



Threshold Detector, SMA, Video Out,  
+10 dBm max Pin, 2 GHz to 18 GHz

## Detectors Technical Data Sheet

PE80T1000

The PE80T1000 is a High Speed, TTL Logic Output Fixed Threshold Detector designed to Operate from 2 to 18 GHz. This Detector incorporates additional gain stages for higher input dynamic range that covers from -20 to +10 dBm, and has a fast response time of 100 ns. Max. Input Power from -20 to +10 dBm gives a TTL "1" video output. Input power from no signal to -25dBm gives a TTL "0" video output. The rugged Compact Package design utilizes field replaceable SMA connectors, voltage and ground pins. The TTL Video out put pin supports a Field Replaceable SMA connector. This module is designed to meet MIL-STD-202F Environmental Conditions that includes Humidity, Shock, and Vibration.

### Features

- High Speed Threshold Detector
- 2 GHz to 18 GHz Frequency Range
- Minimum Signal Level -20 dBm @ 2 GHz, -17 dBm @ 18 GHz
- TTL Logic Output
- Propagation Delay 15 ns Max
- Designed to meet MIL-STD-202F Environmental Conditions
- Fast Response Time: 100 nsec max
- Field Replaceable SMA Connectors

### Applications

- Electronic Warfare
- Test & Measurement
- System Monitoring
- AM Noise Measurements
- Military & Space
- Radar
- Pulsed RF Measurements in Ultra Broadband Applications
- Leveling Pulse Signal Sources
- Military Communications Systems

### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	2		18	GHz
VSWR (@ -20 dBm Pin)			3:1	
Input Power			+10	dBm
Threshold Variation Over Temperature		±0.5		dB
Signal Level for Logic 1 @ 18 GHz	-17			dBm
Signal Level for Logic 0	-25			dBm
Dynamic Range	-20		+10	dBm
Propagation Delay (from 50% of an input of -20 dBm)			15	ns
Propagation Delay (from 50% of an input of +10 dBm)			15	ns

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Threshold Detector, SMA, Video Out, +10 dBm max Pin, 2 GHz to 18 GHz PE80T1000](#)



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Response Time	100	ns
Detected Video Output	TTL TTL="1" on Video Out For Signals Above Threshold Setting TTL="0" on Video Out For Signals Below Threshold Setting	
DC Power Supply @ +15 Volts	100	mA
DC Power Supply @ -15 Volts	100	mA
Operating Temperature Range	-55	+85 deg C

### Mechanical Specifications

<b>Size</b>	
Length	2.5 in [63.5 mm]
Width	2 in [50.8 mm]
Height	0.5 in [12.7 mm]
Weight	0.109 lbs [49.44 g]
Connector 1	SMA Female
Connector 2	SMA Female
Pins	Solder Pin
Finish	Gold

### Environmental Specifications

<b>Temperature</b>	
Operating Range	-55 to +85 deg C
Storage Range	-65 to +100 deg C
Temperature Cycle	MIL-STD-202F, METHOD 107D COND. A
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

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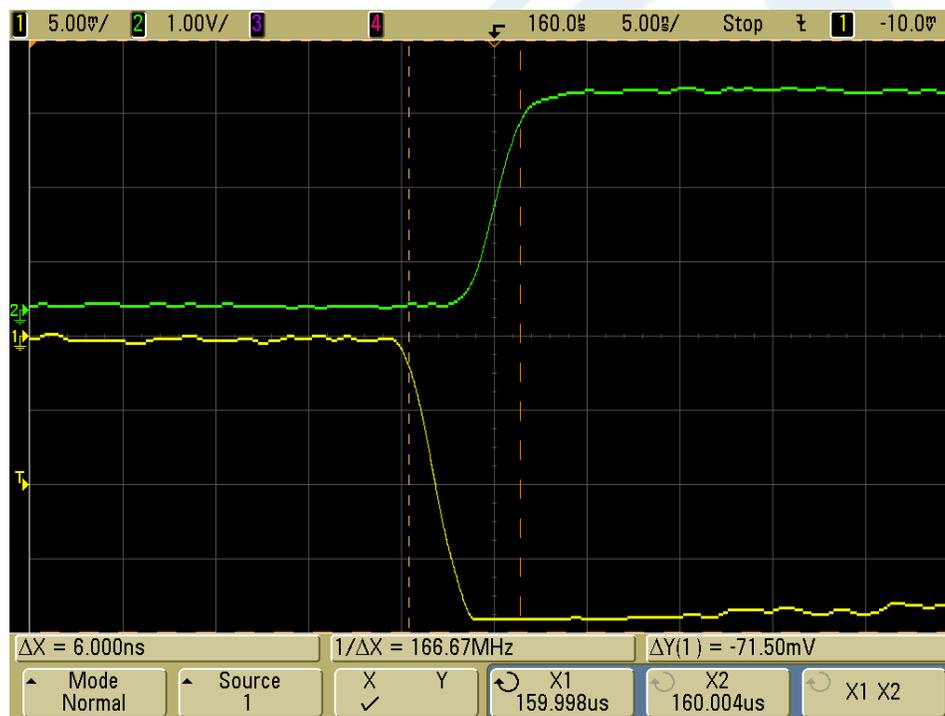
PE80T1000

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

[On Time 50 Ohm Load](#)



**Channel 1 (Yellow): +6 dBm Input Power Using Crystal Detector with Negative Voltage Output (When RF Power is present, Negative Voltage is seen)**

**Channel 2 (Green): Video Output from Threshold Detector**

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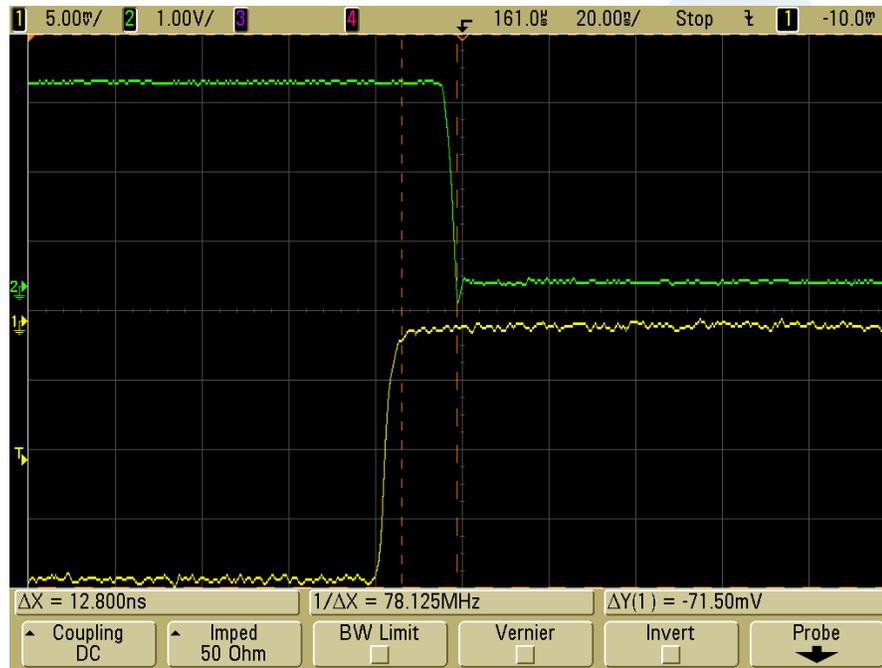


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PE80T1000

### Off Time 50 Ohm Load



**Channel 1 (Yellow):** +6 dBm Input Power Using Crystal Detector with Negative Voltage Output (When RF Power is present, Negative Voltage is seen)

**Channel 2 (Green):** Video Output from Threshold Detector

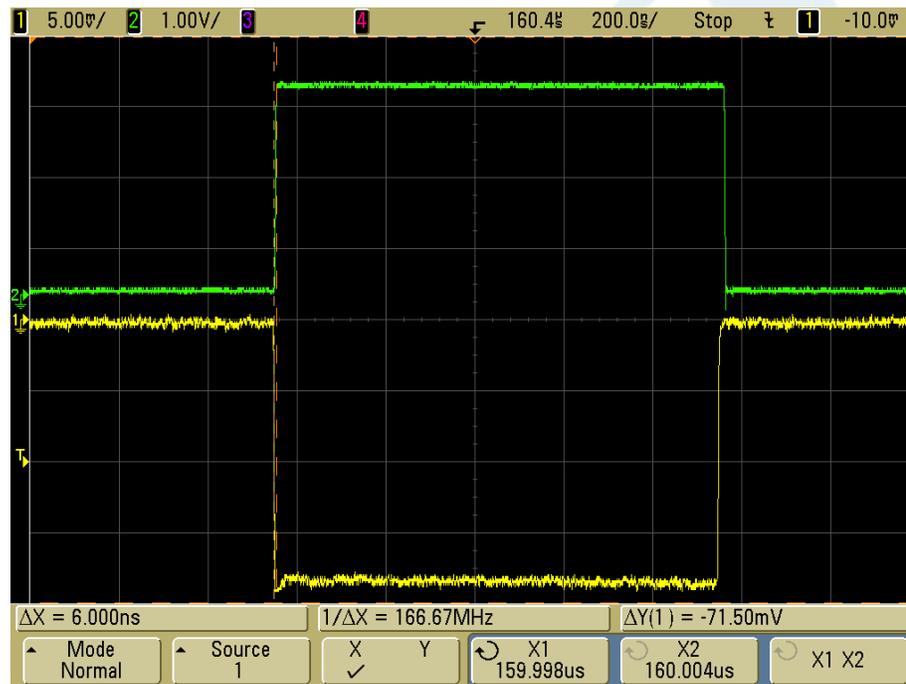
**Off Time:** Threshold Level is set for -20 dBm, which cannot be detected using the crystal detector, so the output does not start switching off until Channel 1 reaches virtually 0 V

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Full Pulse 50 Ohm Load



Channel 1 (Yellow): +6 dBm Input Power Using Crystal Detector with Negative Voltage Output (When RF Power is present, Negative Voltage is seen)

Channel 2 (Green): Video Output from Threshold Detector

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Threshold Detector, SMA, Video Out, +10 dBm max Pin, 2 GHz to 18 GHz from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Threshold Detector, SMA, Video Out, +10 dBm max Pin, 2 GHz to 18 GHz PE80T1000](https://www.pasternack.com/sma-detector-15-propagation-2-18-ghz-pe80t1000-p.aspx)

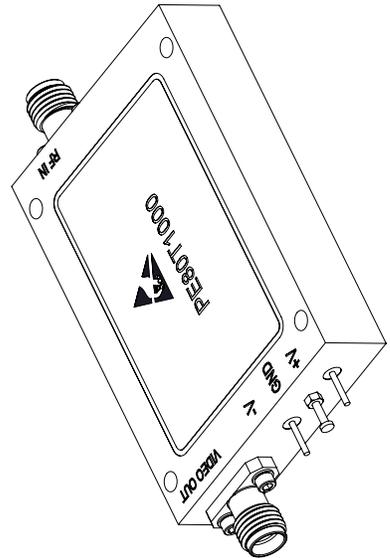
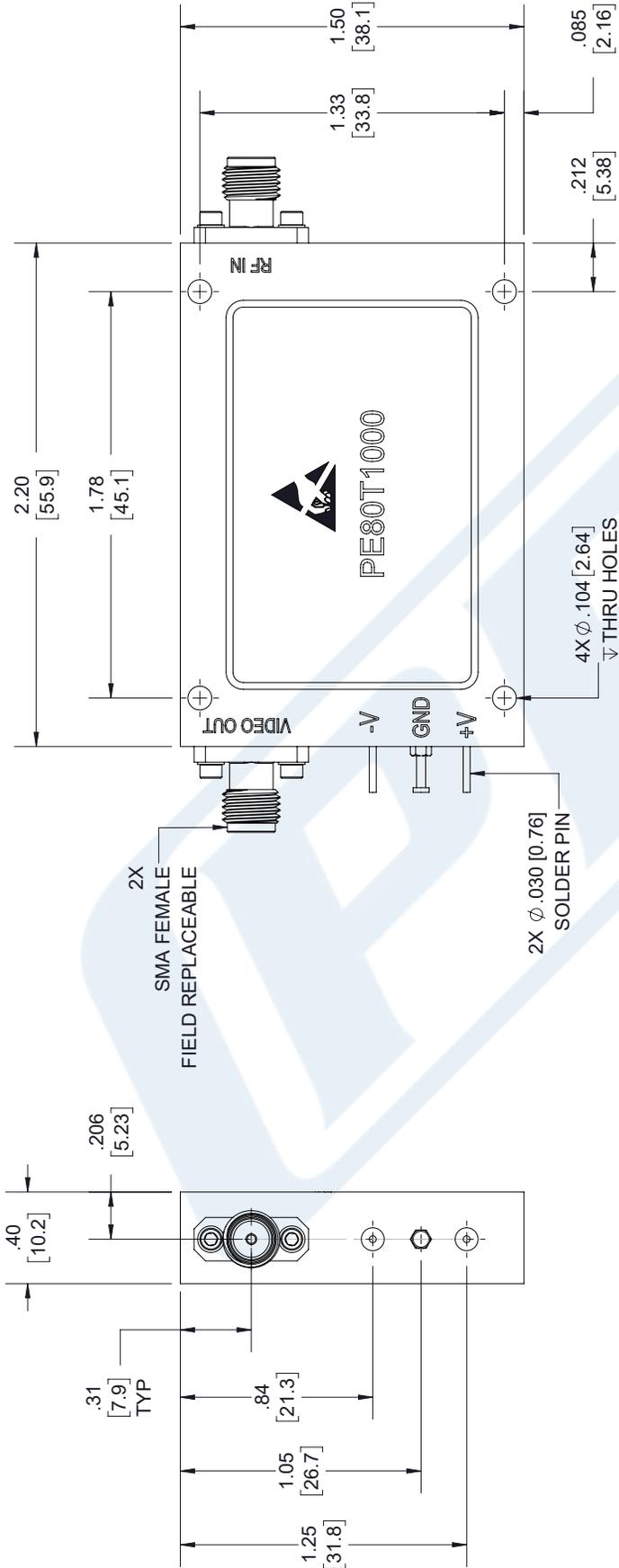
URL: <https://www.pasternack.com/sma-detector-15-propagation-2-18-ghz-pe80t1000-p.aspx>

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# PE80T1000 CAD Drawing

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1.1	PCR PE80T100 03282019	03/28/19	T. GALLA



UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS	
TOLERANCES:	FRACTIONS
X±.2	[5.08]
.XX±.01	[.25]
.XXX±.005	[.13]
ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.	
THIRD-ANGLE PROJECTION	

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SHEET 1 OF 1  
SCALE N/A

SIZE A  
CAGE NUMBER 53919  
DRAWN BY K.DANG  
PART NUMBER PE80T1000  
REV 1.1

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