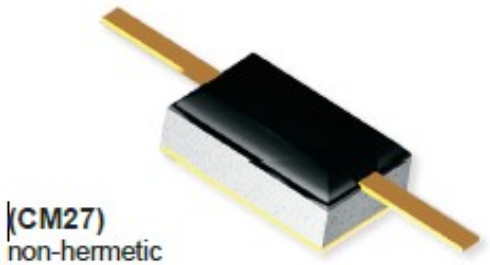
MEST2G-080-25

Pin Diode Switch Element

Rev. V1

Features

- High Power Handling: 80 W @ 2 GHz or Less
- Low Insertion Loss:
  - <0.35 dB @ 2 GHz
  - <0.60 dB @ 6 GHz
- Medium Isolation:
  - >22 dB @ 2 GHz
  - >14 dB @ 6 GHz
- RoHS* Compliant



Description

The MEST2G-080-25-CM27 is a thermal to ground series diode switch element in a Alumina Nitride package. This part is designed for reliable high power switch application up to 80 watts. Usable up to 10 GHz.

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

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_{BR})	I_R = 10 mA, single diode	V	500	—	—
Leakage Current (I_R)	I_F = 100 V, single diode	nA	—	40	100
Forward Voltage (V_F)	I_F = 100 mA, single diode	mV	—	0.93	1.05
Series Resistance (R_S)	I_F = 100 mA, single diode	Ω	—	0.97	—
Junction Capacitance (C_J)	V_R = 50 V, 1 MHz, single diode	pF	—	0.09	—-
Lifetime (t)	I_F = 10 mA, I_R = 6 mA, @ 50%	ns	—	1550	—
I-Region (w)	I-Layer, single diode	µm	—	80	—
Return Loss (R_L)	I_F = 100 mA, 2 GHz I_F = 100 mA, 6 GHz	dB	27 13	31 16	—
Insertion Loss (I_L)	I_F = 100 mA, 2 GHz I_F = 100 mA, 6 GHz	dB	—	0.20 0.45	0.35 0.60
Isolation (I_{SO})	V_R = 10 V, 2 GHz V_R = 10 V, 6 GHz	dB	22 14	25 17	—

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

Absolute Maximum Ratings[1,2]

Parameter	Absolute Maximum
Breakdown Voltage (V_R)	500 V
Forward Current (I_F)	200 mA
Theta (θ_{JC})	10°C/W
Junction Temperature (T_J)	-40°C to +175°C
Storage Temperature (T_{STG})	-55°C to +150°C
Mounting Temperature (T_{MTG})	+260°C per JEDEC STD-J-20C

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

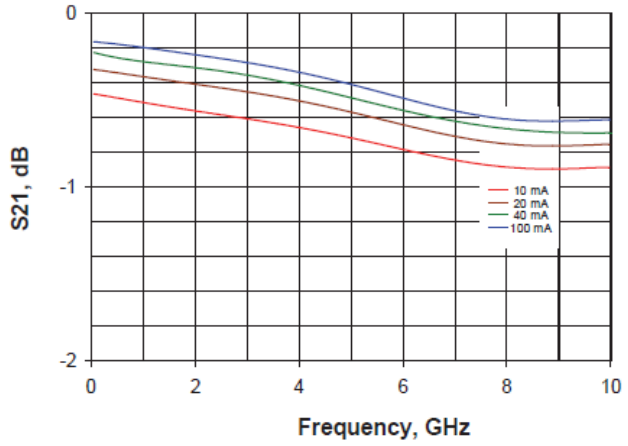
Please observe the following precautions to avoid damage:

Static Sensitivity

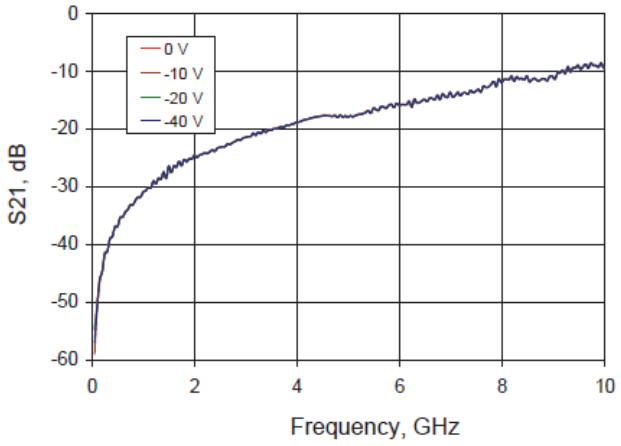
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.

Typical Performance Curves: T_A = 25°C, -10 dBm Small Signal

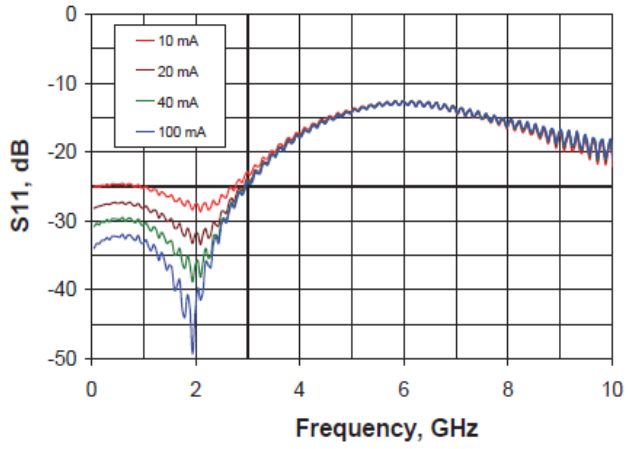
Insertion Loss



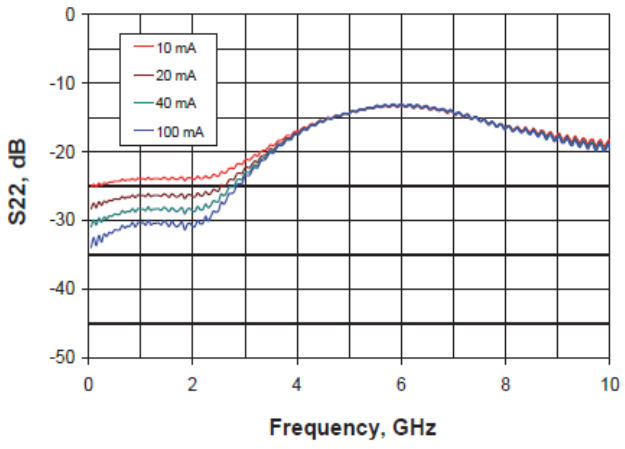
Isolation



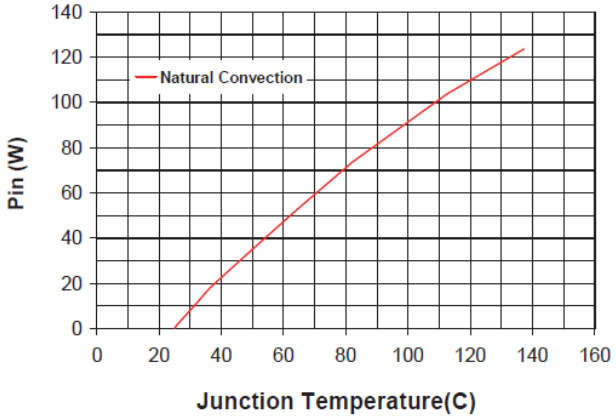
Input Return Loss



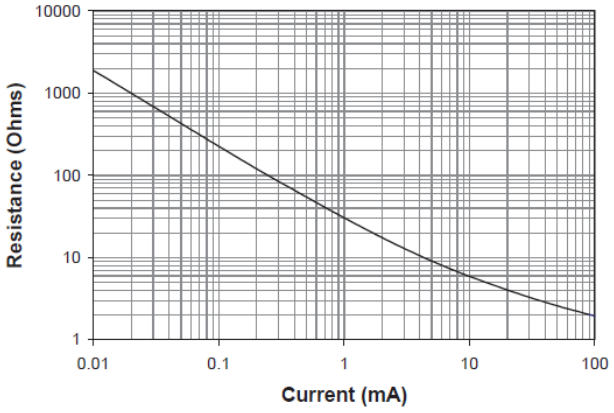
Output Return Loss



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



Resistance vs. Current, 500 MHz
For Two Diodes in Series



Package Outline (CM27)