

## DESCRIPTION

Miniature Successive Detection Log Video Amplifier that operates over the 0.1 to 2.0 GHz range. This unit has a dynamic range of 65 to 70 dB a TSS of -67 dBm and a nominal video bandwidth of 20 MHz. Furthermore this unit is designed using cutting edge GaAs technology which provides stunning performance and reliability in a compact package making it an optimum solution for high speed channelized receiver applications. This unit offers typical fast rise time <20 ns, rapid fall time <25 ns, as well as superior delay time of 8 ns. The log slope is 25 mV/dB and the accuracy is less than +/- 1.0 dB over the -60 to 0 dBm power input range. Dynamic range can be extended to -65/+5 with log error of +/- 1.5 dB. Options are available with adjustable logging slope and DC offsets. Guaranteed rise times are less than 25ns and maximum recovery times are less than 30 ns. Recovery times at lower power are faster. It is commercially screened and characterized from -55 degrees to 85 degrees Celsius. Sizes available are 0.395 x 0.280 x 0.09 or any other customized configuration desired. Connectorized versions are available as Model No: SDLVA-0120-70 and SLVA-06135

## SPECIFICATIONS

- FREQUENCY RANGE**  
PMI MODEL NO. SDLVAC-0120-70M 0.1 TO 2.0 GHz
- DYNAMIC RANGE** >65 dB
- LOG LINEARITY** ±1.2 dB MAX. (-60 TO 0 dBm), ±0.8 dB TYPICAL  
±1.5 dB MAX. (-65 TO +5 dBm), ±1.2 dB TYPICAL
- MINIMUM LOGGING RANGE** -60 dBm (-65 dBm TYPICAL)
- MAXIMUM LOGGING RANGE** +5 dBm (+8 dBm TYPICAL)
- VSWR INPUT** 1.8:1 MAXIMUM (1.5:1 TYPICAL)
- TANGENTIAL SENSITIVITY** -65 dBm MINIMUM (-70dBm TYPICAL)
- LIMITED IF OUTPUT** -16 dBm TYPICAL
- MAXIMUM RF INPUT POWER** +10 dBm
- LOG VIDEO OUTPUT:**
  - OUTPUT COUPLING: DC
  - MAXIMUM OUTPUT VOLTAGE: 2.7 VOLTS
  - RISE TIME: 25 ns MAXIMUM (15 ns TYPICAL)
  - FALL TIME: 30 ns TYPICAL
  - SETTLING TIME: 40 ns MAXIMUM
  - DC OFFSET: EXTERNALLY ADJUSTABLE
  - SLOPE: EXTERNALLY ADJUSTABLE TO 30mV/dB (TYPICAL)
  - LOG SLOPE VARIATION WITH FREQUENCY: ±0.5 mV/dB TYPICAL (OVER 80 MHz RF BANDWIDTH)
  - LOG SLOPE VARIATION WITH TEMPERATURE: ±1 mV TYPICAL
  - PROPAGATION DELAY: 10 ns MAXIMUM, 7 ns TYPICAL
  - VIDEO LOAD: 100Ω (MINIMUM)
- DC POWER SUPPLY (REGULATED TO 0.1%)**
  - +V: +5 VOLTS @30mA (NO VIDEO LOAD)
  - V: -5 VOLTS @170mA
- SIZE** 0.395" x 0.280" x 0.090"

## ENVIRONMENTAL RATINGS

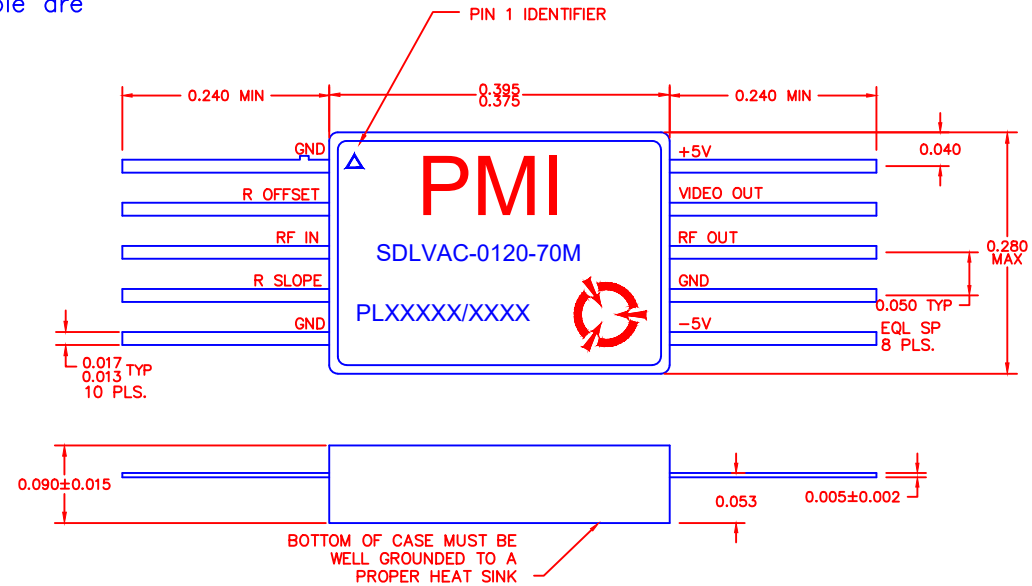
- TEMPERATURE:** -55°C TO +85°C (OPERATING)  
-65°C TO +100°C (STORAGE)
- HUMIDITY:** MIL-STD-202F, METHOD 103B COND. B
- SHOCK:** MIL-STD-202F, METHOD 213B COND. B
- VIBRATION:** MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE:** MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE:** MIL-STD-202F, METHOD 107D COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: SPECIFICATIONS ARE SUBJECT TO MINOR CHANGES DUE TO PROCESS VARIATIONS OVER TIME AND TOLERANCES

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

**PMI CONFIDENTIAL AND PROPRIETARY**

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	7/13/93	



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ISO 9001 CERTIFIED



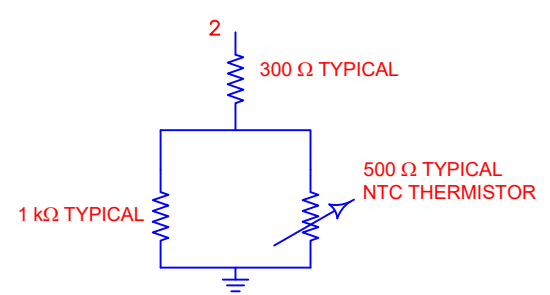
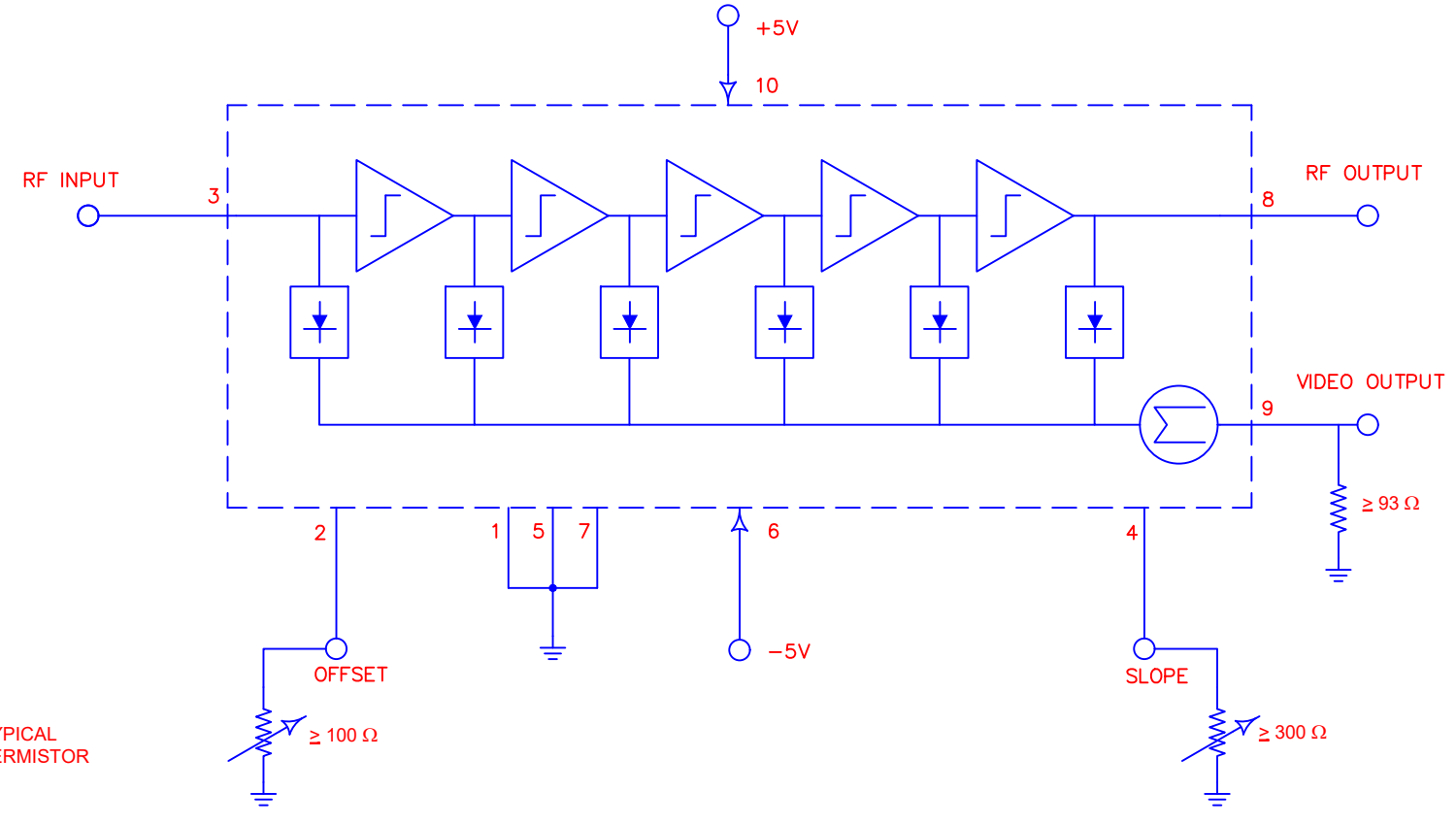
APPROVALS		DATE	TITLE		
DRAWN <i>WSP</i>		7/13/93	PRODUCT FEATURE SDLVAC-0120-70M 0.1 TO 2.0 GHz, MINIATURE DC-COUPLED, SDLVA		
CHECKED			SIZE	FSCM NO.	DWG NO.
ISSUED			A	05XQ0	27040120
			SCALE	N:S	SHEET 1 OF 2
					REV. A1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	7/13/93	

## FUNCTIONAL BLOCK DIAGRAM

**NOTES:**

1. MINIMUM RESISTANCE ON PIN 2: 100 Ω (DO NOT SHORT)
2. MINIMUM RESISTANCE ON PIN 4: 300 Ω (DO NOT SHORT)
3. IF NO OFFSET OR SLOPE ADJUSTMENT IS REQUIRED ON PIN 2 OR 4 EITHER PIN MAY BE LEFT FLOATING
4. OFFSET TEMPERATURE DRIFT IS -2.2 mV / °C TYPICALLY. IT MAY BE COMPENSATED FOR USING THE NTC THERMISTOR CIRCUIT PROVIDED BELOW



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APPROVALS		DATE	TITLE		
DRAWN <i>WSP</i>		7/13/93	PRODUCT FEATURE		
CHECKED			SDLVAC-0120-70M		
ISSUED			0.1 TO 2.0 GHz, MINIATURE DC-COUPLED, SDLVA		
SIZE	FSCM NO.	DWG NO.	REV.		
A	05XQ0	27040120	A1		
SCALE N:S		SHEET		2 OF 2	