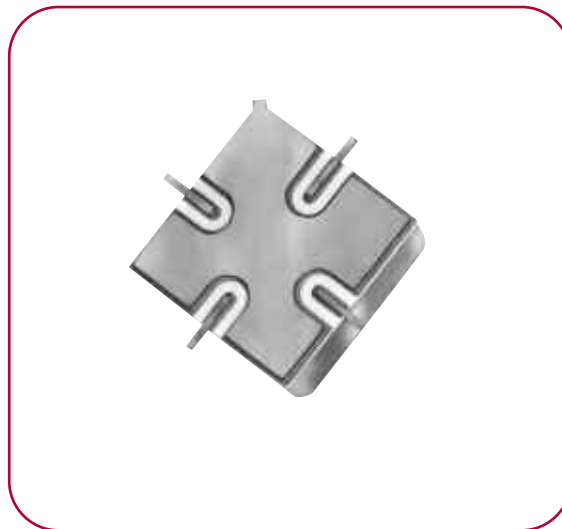


1.8 GHz, 1 WATT, MESFET POWER MIXER

MODEL: DBF1800W3

FEATURES

- RF/LO coverage 1.7 to 1.9 GHz
- Input IP³ +40 dBm @ +30 dBm LO
+36 dBm @ +26 dBm LO
+30 dBm @ +20 dBm LO
- IF response 50 to 200 MHz
- Packaging Surface mount or microstrip



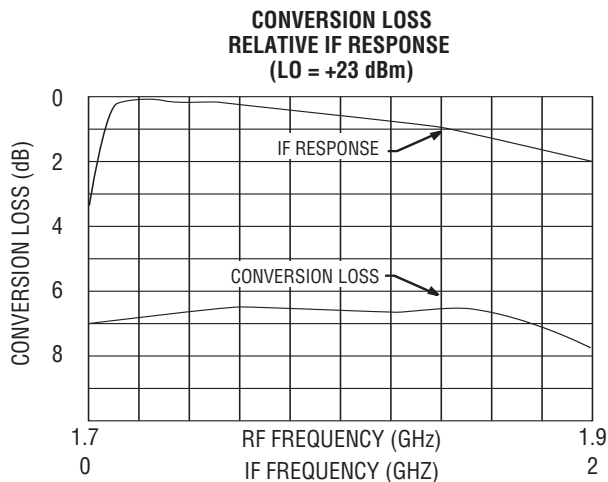
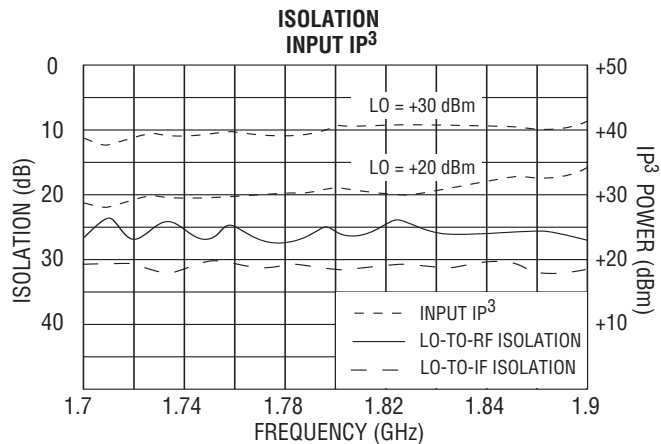
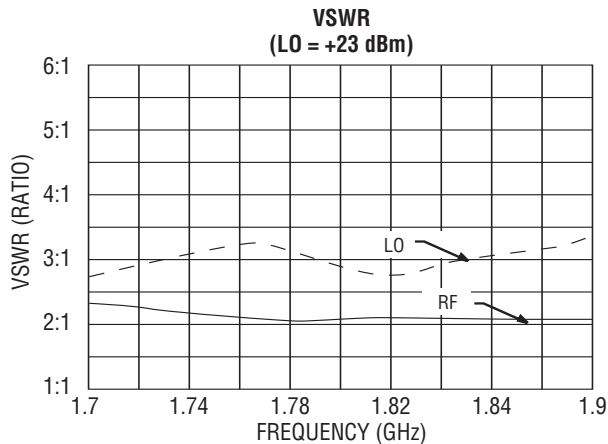
As the density of signals in a receiver increase, the input IP³ rather than noise figure of the front end begins to limit the dynamic range. This is particularly true for the newer fixed-tuned LO wideband RF “block” downconverters that utilize digital IF circuits to separate and demodulate each user of the channel. The digital filters can often process closely spaced signals that are 60 or 80 dB different in power, thus requiring similar rejection of spurious mixer outputs. This double-balanced mixer uses power MESFETs to achieve an input 1 dB compression point of +30 dBm (+10 volt peak RF) using an equal power LO. The corresponding input IP³ is +40 dBm (10 watts), thus permitting an 80 dB dynamic range with 0 dBm RF inputs. The corresponding noise figure and IF corner frequency are 8.7 dB and 50 kHz, respectively.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	1.7		1.9
RF VSWR (RF = -10 dBm, LO = +23 dBm)		Ratio		1.5:1	
LO frequency range		GHz	1.7		1.9
LO power range		dBm	+23		+26
LO VSWR (LO = +23 dBm)		Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss	IF = 1 GHz	dB		8.5	9.5
Single-sideband noise figure at 25°C		dB		9	10
LO-to-RF isolation		dB	20	28	
LO-to-IF isolation		dB	25	30	
RF-to-IF isolation	RF < LO	dB		20	
Input power at 1 dB compression	LO = +25/+30 dBm	dBm		+20/+30	
Input two-tone third-order intercept point	LO = +26 dBm	dBm		+36	
Input two-tone second-order intercept point	LO = +26 dBm	dBm		+50	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range		MHz	20		200
IF VSWR (IF = -10 dBm, LO = +23 dBm)		Ratio		2:1	



DBF1800W3 TYPICAL TEST DATA



SINGLE-TONE (m) RF x (n) LO RESPONSE SPUR LEVEL (dBc) TO REF (RF = -10 dBm, LO = +26 dBm)

5	> 100	-	-	-	-
4	> 100	> 100	> 100	-	-
3	82	95	> 100	> 100	> 100
2	68	70	80	80	85
1	REF	OUT-OF-BAND			
	1	2	3	4	5

RF HARMONIC (m)

LO HARMONIC (n)

MAXIMUM RATINGS

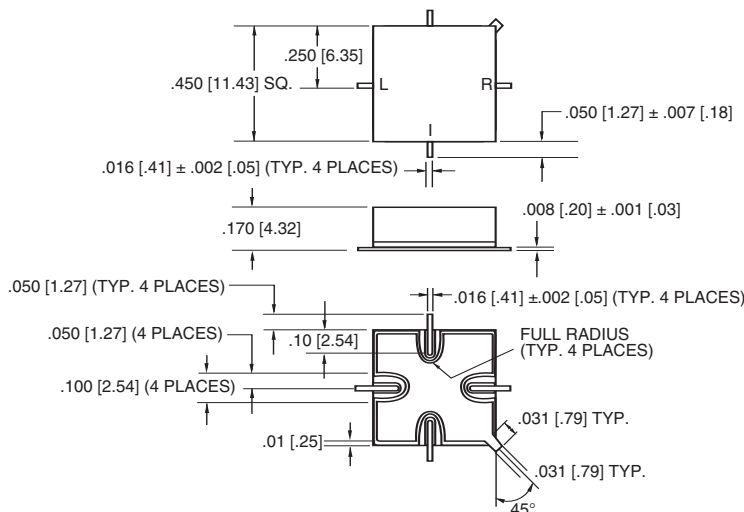
Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

GENERAL NOTE

1. Unit must be heatsinked when operating above +26 dBm LO power.

NOTE: Test data supplied at 25°C; conversion loss, LO-to-RF isolation and IP³.

OUTLINE DRAWING



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

