

## Amplitude Detectors, SFD Series

### FEATURES:

- ◆ Frequency coverage: 18 to 170 GHz
- ◆ Broad or narrow band operation
- ◆ High sensitivity without tuning
- ◆ High stability over a broad temperature range



### APPLICATIONS:

- ◆ Radar systems
- ◆ Communication systems
- ◆ Test instrumentation

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### DESCRIPTION:

SFD series amplitude detectors are GaAs beam lead Schottky diode-based detectors with various RF and DC connector options to suit many different applications. With a distinct circuitry design and careful diode selection, these zero-biased detectors exhibit high sensitivity and extremely flat output characteristics.

The below standard offering covers the frequency range of 18 to 170 GHz and is designed to have a 10 MHz video bandwidth, 1 MΩ video output impedance, and an RF input power handling of up to +20 dBm. The relationship of the input power and detected output voltage is square root. A typical input power versus detected output voltage curve of a Ka band detector is shown below. The typical tangential sensitivity of the detector is -45 dBm. Check the website for more models.

### CATALOG MODELS:

Band	Model Number	Frequency Range (GHz)	Sensitivity (mV/mW)	Video Bandwidth (MHz)	Sensitivity Flatness (dB)	Output Voltage Polarity	Outline
K	SFD-183273-42SF-N1	18.0 to 26.5	1,300	10	±1.5	Negative	FD-K1
Ka	SFD-273403-28SF-N1	26.5 to 40.0	1,300	10	±1.5	Negative	FD-A1
Q	SFD-333503-22SF-N1	33.0 to 50.0	1,200	10	±1.5	Negative	FD-Q1
U	SFD-403603-19SF-N1	40.0 to 60.0	1,100	10	±1.5	Negative	FD-U1
V	SFD-503753-15SF-N1	50.0 to 75.0	1,000	10	±1.5	Negative	FD-V1
E	SFD-603903-12SF-N1	60.0 to 90.0	900	10	±2.0	Negative	FD-E1
W	SFD-753114-10SF-N1	75.0 to 110.0	800	10	±2.0	Negative	FD-W1
F	SFD-903144-08SF-N1	90.0 to 140.0	300	10	±2.0	Negative	FD-F1
D	SFD-114174-06SF-N1	110.0 to 170.0	300	10	±2.0	Negative	FD-D1

### CUSTOM MODELS:

SAGE Millimeter's amplitude detector model numbers are configured per the following format. Customers may refer to the format and specify their own model numbers accordingly when placing an order.

SFD - F1N F2N - CR CD - XY

F1N is the RF start frequency in MHz x 10N. For example: 40.0 GHz = 403

F2N is the RF stop frequency in MHz x 10N. For example: 55.0 GHz = 553

CR is the RF connector type. For example: WR-15 = 15

CD is the DC connector type. For example: SMA (F) = SF

X is the detector type. "N" is for a negative output and "P" is for a positive output.

Y is for factory reserve.

Example: SFD-203503-2MSF-P1 is an amplitude detector with a RF frequency range from 20 to 50 GHz. The amplitude detector has a male 2.4 mm connector as the RF connector, a female SMA connector as the DC connector, and a positive voltage output. "1" is a factory assigned number.

