

Plug-In

Frequency Mixer

TSM-3+

Level 7 (LO Power +7 dBm) 0.1 to 500 MHz



CASE STYLE: A11

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	8
RF	1
IF	3,4 [^]
GROUND	2,5,6,7
CASE GROUND	2

[^] pins must be connected together externally

Features

- low conversion loss, 4.75 dB typ.
- high L-R isolation, 50 dB typ., L-I isolation, 45 dB typ.
- rugged welded construction
- hermetically sealed

Applications

- VHF/UHF
- FM radio
- defense & federal communications

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

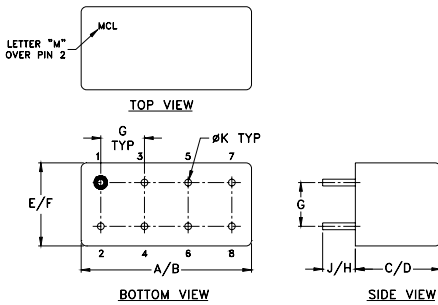
Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)					
LO/RF f_L - f_U	IF	Mid-Band m		Total Range Max.	Total Range Max.	L		M		U		L		M		U	
		\bar{X}	σ			Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
0.1-500	DC-500	4.75	0.04	7.5	8.5	60	50	50	35	35	25	55	45	45	30	35	25

1 dB COMP.: +1 dBm typ.

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

Outline Drawing



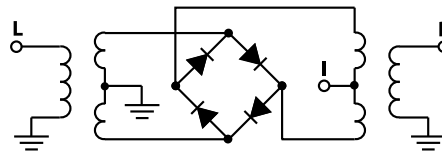
Outline Dimensions (inch/mm)

A	B	C	D	E	F
.480	.500	.240	.255	.210	.230
12.19	12.70	6.10	6.48	5.33	5.84
G	H	J	K		wt
.100	.20	.14	.020		grams
2.54	5.08	3.56	0.51		1.9

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)	
	LO	+7dBm	LO	+7dBm	LO	+7dBm	LO	+7dBm	LO	+7dBm
	RF	LO	RF	LO	RF	LO	RF	LO	RF	LO
0.10	30.10	5.74	>67.00	>67.00	1.11	2.55				
0.20	30.20	5.22	>67.00	>67.00	1.11	2.49				
0.50	30.50	4.98	>67.00	>67.00	1.11	2.41				
1.00	31.00	4.89	>67.00	>67.00	1.09	2.51				
2.00	32.00	4.86	>67.00	>67.00	1.09	2.51				
5.00	35.00	4.82	>67.00	>67.00	1.09	2.40				
10.00	40.00	4.86	>67.00	>67.00	1.08	2.27				
20.00	50.00	4.94	58.85	58.01	1.07	2.30				
41.47	71.47	4.85	51.90	51.69	1.06	2.31				
55.26	85.26	4.89	49.48	49.53	1.05	2.30				
100.00	70.00	4.79	44.78	44.91	1.05	2.30				
151.79	121.79	4.81	41.85	41.77	1.04	2.30				
200.00	170.00	5.01	39.70	39.48	1.04	2.30				
220.74	190.74	5.05	39.83	38.88	1.05	2.36				
248.32	218.32	5.02	39.44	38.41	1.06	2.38				
303.48	273.48	5.11	36.66	36.25	1.08	2.40				
331.06	301.06	5.25	36.60	36.25	1.11	2.46				
358.64	328.64	5.48	36.34	35.29	1.14	2.47				
386.22	356.22	5.50	36.21	33.15	1.17	2.52				
400.00	370.00	5.52	36.19	32.27	1.20	2.58				

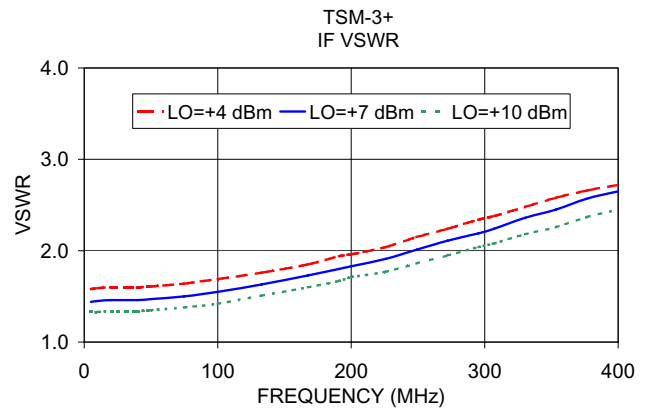
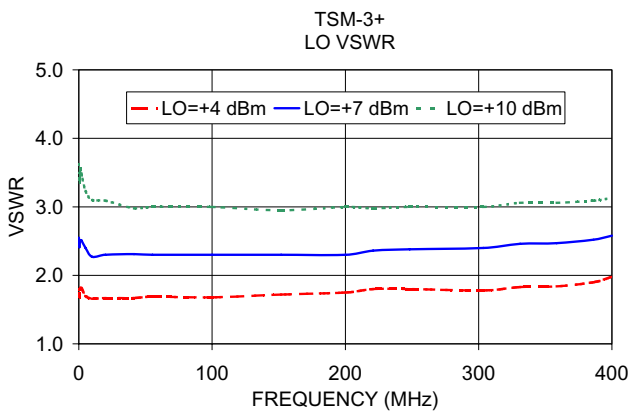
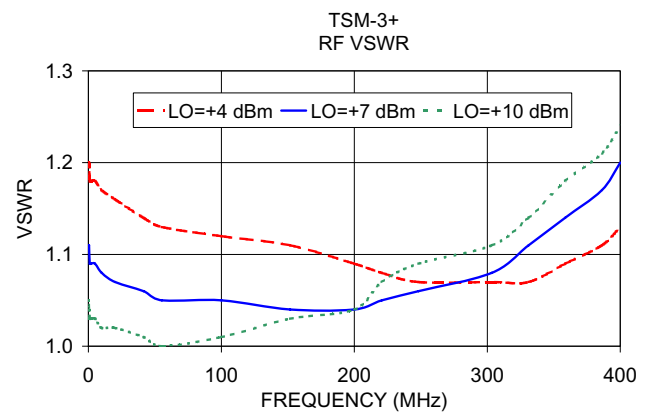
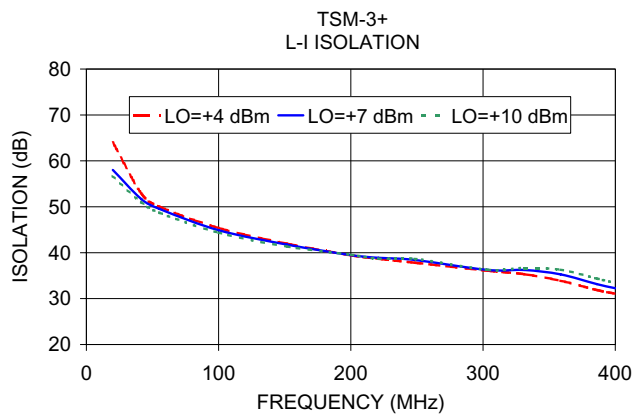
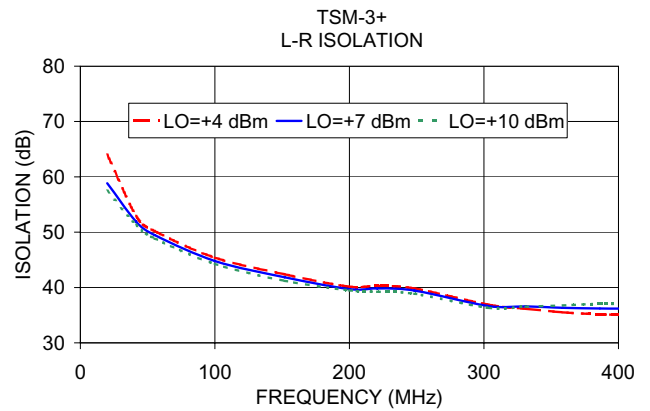
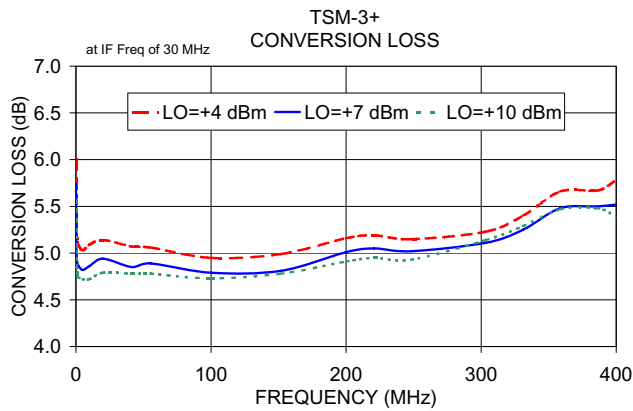
Electrical Schematic



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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





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

