

Rev. V1

### **Features**

- Supports up to 50 W Power
- Low Insertion Loss: 0.1 dB up to 2.5 GHz
- High Isolation: 16 dB @ 1 GHz
- RoHS\* Compliant

# **Description**

A broadband medium power switch element in a 2.6 x 1.5 mm DFN package. This device is Electrical Series with Thermal to Ground (EST2G). This device is designed for wireless infrastructure applications and test instruments.

It is well suited for other applications from 45 MHz up to  $2.5\ \text{GHz}$ 



2615 (Plastic Molded DFN)

# Electrical Specifications: T<sub>C</sub> = +25°C (unless otherwise specified)

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Breakdown Voltage (V <sub>BR</sub> )	I <sub>R</sub> = 10 μA	V	500	_	
Lifetime (t)	I <sub>F</sub> = 10 mA, I <sub>R</sub> = 6 mA, 10%/90%	ns		1200	_
I-Region (w)	I-Layer	μm		40	_
Series Resistance (R <sub>S</sub> )	I <sub>F</sub> = 100 mA	Ω	_	0.4	0.6
Junction Capacitance (C <sub>J</sub> )	V <sub>R</sub> = 50 V, 1 MHz	pF	_	0.18	0.25
Insertion Loss (I <sub>L</sub> )	I <sub>F</sub> = 100 mA, 2.5 GHz	dB	_	0.15	0.30
Input Return Loss (IR <sub>L</sub> )	I <sub>F</sub> = 100 mA, 2.5 GHz	dB	20	24	_
Isolation (I <sub>SO</sub> )	$V_R = -10 \text{ V}, 1.0 \text{ GHz}$ $V_R = -10 \text{ V}, < 2.0 \text{ GHz}$	dB	14 9	16 11	_

<sup>\*</sup> Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.



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# **Absolute Maximum Ratings**<sup>1,2</sup>

Parameter	Absolute Maximum		
Breakdown Voltage (V <sub>R</sub> )	500 V		
Forward Current (I <sub>FDC</sub> )	200 mA		
Theta (θ <sub>JC</sub> )	12°C/W		
Junction Temperature (T <sub>J</sub> )	175°C		
Storage Temperature (T <sub>STG</sub> )	-65°C to +250°C		
Mounting Temperature (T <sub>MTG</sub> )	+260°C per JEDEC STD-J-20C		

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

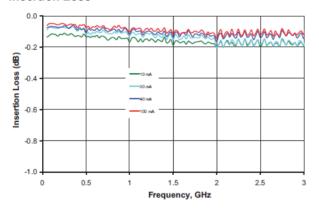
# **Handling Procedures**

Please observe the following precautions to avoid damage:

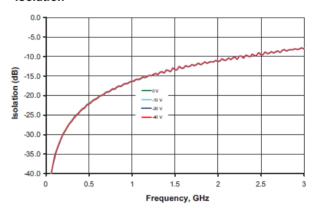
# **Static Sensitivity**

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.

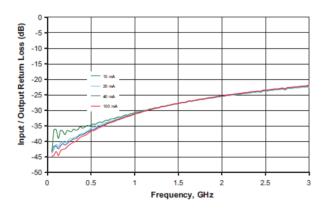
#### Insertion Loss



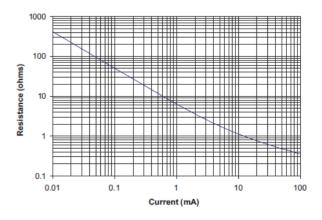
#### Isolation



#### Input / Output Return Loss



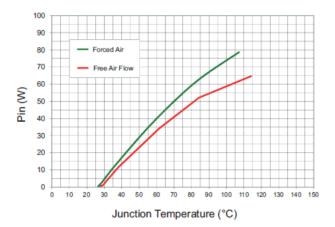
#### Series Resistance vs. Current, 500 MHz



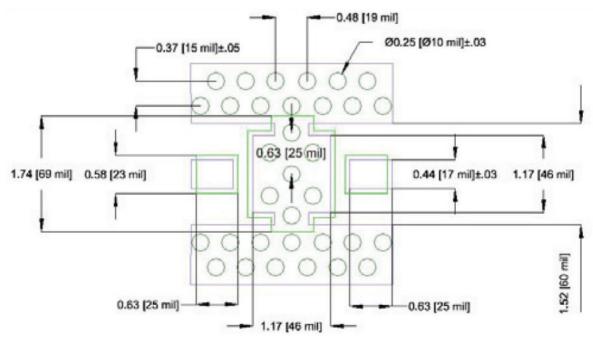


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# Junction Temperature vs. $P_{IN}$ (Mounted on Heat Sink @ +25°C, 1.3 GHz)



# **Printed Circuit Board Layout**



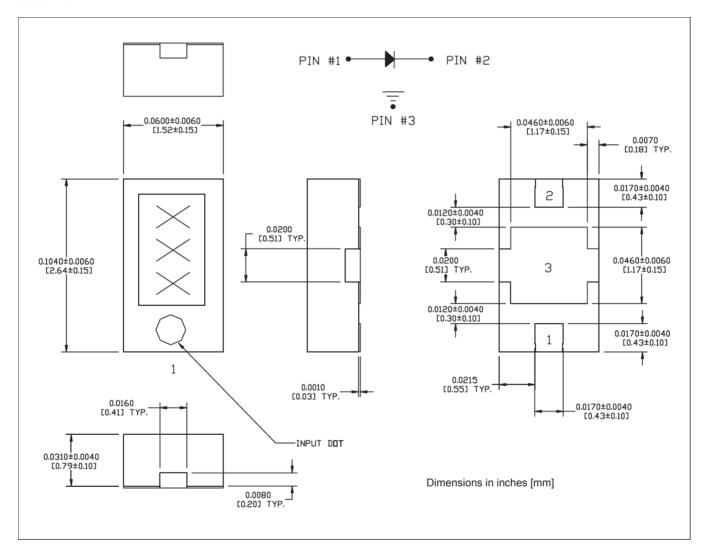
Unless otherwise specified:

- 1. Tolerance ±0.10 mm
- 2. Soldermask to extend 3 mils beyond metal trace
- 3. Vias under package filled with copper or soldermask
- 4. Use circles or squares for thermal land stencil such that there is only 50to 80% solder paste coverage



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# **Outline**



# MEST2G-050-45



# **Pin Diode Switch Element**

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