TTM Technologies
Time-To-Market Interconnect Solutions

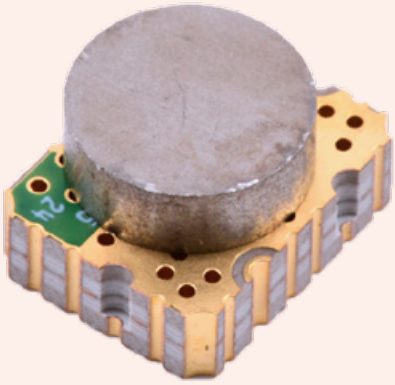
SMT Dual Junction Circulator X-Band

DES-12018 | *Preliminary*

The TTM Dual Junction X-Band Part, DES-12018, is a high performance surface-mount circulator designed for phased array radar antennas, EW, and communication systems.

The patent pending device operates over a frequency range of 8.5-10.0GHz and offers 15 / 30 db Isolation with an industry-best 0.60 / 1.0 dB Insertion Loss for single / dual junction operation, respectively, and RF Power Handling up to 20W continuous.

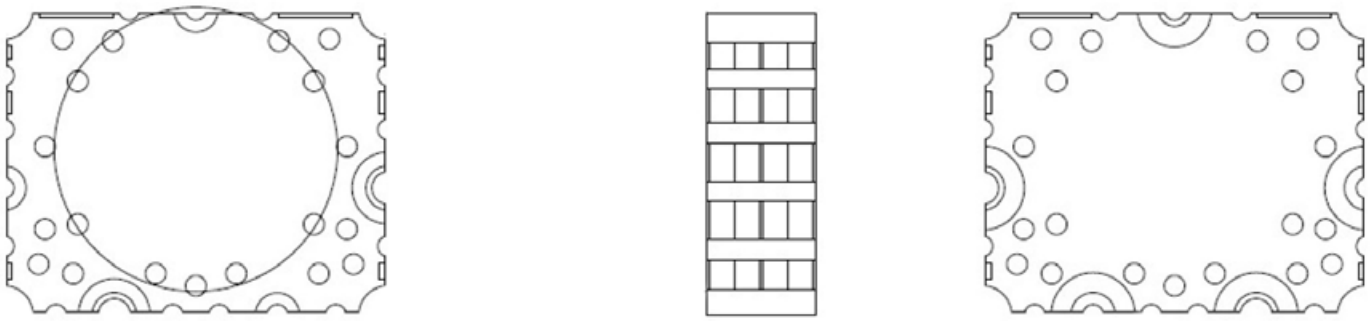
This device has a small form factor, pick and place compatible, and withstands typical MIL ground and airborne environments.



Size:
0.355" x 0.450" x 0.231"

Typical Electrical Performance*				Power Handling	Operating Temp.
Frequency	Return loss	Insertion loss	Isolation	20W CW	-40 to +85 ˚C
GHz	dB Min	dB Max	dB Min		
8.50 to 10.00	15	0.60 – Single	15 – Single		
		1.00 – Dual	30 – Dual		
**Data based on performance of unit properly installed on TTM Test Board with small signal applied.*					
Specifications subject to change without notice.					

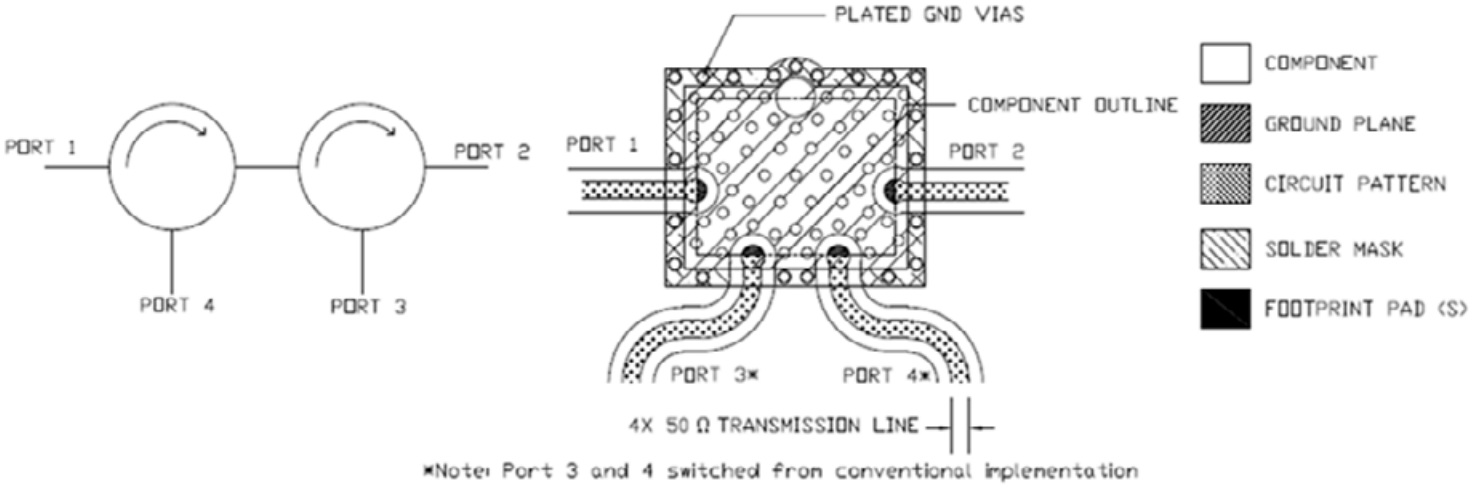
Figure 1: Mechanical Outline



Mounting Configuration:

In order for the surface mount components to work optimally, 50- Ohm transmission lines must be used to connect to the RF ports. If this condition is not satisfied, Insertion Loss, Isolation and Return Loss may not meet published specifications. All of the SMT components are constructed from soft board composites, which possess excellent electrical and mechanical stability. An example of the PCB footprint used in the testing of these parts is shown in Figure 2.

Figure 2: Example Footprint on 0.020" RO4350 Test Board



Typical Sample S Parameters at Room Temp: