALS		DATE	TITLE			REV.
DRAWN JPH		8/24/21	PRODUCT FEATURE ERDLVA-218-CW-75MV-93			A1
CHECKED			SIZE A	FSCM NO. 71A34	DWG NO. 27043240	
ISSUED			SCALE N:S		SHEET 1 OF 2	

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