2 TO 18 GHz MESFET SAMPLING MIXER

MODEL: SRD0218LW4

FEATURES

- **RF Coverage ..... 2 to 18 GHz**
- **LO Coverage ..... 0.8 to 1.3 dBm**
- **Low intermodulation vs. Schottky diode versions**
- **Built-in LO and IF amplifiers**
- **Temperature and LO power insensitive**

Sampling mixers are often employed to lock a coarse-tuned microwave source to a phase-stable UHF source without the need for costly intermediate microwave reference LO sources. The wide IF bandwidth of the SRD0218W4 permits rapid RF frequency changes. A second fixed-frequency phase detector can be used to extract DC-locking voltages. In a similar manner, MITEQ's SRD Series is also useful as an inexpensive downconverting receiver by utilizing any of the 2 to 18th harmonics of a 1 GHz LO input at +10 dBm.

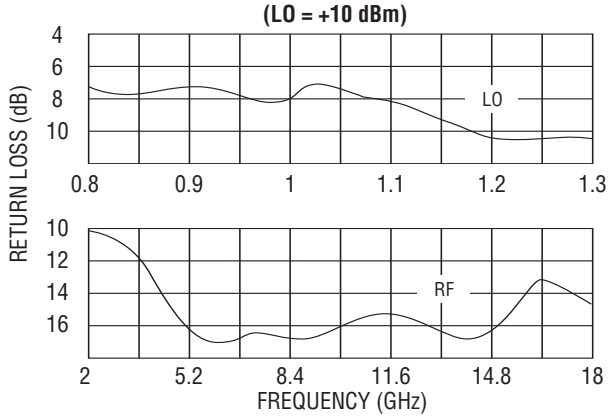
ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	2		18
RF VSWR (RF = -10 dBm, LO = +10 dBm)		Ratio		2:1	3:1
LO frequency range		GHz	0.8		1.3
LO power range		dBm	+10	+13	+17
LO VSWR (RF = -10 dBm, LO = +10 dBm)		Ratio		2:1	3:1
DC power supply	+15 VDC	mA			100
TRANSFER CHARACTERISTICS	**CONDITION**	**UNITS**	**MIN.**	**TYP.**	**MAX.**
Conversion gain (including temp. & LO power)		dB	-10		+3
Single-tone intermodulation products	2RF ±n LO 3RF ±n LO	dBc dBc	-20 -30	-30 -50	-40 -60
All spurious outputs relative to -10 dBm input		dBc		-55	
LO-to-RF isolation		dB	20	25	
IF output power at 1 dB compression	LO = +10 dBm	dBm		+10	
OUTPUT PARAMETERS	**CONDITION**	**UNITS**	**MIN.**	**TYP.**	**MAX.**
IF frequency range		GHz	0.1		0.4
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	

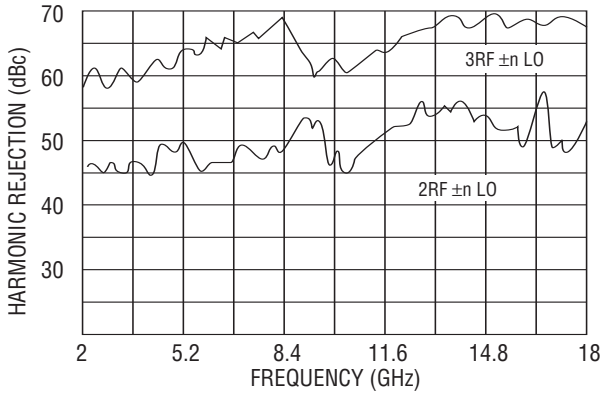
MIXER PRODUCTS

SRD0218LW4 TYPICAL TEST DATA

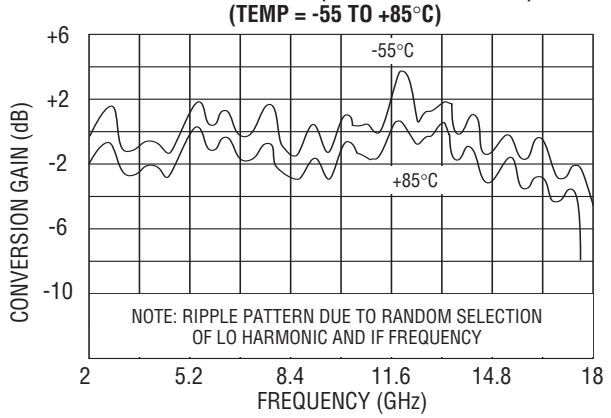
RETURN LOSS
(LO = +10 dBm)



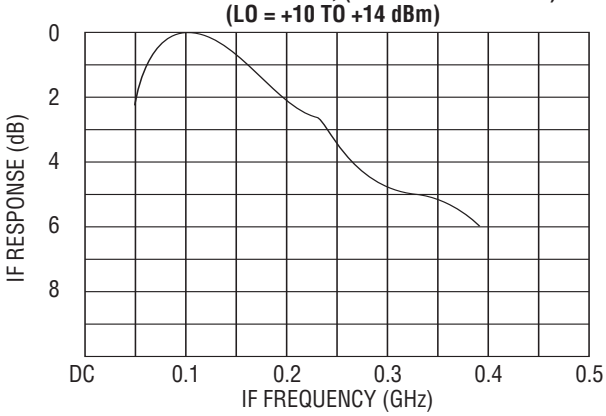
2nd AND 3rd HARMONIC REJECTION
AT -10 dBm RF INPUT @ 25°C



CONVERSION GAIN (LO = +10 TO +14 dBm)
(TEMP = -55 TO +85°C)



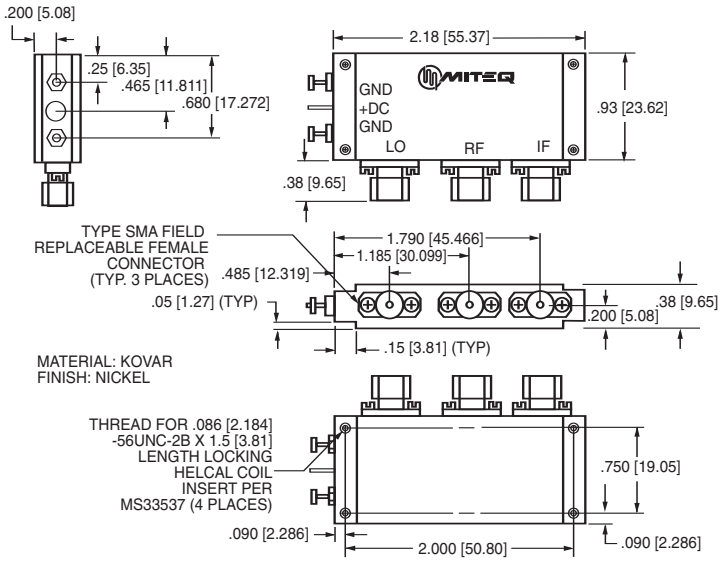
RELATIVE IF RESPONSE, (TEMP = -55 TO +85°C)
(LO = +10 TO +14 dBm)



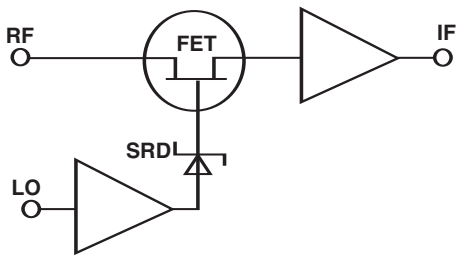
MAXIMUM RATINGS

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

OUTLINE DRAWING



BLOCK DIAGRAM



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

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