

**Ultra Low Loss Isolator**  
860 MHz — 960 MHz

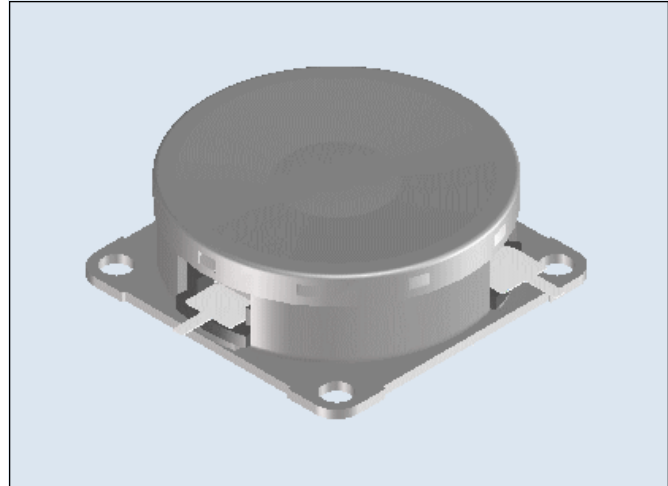
**MAFRIN0448**  
Version 02

**Features**

- <0.1 dB Insertion Loss
- Designed for wireless base station market
- 25 dB Isolation typical
- Low cost 31.75mm Drop-In package
- RoHs Compliant

**Description**

This circulator is designed specifically for wireless base station applications and features high reliability performance at a low cost. It is in a low cost package ideally suited for high volume manufacturing. M/A-Com is one of the largest suppliers of isolators and circulators in the world.



**Electrical Specifications:  $T_A = +25^\circ\text{C}$ ,  $Z_0 = 50 \text{ Ohms}$**

Parameter	Test Conditions	Units	Minimum	Typical	Maximum
Frequency Range	Over $T_{op}^1$	MHz	860		960
Insertion Loss	Over $T_{op}^1$	dB		0.08	0.1
Isolation	Over $T_{op}^1$	dB	23.0	25.0	
Return Loss	Over $T_{op}^1$	dB	22.0	25.0	
Intermodulation Product	IM3, 2 tones, 30 Watts each over $T_{op}^1$ (see table) IM5, 2 tones, 30 Watts each over $T_{op}^1$	dBc			
Harmonics	1 tone @ 30 Watts of $T_{op}^1$	dBc			
Insertion Delay	@ 883MHz, Test Fixture	Degree			
Delay	Test Fixture Removed	nSec			
Circulation	Over $T_{op}^1$			CW	

1. See "Absolute Maximum Ratings" for  $T_{op}$ .

**Absolute Maximum Ratings:**

Parameter	Absolute Maximum
Forward Power	200 Watts
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +100°C

1. Operation of this device above any one of these parameters may cause permanent damage.

**Ordering Information**

Part Number	Packaging
MAFRIN0448	Flat Pack

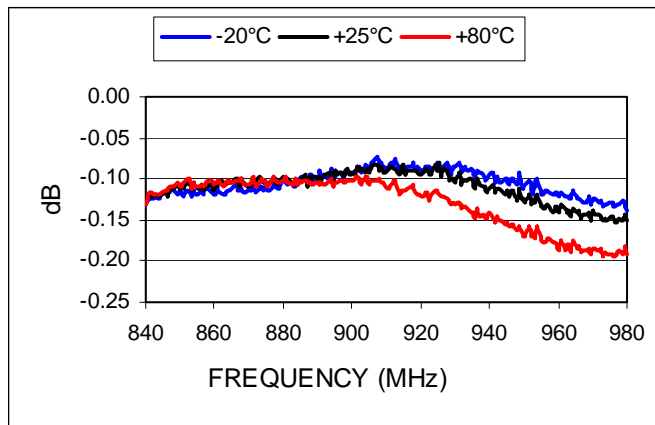
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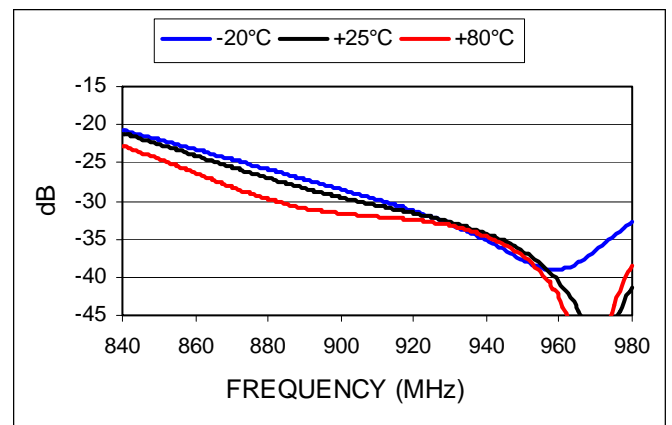
- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

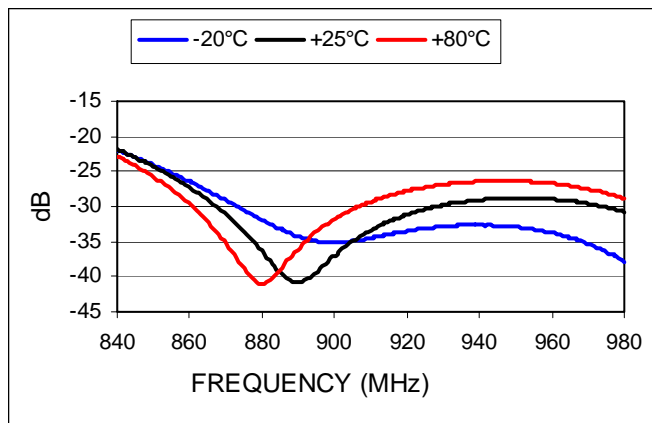
**Insertion Loss (S21)**



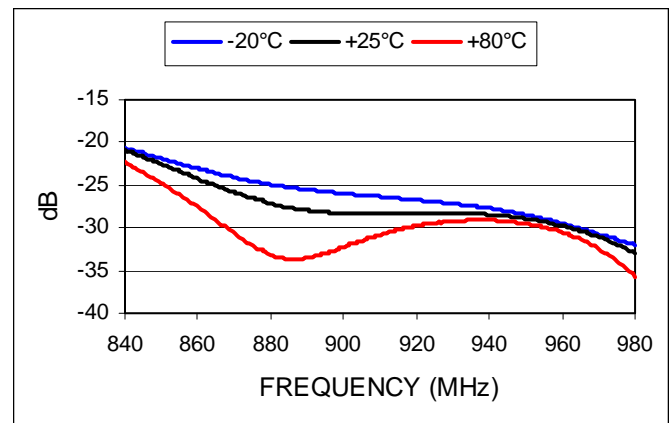
**Isolation (S12)**



**Return Loss (S11)**



**Return Loss (S22)**



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**Environmental Specifications**

Devices are designed to function after exposure to the shock, vibration, thermal shock and moisture conditions typically encountered in base station and other infrastructure environments.

**S-Parameters**

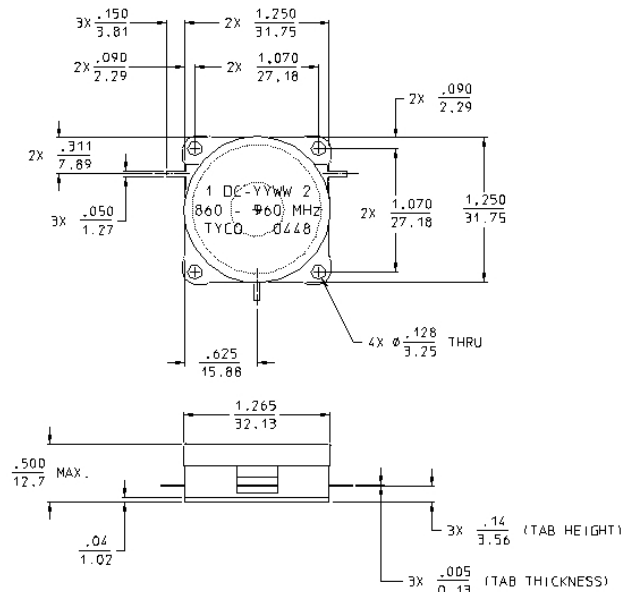
S-parameters are available on the M/A Com web-site at:

[www.macom.com/tech\\_app\\_resources/techapp\\_design\\_info](http://www.macom.com/tech_app_resources/techapp_design_info)

**Port Description:**

Port Number	Description
1	RF In
2	RF Out
3	Terminated

**Outline Drawing**



1. Dimensions in mm.
2. Tolerances:  $\pm 0.3$  mm unless otherwise noted.
3. Housing: Cold Rolled Steel with SnPb 90/10 plating.
4. Cover: CRS with SnPb 90/10 plating.
5. Leads: Copper.