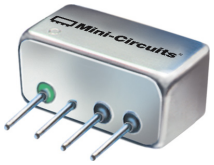
Plug-In

Frequency Mixer

Level 7 (LO Power +7 dBm) 1 to 2000 MHz

TFM-11+



CASE STYLE: B13

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

LO	4
RF	1
IF	2
GROUND	3
CASE GROUND	3

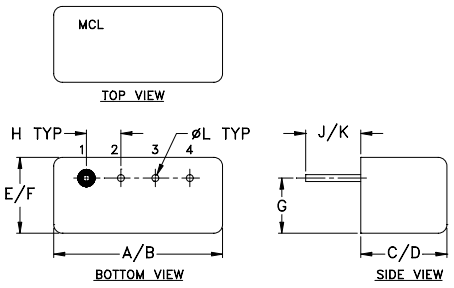
Features

- low conversion loss, 7.16 dB typ.
- wideband, 1 to 2000 MHz
- rugged welded construction
- hermetically sealed

Applications

- cellular
- PCS
- instrumentation

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F
.480	.500	.390	.405	.210	.230
12.19	12.70	9.91	10.29	5.33	5.84
G	**H**	**J**	**K**	**L**	**wt**
.16	.100	.14	.20	.020	grams
4.06	2.54	3.56	5.08	0.51	2.3

Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)					
LO/RF	IF	Mid-Band m			Total Range	L		M		U		L		M		U	
f_L-f_U		$\overline{X}$	σ	Max.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
1-2000	5-600	7.16	0.07	8.5	9.0	50	45	35	25	25	20	45	40	27	20	25	20

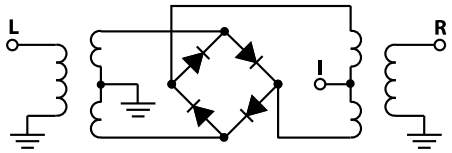
1 dB COMP.: +1 dBm typ.

L = low range [f_L to 10 f_L] m= mid band [2f_L to f_U/2] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U]

Typical Performance Data

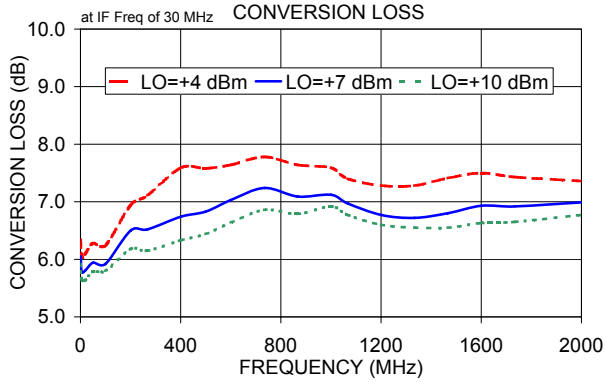
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1.00	31.00	6.05	60.95	56.30	2.34	2.51
5.00	35.00	5.78	61.86	55.70	2.49	2.42
20.00	50.00	5.81	61.93	55.12	2.44	2.46
50.00	80.00	5.94	60.22	54.24	2.54	2.19
100.00	70.00	5.92	56.59	50.92	2.88	2.23
200.00	170.00	6.50	48.94	44.33	3.21	2.18
267.53	237.53	6.52	45.81	41.60	3.60	1.98
400.80	370.80	6.74	42.38	38.67	3.74	1.88
500.00	470.00	6.83	41.61	36.88	3.84	1.82
600.70	570.70	7.03	40.10	36.28	3.52	1.69
733.96	704.29	7.24	39.39	34.20	3.24	1.51
867.23	837.52	7.09	39.07	31.66	3.00	1.37
1000.00	969.69	7.12	36.76	29.17	2.77	1.24
1067.10	1037.50	6.97	35.43	28.56	2.54	1.14
1200.40	1170.40	6.77	33.71	27.07	2.23	1.13
1333.70	1303.60	6.72	32.82	25.51	2.13	1.39
1466.90	1436.90	6.80	33.13	24.22	2.16	1.67
1600.20	1570.50	6.93	32.34	23.42	2.27	2.36
1733.50	1703.70	6.92	29.41	27.19	2.54	2.01
2000.00	1970.30	6.99	30.47	25.17	2.89	1.93

Electrical Schematic

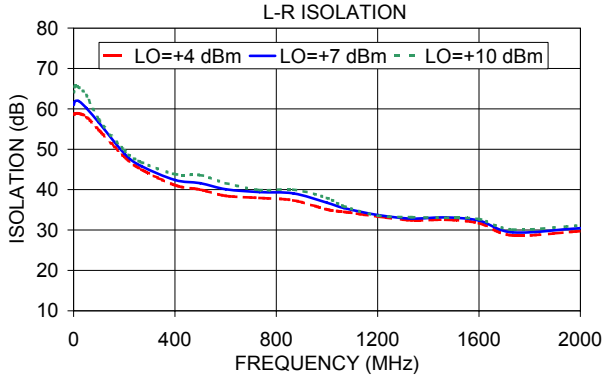


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

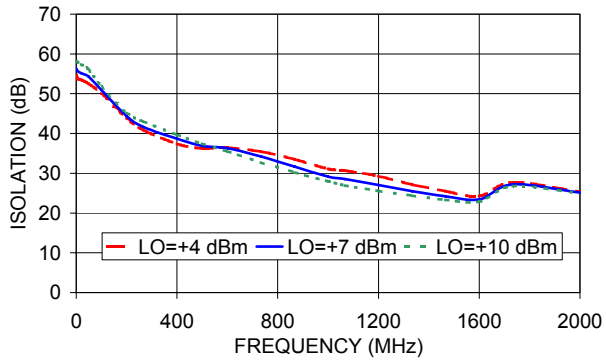
TFM-11
at IF Freq of 30 MHz CONVERSION LOSS



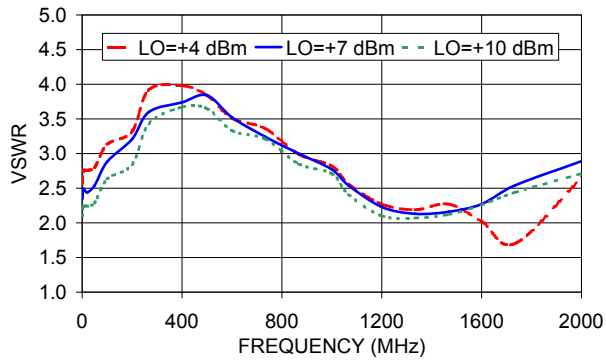
TFM-11
L-R ISOLATION



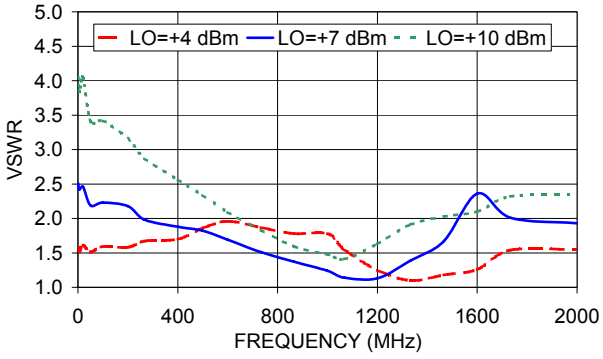
TFM-11
L-I ISOLATION



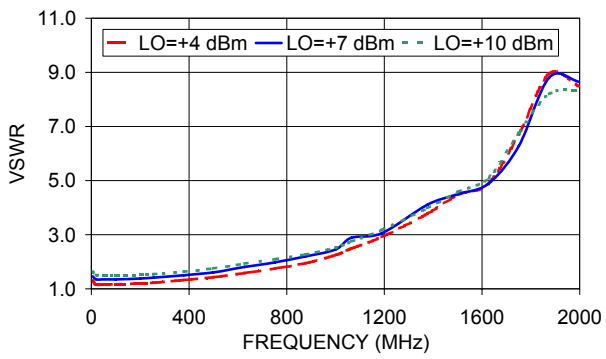
TFM-11
RF VSWR



TFM-11
LO VSWR



TFM-11
IF VSWR



Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp