

Balanced Mixers, SFB Series

FEATURES:

- ◆ Frequency coverage: 18 to 170 GHz
- ◆ Balanced configuration for low conversion loss
- ◆ Full waveguide band operation
- ◆ External bias option for low LO operation



APPLICATIONS:

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

DESCRIPTION:

SFB series balanced mixers are GaAs beam lead Schottky diode-based mixers. The balanced mixers employ a broadband circuitry and balanced structure to offer low conversion loss and harmonics for full waveguide band and broad IF bandwidth operations. An externally biased mixer option can be offered when the available LO power is low, particularly in the higher waveguide bands. The below standard offering covers the frequency range of 18 to 170 GHz. While these models focus on full bandwidth operations for most applications, custom models are available to meet specific application needs. Check the website for more models.

CATALOG MODELS:

Band	Model Number	RF & LO Frequency Range (GHz)	IF Frequency Range (GHz)	Conversion Loss (dB)	LO Power (dBm)	Port Isolation (dB)	Bias (V/mA)	Outline
K	SFB-42-N1	18.0 to 26.5	DC to 8.5	6.0	+10 to +13	15.0	N/A	FB-NK
Ka	SFB-28-N1	26.5 to 40.0	DC to 13.5	7.5	+10 to +13	15.0	N/A	FB-NA
Q	SFB-22-N1	33.0 to 50.0	DC to 17.0	7.0	+10 to +13	15.0	N/A	FB-NQ
Q	SFB-22-E2	33.0 to 50.0	DC to 17.0	9.0	+0 to +3	15.0	+5.0/1.0	FB-EQ-2
U	SFB-19-N1	40.0 to 60.0	DC to 20.0	8.0	+10 to +13	15.0	N/A	FB-NU
U	SFB-19-E2	40.0 to 60.0	DC to 20.0	9.0	+0 to +3	15.0	+5.0/1.0	FB-EU-2
V	SFB-15-N1	50.0 to 75.0	DC to 25.0	8.5	+10 to +13	15.0	N/A	FB-NV
V	SFB-15-E2	50.0 to 75.0	DC to 25.0	9.5	+0 to +3	15.0	+5.0/1.0	FB-EV-2
E	SFB-12-N1	60.0 to 90.0	DC to 30.0	9.0	+10 to +13	15.0	N/A	FB-NE
E	SFB-12-E2	60.0 to 90.0	DC to 30.0	10.0	+0 to +3	15.0	+5.0/1.0	FB-EE-2
W	SFB-10-N1	75.0 to 110.0	DC to 35.0	9.5	+10 to +13	15.0	N/A	FB-NW
W	SFB-10-E2	75.0 to 110.0	DC to 35.0	12.0	+0 to +3	15.0	+5.0/1.0	FB-EW-2
F	SFB-08-N1	90.0 to 140.0	DC to 40.0	11.0	+10 to +13	15.0	N/A	FB-NF
F	SFB-08-E2	90.0 to 140.0	DC to 20.0	13.0	+0 to +3	15.0	+5.0/2.0	FB-EF-2
D	SFB-06-N1	110.0 to 170.0	DC to 40.0	12.0	+10 to +13	15.0	N/A	FB-ND
D	SFB-06-E2	110.0 to 170.0	DC to 20.0	14.0	+0 to +3	15.0	+5.0/2.0	FB-ED-2

CUSTOM MODELS:

SAGE Millimeter's balanced mixer 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.

SFB - RFN LON CL - CR CO CI - XY

RFN is the RF center frequency in MHz x 10N. For example: 26.0 GHz = 263

LON is the LO center frequency in MHz x 10N. For example: 28.0 GHz = 283

CL is the small signal conversion loss in dB. For example: 8.5 dB = 09

CR is the RF port connector type. For example: WR-28 = 28

CO is the LO port connector type. For example: WR-22 = 22

CI is the IF port connector type. For example: SMA (F) = SF

X is the mixer type. "N" is for non-externally biased and "E" is for externally-biased.

Y is for factory reserve.

Example: SFB-33339309-2822SF-E2 is an externally biased balanced mixer with an RF center frequency of 33 GHz, an LO center frequency of 38.5 GHz and a conversion loss of 9 dB. The mixer has a WR-28 waveguide at the RF port, a WR-22 waveguide at the LO and a female SMA connector at the IF. "2" is a factory assigned number.