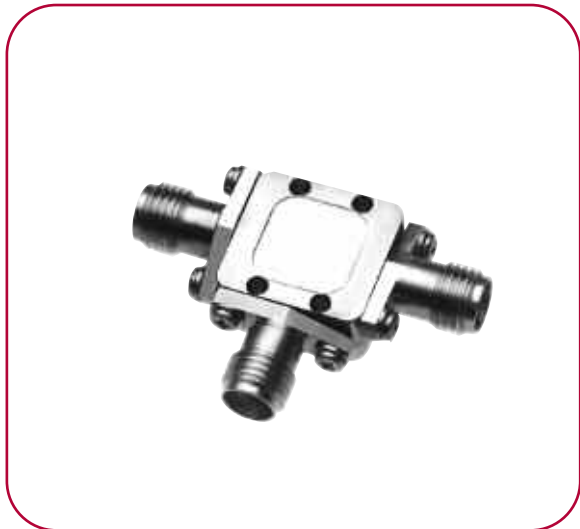


4 TO 40 GHz EVEN HARMONIC (1/2 LO) BALANCED MIXER

MODEL: SBE0440LW1

FEATURES

- RF coverage..... 4 to 40 GHz
- LO coverage 2 to 20 GHz
- IF operation..... DC to 1.5 GHz
- LO power range..... +10 to +15 dBm
- High carrier rejection of 30 dB typical when used as an upconverter



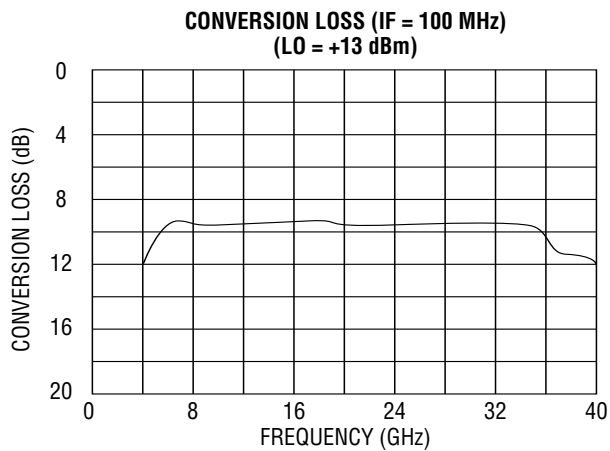
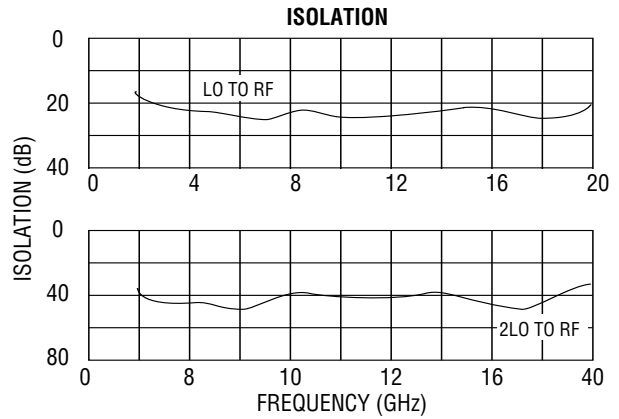
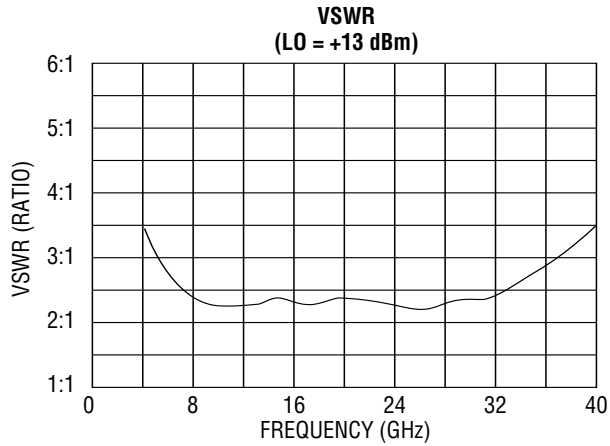
The SBE Series of mixers employs antiparallel ring diodes to achieve efficient RF-to-IF or IF-to-RF conversion using an LO at 1/2 the normal frequency. These units are particularly useful in miniature transceivers as upconverters, where high carrier rejection is desired without costly tunable filters or isolators.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	4		40
RF VSWR (RF = -10 dBm, LO = +13 dBm)	6 to 30 GHz 4 to 40 GHz	Ratio Ratio		2.5:1 3.5:1	
LO frequency range		GHz	2		20
LO power range		dBm	+10	+13	+15
LO VSWR (LO = +13 dBm)	2 to 20 GHz	Ratio		2.75:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz, LO = +13 dBm)	6 to 30 GHz 4 to 40 GHz	dB dB		9 10	11 12
LO-to-RF isolation	2 to 20 GHz	dB		20	
2LO-to-RF isolation	4 to 40 GHz	dB	30	40	
LO-to-IF isolation	2 to 20 GHz	dB		20	
RF-to-IF isolation	2 to 20 GHz	dB		15	
Input power at 1 dB compression	LO = +13 dBm	dBm		0	
Input two-tone third-order intercept point	LO = +13 dBm	dBm		+10	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range	3 dB bandwidth	GHz	DC		1.5
IF VSWR (IF = -10 dBm, LO = +13 dBm)		Ratio		2.75:1	



SBE0440LW1 TYPICAL TEST DATA



SINGLE-TONE (m) RF x (n) LO RELATIVE SPUR LEVEL (dBc)
(AVERAGE MIDBAND RF, LO, IF FREQUENCIES,
RF = -10 dBm, LO = +13 dBm)

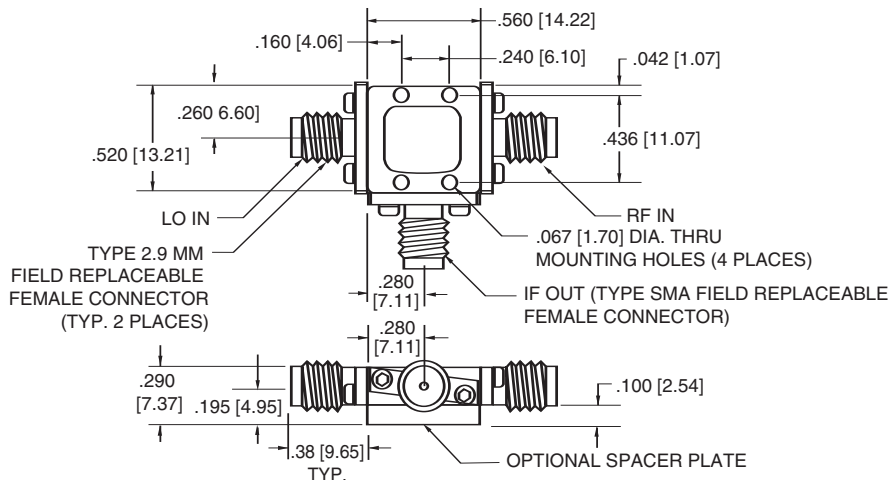
SPUR (m) RF x (n) LO	RF TEST FREQ. (GHz)	LO TEST FREQ. (GHz)	SPUR LEVEL (dBc)
1 x 1	10.75	11.25	-33
1 x 2	14.5	7.5	REF
1 x 3	16.36	5.62	-30
2 x 1	7.16	14.8	-45
2 x 2	10.87	11.12	-50
2 x 3	13.1	8.9	-45
3 x 1	5.37	16.6	-40
3 x 2	8.7	13.3	-40
3 x 3	10.91	11.08	-50

MAXIMUM RATINGS

Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

NOTE: Test data supplied at 25°C; conversion loss and 2LO-to-RF isolation.

OUTLINE DRAWING



NOTE: All dimensions shown in brackets [] are in millimeters.

