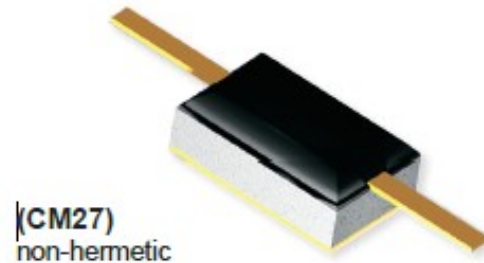


Features

- 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: $T_C = +25^\circ\text{C}$ (unless otherwise specified)

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

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

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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

- 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

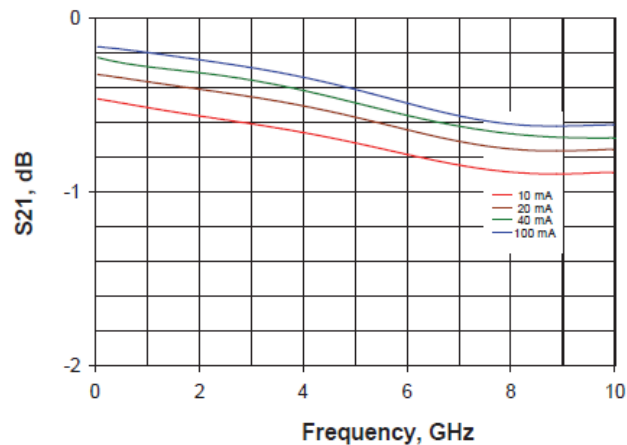
Please observe the following precautions to avoid damage:

Static Sensitivity

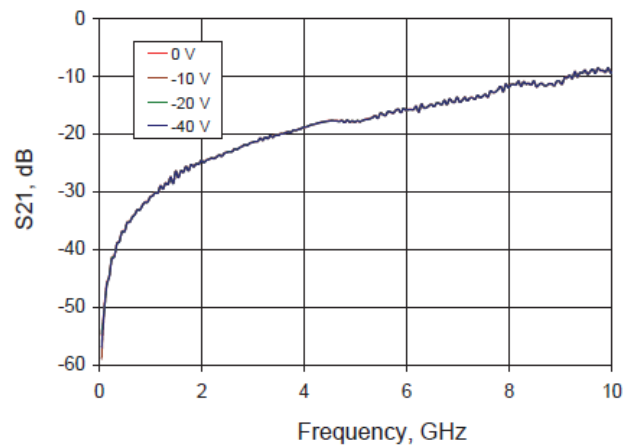
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.

Typical Performance Curves: $T_A = 25^\circ\text{C}$, -10 dBm Small Signal

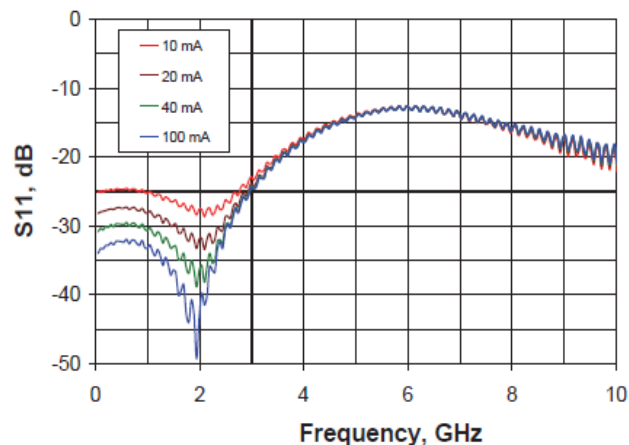
Insertion Loss



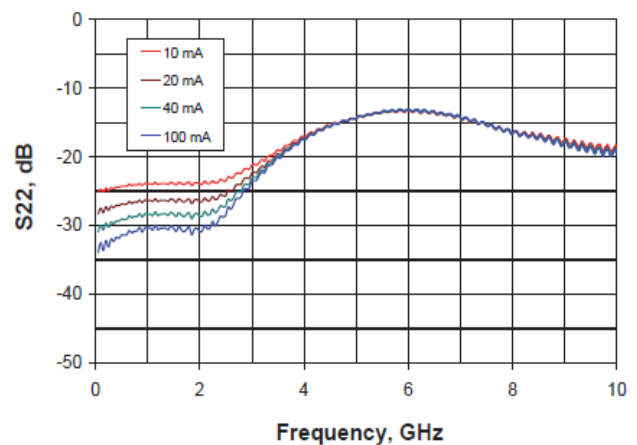
Isolation



Input Return Loss



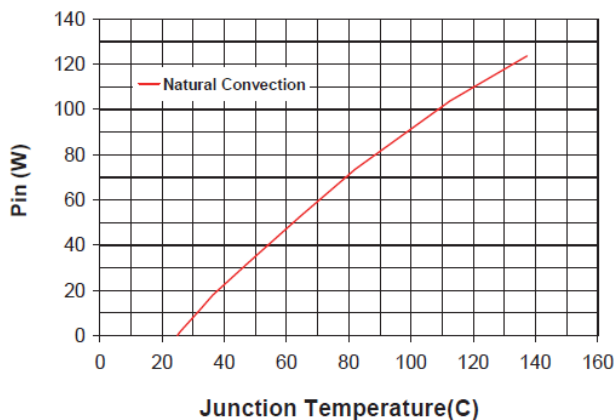
Output Return Loss



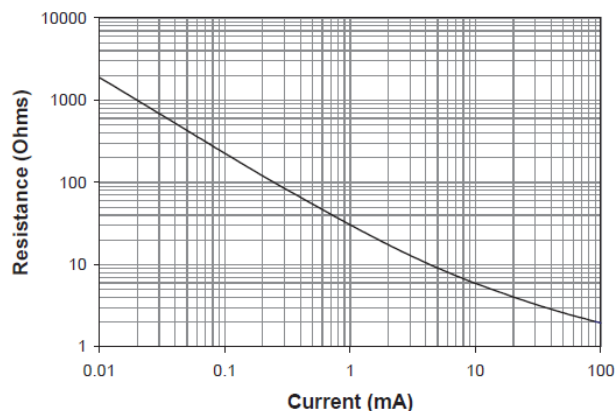
Pin Diode Switch Element

Rev. V1

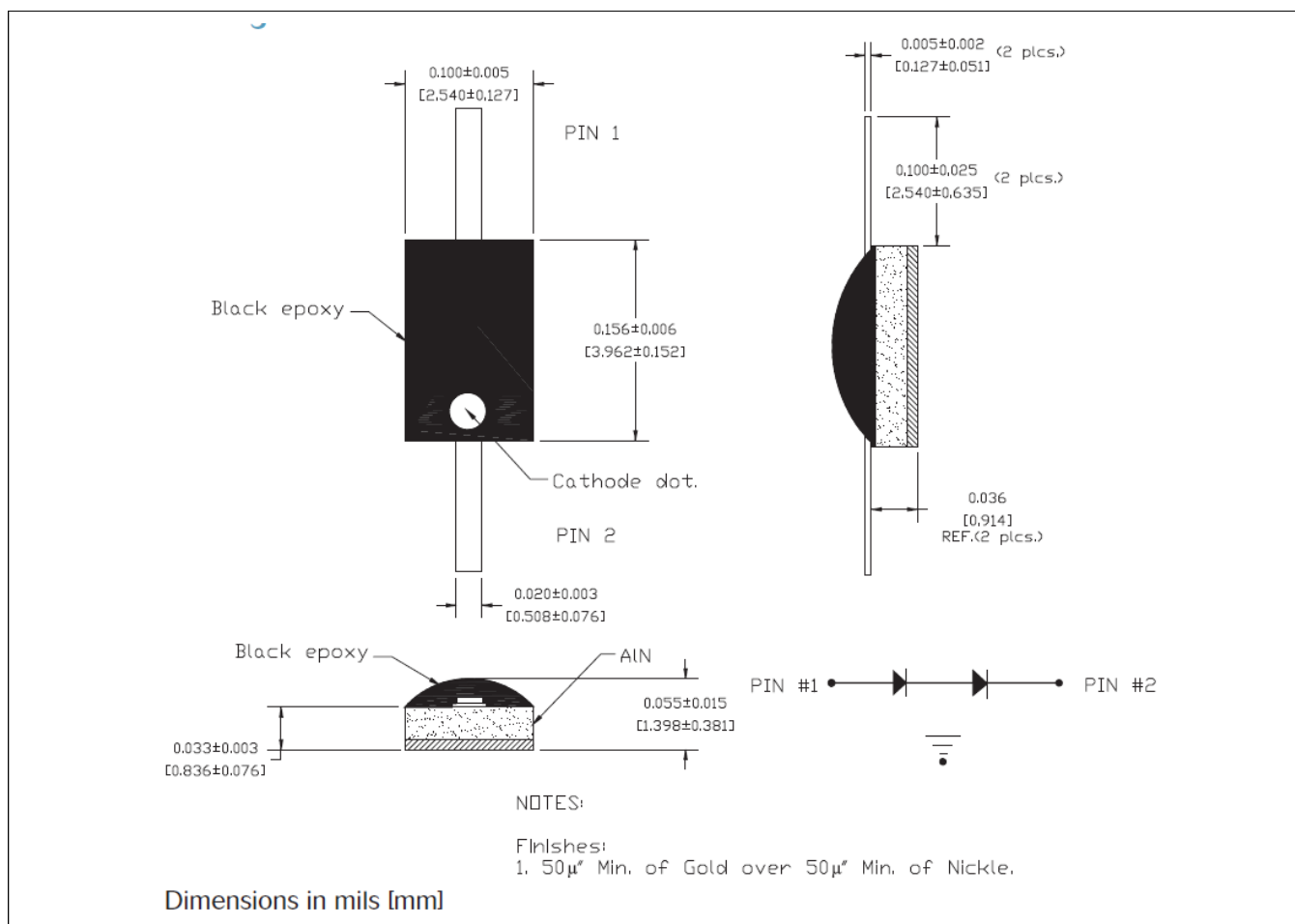
Junction Temperature vs. P_{IN}
(Mounted on Heat Sink @ $T_A = +25^\circ\text{C}$, 1.3 GHz)



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



Package Outline (CM27)



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