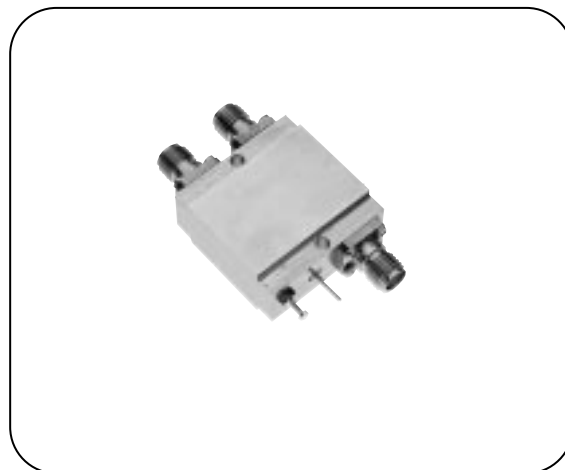


12 TO 15 GHz ULTRA-HIGH LEVEL FET MIXER

MODELS: SBF1215HI3A, SBF1215HI3B

FEATURES

- RF/LO coverage 12 to 15 GHz
- IF operation 20 to 2000 MHz
- LO power range +20 to +23 dBm
- Input IP³ +30 dBm typical
- Packaging Hermetically sealed

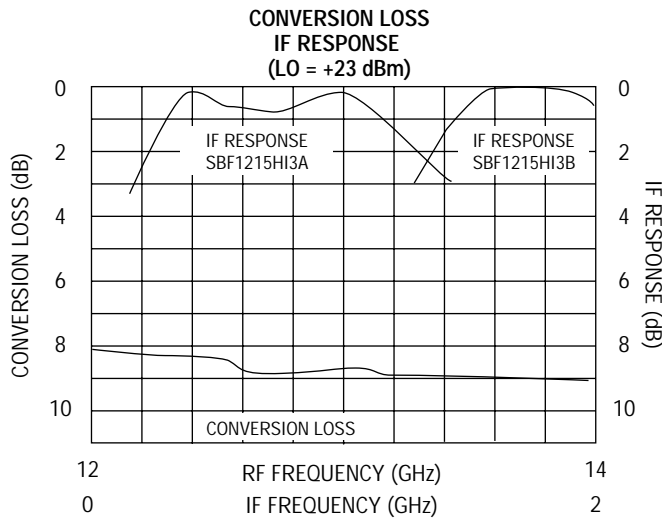
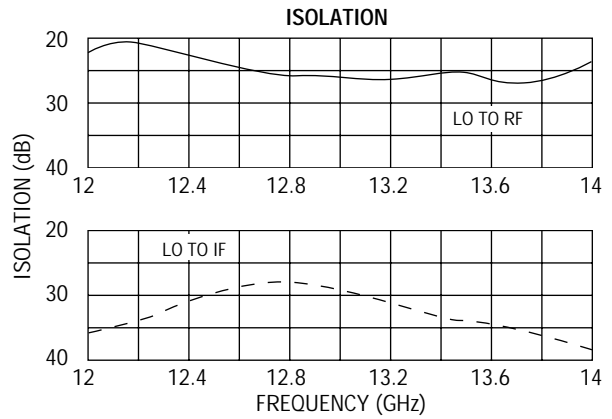
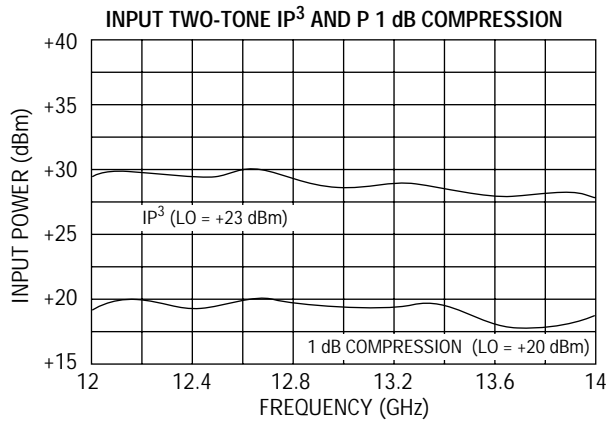


MITEQ's model SBF1215HI3 utilizes high-level MESFETs in a single-balanced mixer configuration to provide truly state-of-the-art dynamic range performance. Through MITEQ's unique balun design, the SBF1215H series is able to surpass the performance of any Schottky device by supporting 10 dB of separation between the LO power and third-order intercept point. Applications for this type of device span any dense signal environment system or any extremely high dynamic range receiver, such as a phase coherent receiver utilizing high-gain low-noise amplifiers.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	12		15
RF VSWR (RF = -10 dBm, LO = +23 dBm)		Ratio		2.5:1	
LO frequency range	SBF1215HI3A	GHz	12		15
LO < RF, only	SBF1215HI3B	GHz	6		10
LO power range		dBm	+20		+23
LO VSWR (RF = -10 dBm, LO = +13 dBm)		Ratio		3.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss	IF = 1 GHz	dB		8	9
Single-sideband noise figure		dB			10
Isolation – LO to RF		dB	20	30	
Isolation – LO to IF		dB		20	
Isolation – RF to IF		dB		30	
Input power at 1 dB compression	LO = +23 dBm	dBm		+20	
	LO = +20 dBm	dBm		+17	
Input two-tone third-order intercept point	LO = +23 dBm	dBm	+27	+30	
	LO = +20 dBm	dBm		+27	
Input two-tone second-order intercept point	LO = +23 dBm	dBm		+45	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range (3 dB bandwidth)	SBF1215HI3A	MHz	200		1200
	SBF1215HI3B	MHz	1400		2000
IF VSWR (RF = -10 dBm, LO = +23 dBm)		Ratio		1.2:1	

SBF1215HI3A/B TYPICAL DATA



**SINGLE-TONE SPUR LEVELS
RELATIVE (dBc) (RF = 0 dBm, LO = +23 dBm)**

RF (m) = 0 dBm	LO (n) = +23 dBm	Level (dBc)
2	2	-50
3	3	-65
3	4	-70
4	5	-90
5	6	-100
6	7	-130
6	8	-135
7	8	-155
7	9	-150
8	9	-170

MAXIMUM RATINGS

Specifications taken at +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

AVAILABLE OPTIONS

Alternate LO drive levels
 Alternate RF and IF frequencies
 Open substrate carrier versions

OUTLINE DRAWING

