

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

The SMD-0218-20-SMA 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 output pin supports a Field Replaceable SMA connector. This module is designed to meet MIL-STD-202F Environmental Conditions that includes Humidity, Shock, and Vibration.



Electrical Specifications

Description	Min	Typ	Max	Unit
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
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

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

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Mechanical Specifications

Size

Length	2.5 in [63.5 mm]
Width	2 in [50.8 mm]
Height	0.5 in [12.7 mm]
Weight	0.1055 lbs [47.85 g]
Connector 1	SMA Female
Connector 2	SMA Female
Pins	Solder Pin
Finish	Gold

Environmental Specifications

Temperature

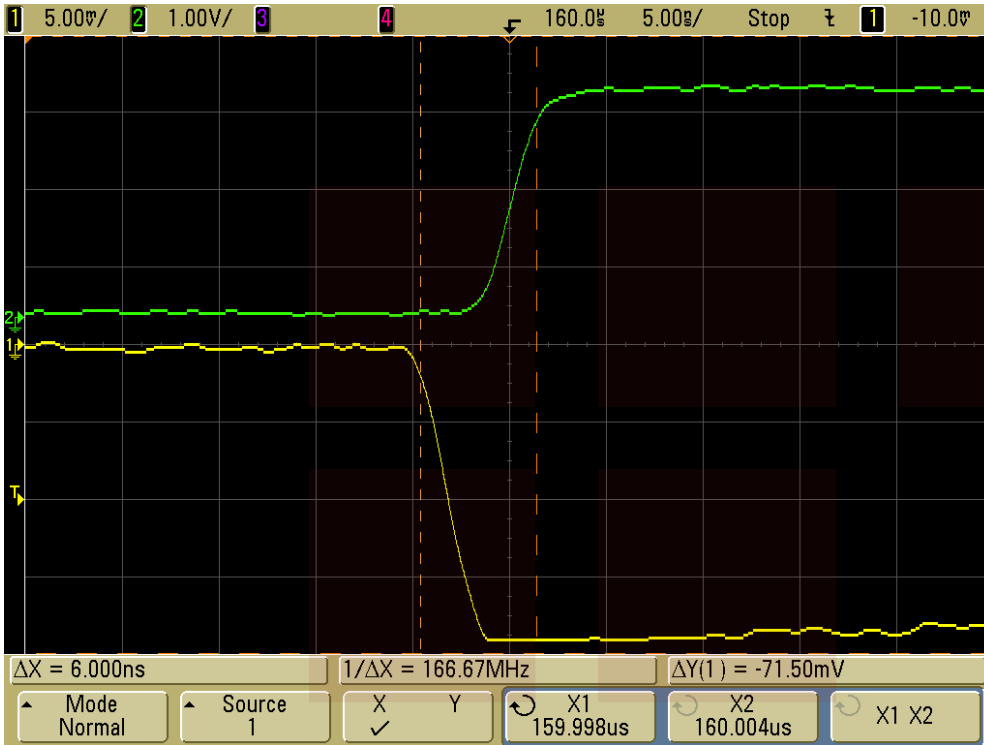
Operating Range	-55 to +85 deg C
Storage Range	-65 to +100 deg C
Temperature Cycle	MIL-STD-202F, METHOD 107D COND. A
Humidity	MIL-STD-202F, METHOD 103B COND. B
Shock	MIL-STD-202F, METHOD 213B COND. B
Vibration	MIL-STD-202F, METHOD 204D COND. B
Altitude	MIL-STD-202F, METHOD 105C COND. B

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

Plotted and Other Data

Notes:

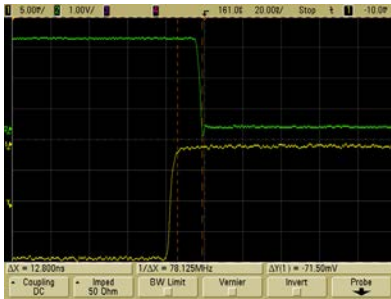
On Time 50 Ohm Load



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

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

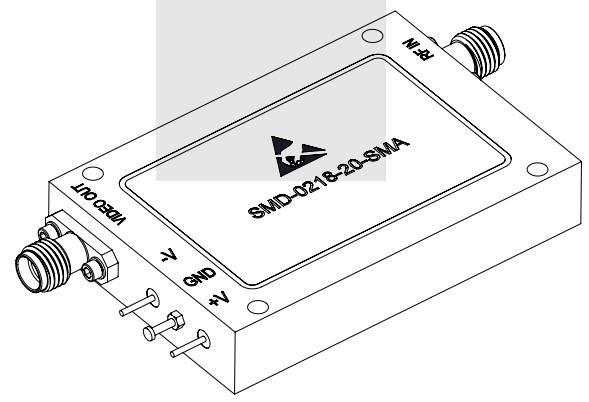
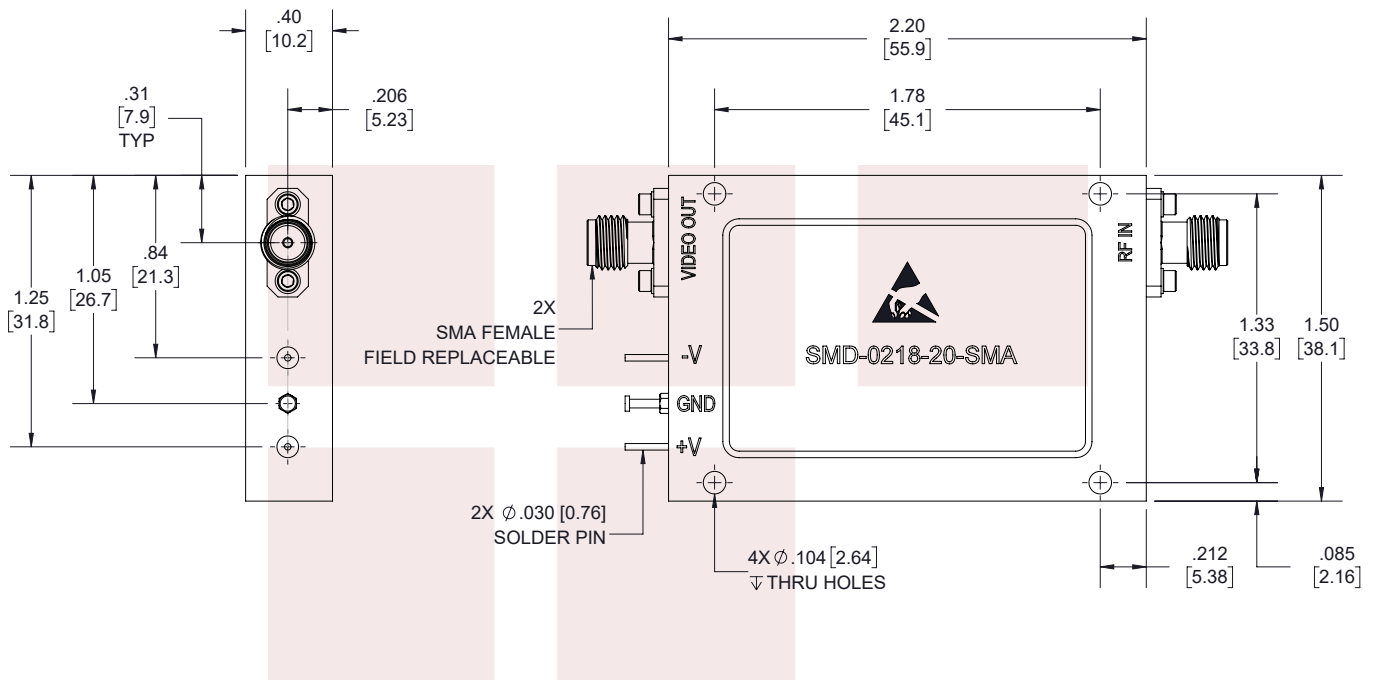
Off Time: Threshold Level is set for -20 dBm, which cannot be detected using the crystal detector, so the output does not start switching off until Channel 1 reaches virtually 0 V

Frequency Detector, 2 GHz to 18 GHz, SMA, Video Out, +10 dBm max Pin from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Frequency Detector, 2 GHz to 18 GHz, SMA, Video Out, +10 dBm max Pin SMD-0218-20-SMA](#)

URL: <https://www.fairviewmicrowave.com/frequency-detector-sma-female-2-18-ghz-smd-0218-20-sma-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



STANDARD TOLERANCES	
.X	±0.2
.XX	±0.01
.XXX	±0.005

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

<p>Fairview Microwave RF COMPONENTS ON DEMAND. <i>Done!</i></p>		<p>NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].</p>				
TITLE		DWG NO		CAGE CODE		
Frequency Detector, 2 GHz to 18 GHz, SMA, Video Out, +10 dBm max Pin		SMD-0218-20-SMA		3FKR5		
CAD FILE	03/28/19	SHEET	1 OF 1	SCALE	N/A	SIZE A 7361