

Wideband Load Insensitive Mixer

Rev. V3

Features

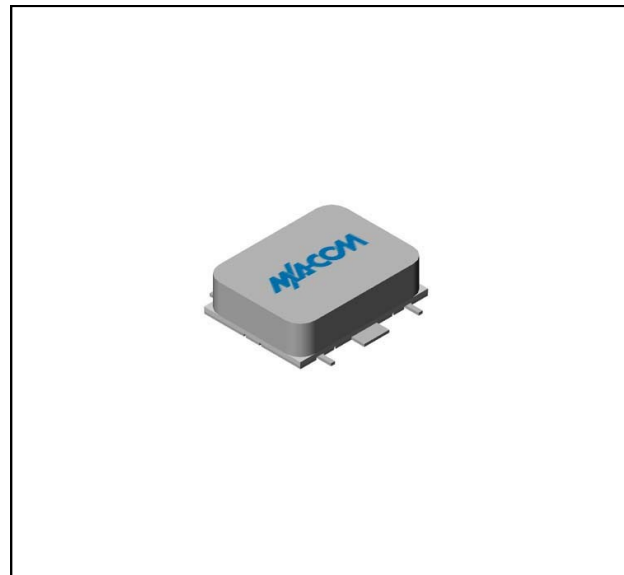
- LO 50 TO 5000 MHz
- RF 50 TO 5000 MHz
- IF 50 TO 3000 MHz
- LO Drive +10 dBm (Nominal)
- Insensitive to System Load Mismatch
- High Intercept: +18 dBm

Description

The SM5T is a termination insensitive mixer, designed for use in military, wireless and test equipment applications. The design utilizes Schottky bridge quad diodes, broadband ferrite baluns and internal loads to provide excellent performance without degradation due to external VSWR mismatches.

Environmental screening available to MIL-STD-883, MIL-STD-202 or MIL-DTL-28837, consult factory.

Product Image



Ordering Information

Part Number	Package
SM5T	Surface Mount

Electrical Specifications: $Z_0 = 50 \Omega$, $L_o = +10$ dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-40° to 85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	$f_R = 0.05$ to 1.5 GHz, $f_L = 0.05$ to 1.5 GHz, $f_I = 0.05$ to 1.5 GHz	dB	6.9	8.3	9.0
	$f_R = 1.5$ to 3.0 GHz, $f_L = 1.5$ to 3.0 GHz, $f_I = 0.05$ to 3.0 GHz	dB	7.5	8.8	9.5
	$f_R = 3.0$ to 5.0 GHz, $f_L = 3.0$ to 5.0 GHz, $f_I = 0.05$ to 3.0 GHz	dB	8.5	10.5	11.2
Isolation, L to R (min)	$f_L = 0.05$ to 1.0 GHz	dB	35	25	23
	$f_L = 1.0$ to 5.0 GHz	dB	33	23	21
Isolation, L to I (min)	$f_L = 0.05$ to 1.0 GHz	dB	40	32	30
	$f_L = 1.0$ to 5.0 GHz	dB	35	25	23
Isolation, R to I (min)	$f_R = 0.05$ to 5.0 GHz	dB	32		
1 dB Conversion Comp.	$f_L = +10$ dBm	dBm	+7		
Input IP3	$f_L = 0.05$ to 5.0 GHz, $f_R = 0.05$ to 5.0 GHz, $f_I = 0.05$ to 3.0 GHz	dBm	+18		
VSWR	R-Port $f_R = 0.05$ to 5.0 GHz, L-Port $f_L = 0.05$ to 5.0 GHz, I-Port $f_I = 0.05$ to 3.0 GHz		1.8:1 1.6:1 1.4:1		

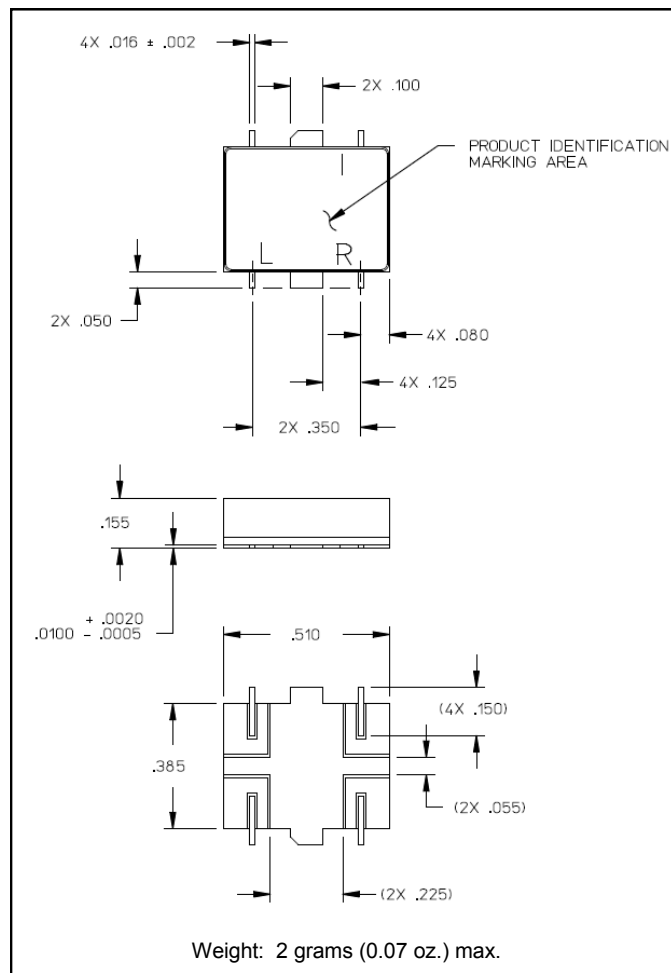
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Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+20 dBm @ +25°C +17 dBm @ +100°C
Peak Input Current	50 mA DC

Outline Drawing: Surface Mount *



* Dimensions are inches (millimeters) ± 0.015 (0.38) unless otherwise specified.