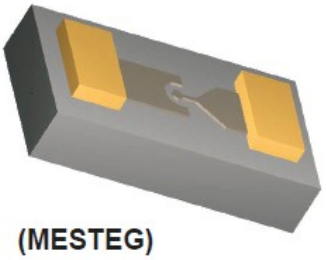
MEST2GFC-010-25

Pin Diode Switch Element

Rev. V1

Features

- Supports up to 10 W Power
- Low Insertion Loss: 0.4 dB up to 40 GHz
- High Isolation: 12 dB @ 10 GHz
- RoHS* Compliant



(MESTEG)

Description

A broadband medium power series switch element in chip form (26 x 12 mils). This is an electrical series device with a direct thermal path to ground (EST2G). It can be used in place of beam lead devices for medium power (up to 10 Watts) series switching.

It is well suited for other applications from 100 MHz up to 40 GHz

Electrical Specifications: T_C = +25°C (unless otherwise specified)

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_{BR})	I_R = 10 µA	V	100	—	—
Lifetime (t)	I_F = 10 mA, I_R = 6 mA, 10% / 50%	ns	—	85	—
I-Region (w)	I-Layer	µm	—	8	—
Series Resistance (R_S)	I_F = 100 mA, 500 MHz	Ω	—	2	—
Junction Capacitance (C_J)	V_R = -10 V, 1 MHz	pF	—	0.04	—
Insertion Loss (I_L)	I_F = 50 mA, 10 GHz I_F = 50 mA, <40 GHz	dB	—	+0.3 -0.4	+0.4 —
Input Return Loss (IR_L)	I_F = 50 mA, 10 GHz I_F = 50 mA, <40 GHz	dB	25 —	28 15	—
Isolation (I_{SO})	V_R = -10 V, 10 GHz V_R = -10 V, <6 GHz	dB	10 15	12 18	—

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Absolute Maximum Ratings[1,2]

Parameter	Absolute Maximum
Breakdown Voltage (V_R)	100 V
Forward Current (I_{FDC})	100 mA
Theta (θ_{JC})	60°C/W
Junction Temperature (T_J)	175°C
Storage Temperature (T_{STG})	-65°C to +250°C
Mounting Temperature (T_{MTG})	+320°C per 5 sec. max.

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

Handling Procedures

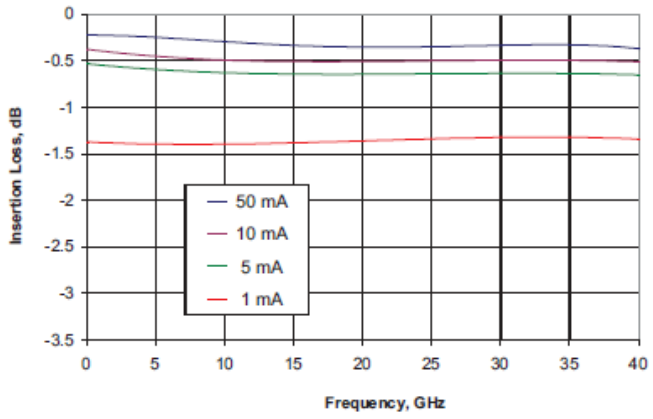
Please observe the following precautions to avoid damage:

Static Sensitivity

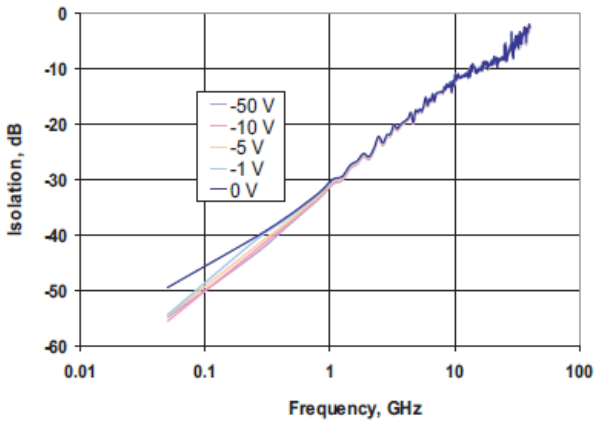
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.

Typical Performance Curves: T_A = 25°C, Z_O = 50 Ω, Small Signal

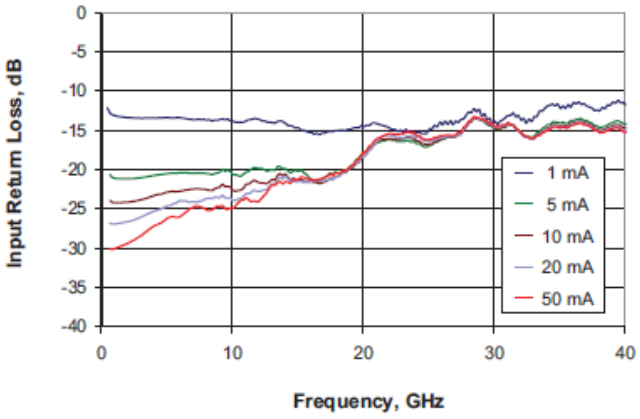
Insertion Loss



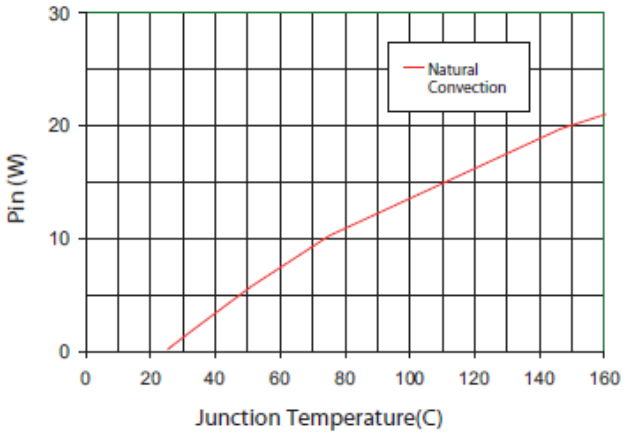
Isolation



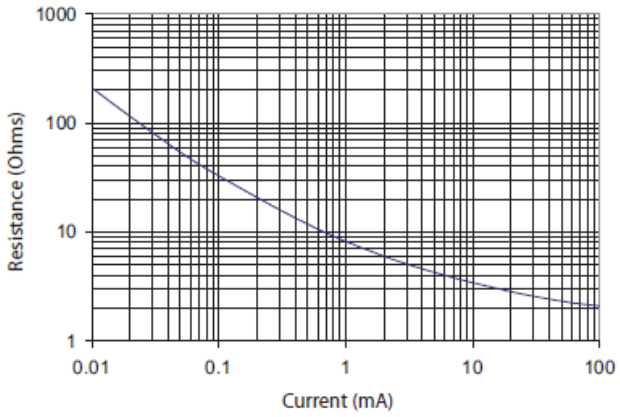
Input Return Loss



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



Resistance vs. Current, 500 MHz



Die Outline