# M63 / M63C

# **Double-Balanced Mixer**



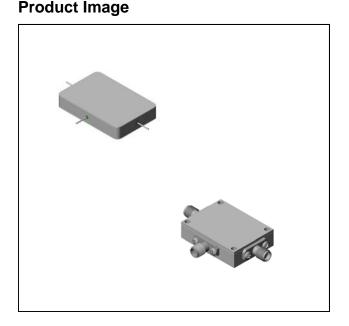
Rev. V3

#### Features

- LO 2.5 TO 7 GHz
- RF 2.5 TO 5.5 GHz
- IF DC TO 1.5 GHz
- LO DRIVE: +9 dBm (NOMINAL)
- LOW NOISE FIGURE: 5.8 dB (TYP.)

#### Description

The M63 is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and 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. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.



## **Ordering Information**

Part Number	Package	
M63	Minpac	
M63C	SMA Connectorized	

### Electrical Specifications: $Z_0 = 50\Omega$ Lo = +9 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter				+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Fig- ure (max)	fR = 3.0 to 5.0 GHz, fL = 3.0 to 5.5 GHz, fI = 0.03 to 0.5 GHz fR = 2.5 to 5.5 GHz, fL = 2.5 to 7 GHz, fI = 0.03 to 1.5 GHz	dB dB	5.0 5.8	6.0 7.0	6.5 7.5
Isolation, L to R (min)	fL = 2.5 to 7 GHz	dB	40	30	28
Isolation, L to I (min)	fL = 2.5 to 3.5 GHz fL = 3.5 to 7 GHz	dB dB	25 30	17 20	15 18
1 dB Conversion Comp.	fL = +9 dBm	dBm	+2		
Input IP3	fR1=4.00 GHz at -10 dBm,fR2=4.01GHz at -10 dBm, fL = 22.8 GHz at = +9 dBm	dBm	+11		

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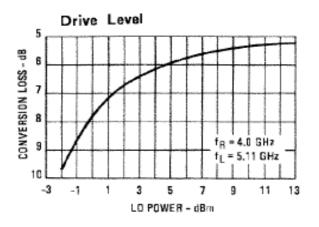
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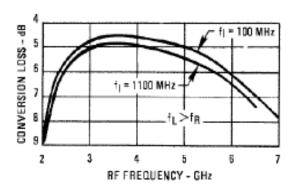


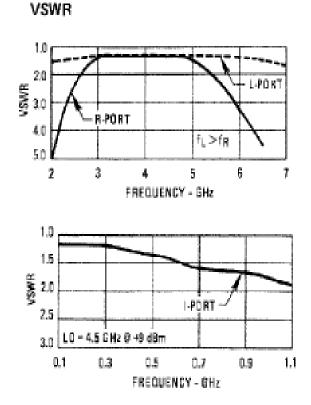
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### **Typical Performance Curves**

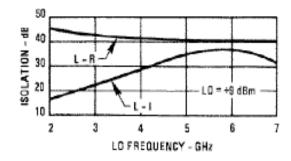


#### Conversion Loss





#### Isolation





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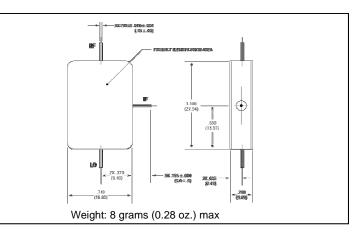
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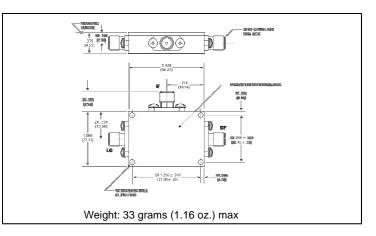
## **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Operating Temperature	-54ºC to +100ºC	
Storage Temperature	-65°C to +100°C	
Peak Input Power	+23 dBm max @ +25⁰C dBm max @ +100⁰C	
Peak Input Current	100 mA DC	

# Outline Drawing: Minpac \*



# Outline Drawing: SMA Connectorized \*



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

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