

## Double-Balanced Mixer

Rev. V2

### Features

- LO 0.05 TO 200 MHz
- RF 0.05 TO 200 MHz
- IF DC TO 200 MHz
- LO DRIVE +7 dBm (nominal)
- HIGH ISOLATION 45 dB (TYP.)

### Description

The SM6D is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.



### Ordering Information

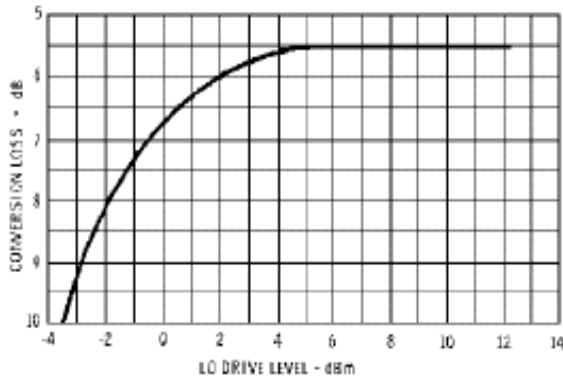
Part Number	Package
SM6D	Surface Mount

### Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +7$ dBm (Downconverter application only)

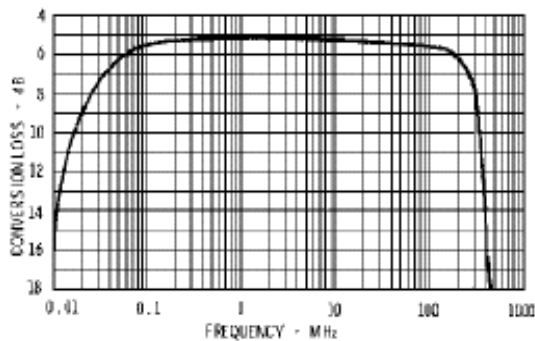
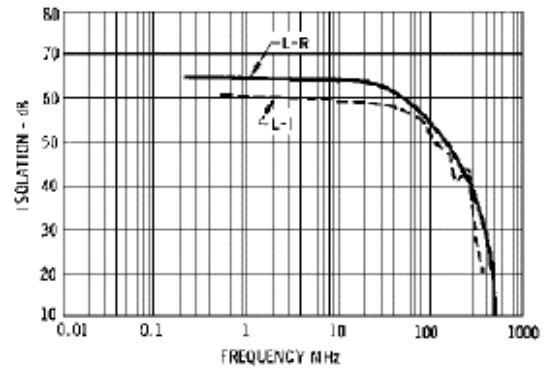
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR=0.0002 to 0.05 GHz, fL=0.0002 to 0.05 GHz, fl=0.0002 to 0.05 GHz	dB	5.5	6.5	7.0
	fR = 0.05 to 0.2 GHz, fL = 0.05 to 0.2 GHz, fl = 0.05 to 0.2 GHz	dB	7.5	8.0	8.5
	fR=0.00005 to 0.000 GHz, fL=0.00005 to 0.000 GHz,	dB	8.0	8.5	9.0
	fl=0.00005 to 0.0002 GHz	dB			
Isolation, L to R (min)	fL = 0.00005 to 0.03 GHz	dB	60	45	43
	fL = 0.03 to 0.2 GHz	dB	45	35	33
Isolation, L to I (min)	fL = 0.00005 to 0.03 GHz	dB	55	40	38
	fL = 0.03 to 0.2 GHz	dB	40	30	28

### Typical Performance Curves

**Conversion Loss**



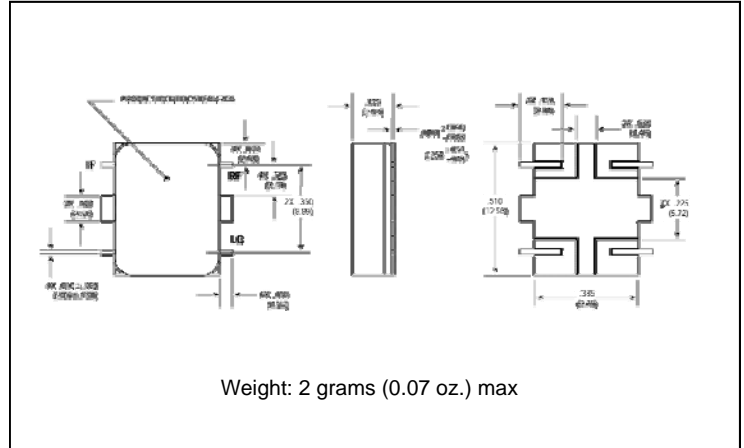
**Isolation**



### Absolute Maximum Ratings

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

### Outline Drawing: Surface Mount \*



\* Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.