

**Single Junction Gull Wing Circulator**  
902 MHz—928 MHz

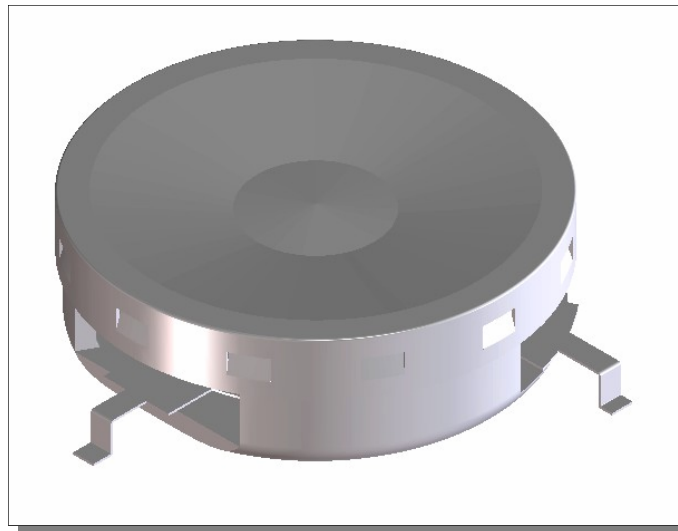
**MAFRIN0461**  
Version 2

**Features**

- Designed for RFID market
- 22dB Isolation typical
- 0.25dB Insertion Loss
- Low cost package

**Description**

This circulator is designed specifically for RFID 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 isolator and circulators in the world.



**Electrical Specifications**

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

Parameter	Test Conditions	Units	Min	Typ	Max
Frequency Range	Over $T_{op}^1$	MHz	902		928
Insertion Loss	902 MHz—928 MHz, over $T_{op}^1$	dB		0.21	0.30
Isolation	902 MHz—928 MHz, over $T_{op}^1$	dB	22.0	29.0	
Return Loss	902 MHz—928 MHz, all ports, over $T_{op}^1$	dB	21.0	28.0	
Circulation	Over $T_{op}^1$			CW	

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

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Forward Power	100 Watts
Operating Temperature	-10°C to +85°C
Storage Temperature	-40°C to +100°C

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

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**Ordering Information**

Part Number	Packaging
MAFRIN0461	Tray

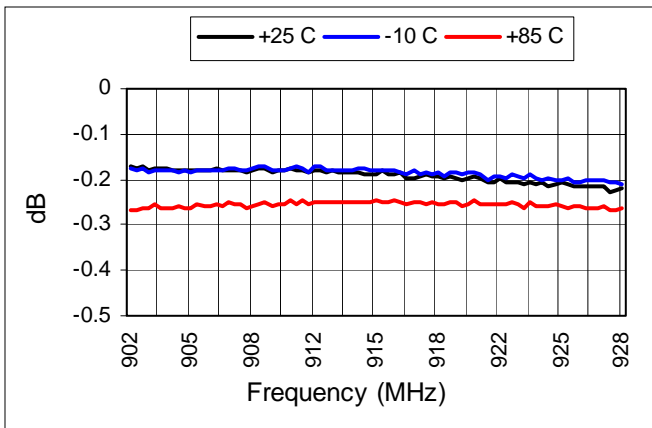
**Environmental Specifications**

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.

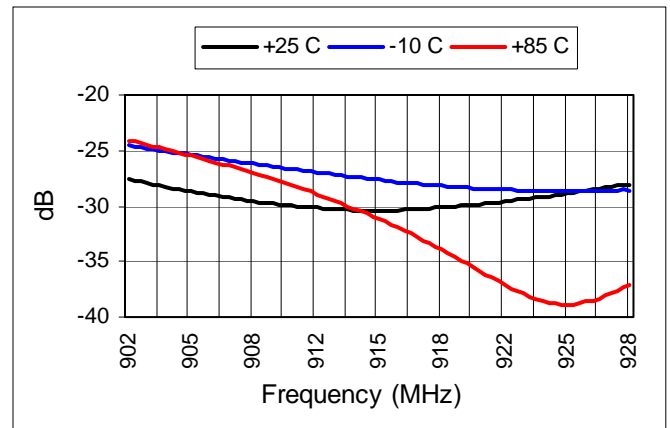
**S-Parameters**

S-parameters are available on the M/A Com web-site at: [S-Parameters](#)

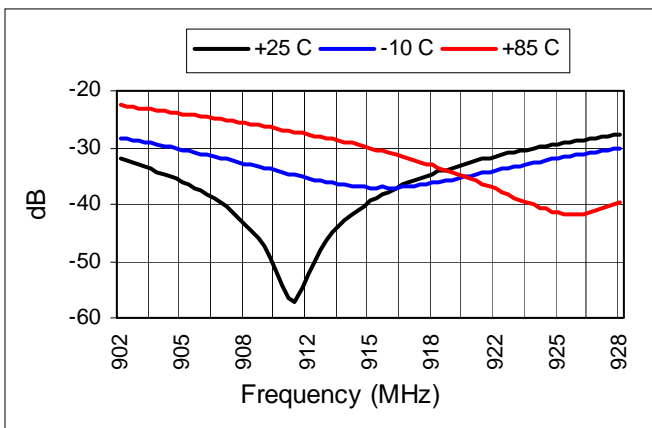
**Insertion Loss (S21)**



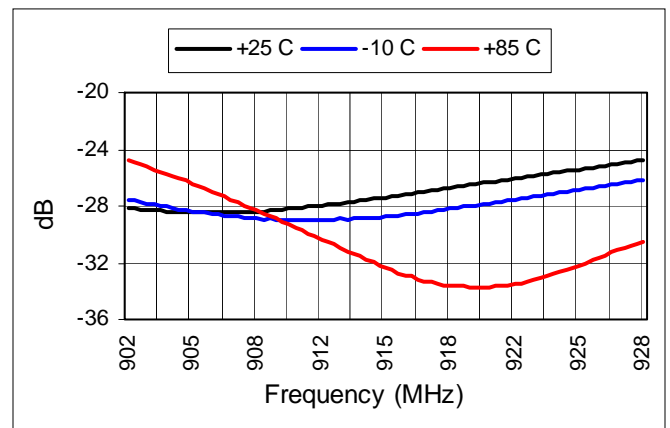
**Isolation (S12)**



**Return Loss (S11)**



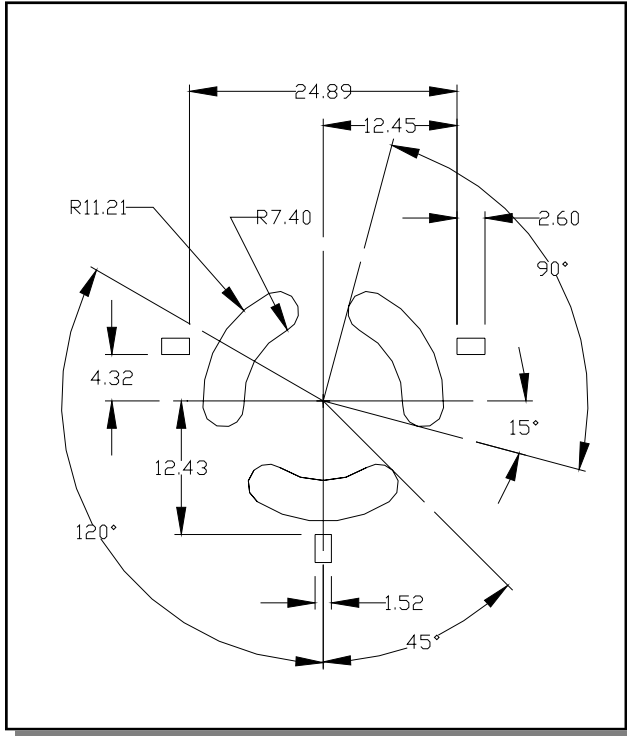
**Return Loss (S22)**



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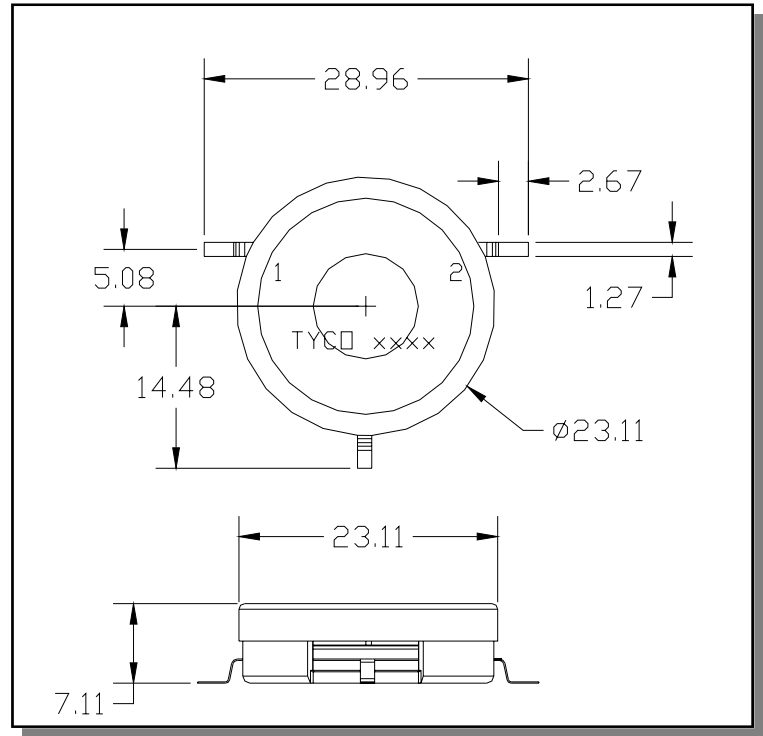
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**Recommended PCB Layout**



1. Dimensions in mm.
2. Tolerances:  $\pm 0.2$  mm unless otherwise noted.
3. Use multiple plated thru holes in ground area under the housing.

**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.