

## GaAs Schottky Diode

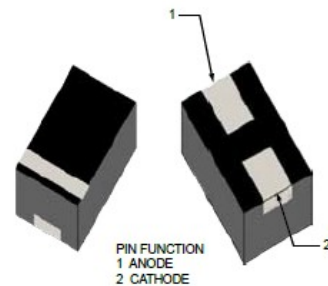
Rev. V1

### Features

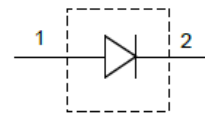
- Small Footprint, only 50 x 30 mils.
- Very Low Parasitic Package Inductance, Series Resistance, and Low Package Capacitance
- RoHS\* Compliant

### Description

The SMGS11 is a GaAs Schottky diode in a molded plastic DFN package. It is designed for broadband detector and single diode mixer. It is in single configuration. It has a high cutoff frequency and can be used beyond 26.5 GHz.



Case 0503 - Molded Plastic DFN Package



### Electrical Specifications: $T_A = +25^\circ\text{C}$

| Parameter                                  | Test Conditions   | Units    | Min. | Typ.         | Max.         |
|--|---|----------|------|--------------|--------------|
| Forward Voltage ( $V_F$ )                  | $I_R = 1 \text{ mA}$  | V        | 620  | —            | 760          |
| Total Capacitance ( $C_T$ )                | $V_R = 0 \text{ V}, 1 \text{ MHz}$<br>$V = 0 \text{ V}, >4 \text{ GHz}$ | pF       | —    | 0.10<br>0.08 | 0.13<br>0.10 |
| Series Resistance ( $R_S$ )                | $I_F = 5 \text{ mA}$  | $\Omega$ | —    | —            | 7            |
| Video Resistance ( $R_V$ )                 | $I_F = 40 \mu\text{A}$  | $\Omega$ | —    | 1250         | —            |
| Tangential Signal Sensitivity ( $T_{SS}$ ) | NF -3 dB, 10 GHz  | dBm      | —    | -57          | —            |
| Voltage Sensitivity ( $\gamma$ )           | $P_{IN} = -30 \text{ dBm}$ , Video BW = 500 KHz, 10 GHz                 | mV/mW    | —    | 8000         | —            |

### Absolute Maximum Ratings

| Parameter            | Absolute Maximum                               |
|----------------------|--|
| Input Power          | 20 dBm   |
| Reverse Voltage      | 5 V  |
| Forward Current      | 20 mA  |
| Junction Temperature | +175°C   |
| Storage Temperature  | -65°C to +150°C                                |
| Solder Temperature   | +260°C, peak for 5 sec,<br>per JEDEC J-STD-20C |

### Handling Procedures

Please observe the following precautions to avoid damage:

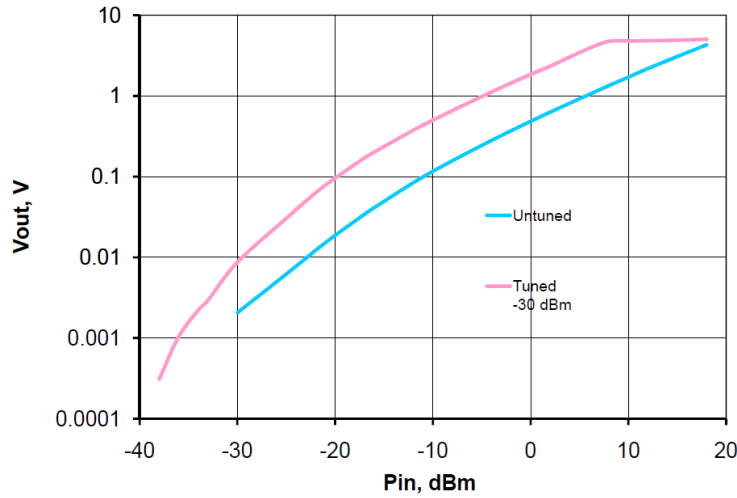
### Static Sensitivity

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 (HBM) Class 0 devices.

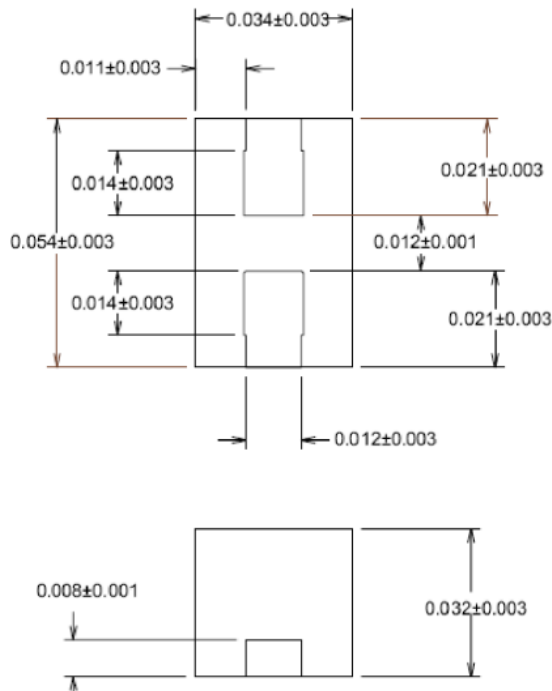
1 \* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

### Typical Dynamic Transfer Characteristics: $R_L = 10\ \text{m}\Omega$ , $F_O = 10\ \text{GHz}$

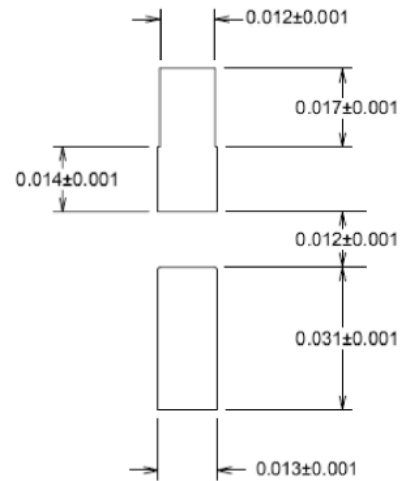
Output Voltage vs. Input Power



### Lead-Free 0503 Plastic DFN Package



### Soldering Footprint



All Dimensions +/-0.001 Inch

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