

GaAs Schottky Diode

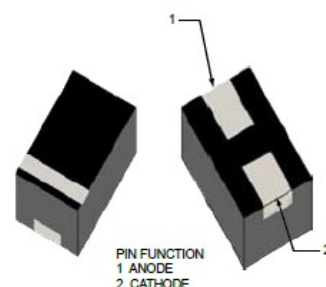
Rev. V1

Features

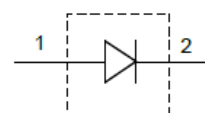
- Small Footprint, only 50 x 30 mils.
- Very Low Parasitic Package Inductance, Series Resistance, and Low Package Capacitance
- RoHS* Compliant

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)	$V_R = 0 \text{ V}, 1 \text{ MHz}$ $V = 0 \text{ V}, >4 \text{ GHz}$	pF	—	0.10 0.08	0.13 0.10
Series Resistance (R_S)	$I_F = 5 \text{ mA}$	Ω	—	—	7
Video Resistance (R_V)	$I_F = 40 \mu\text{A}$	Ω	—	1250	—
Tangential Signal Sensitivity (T_{SS})	NF -3 dB, 10 GHz	dBm	—	-57	—
Voltage Sensitivity (γ)	$P_{IN} = -30 \text{ dBm}$, 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, 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.

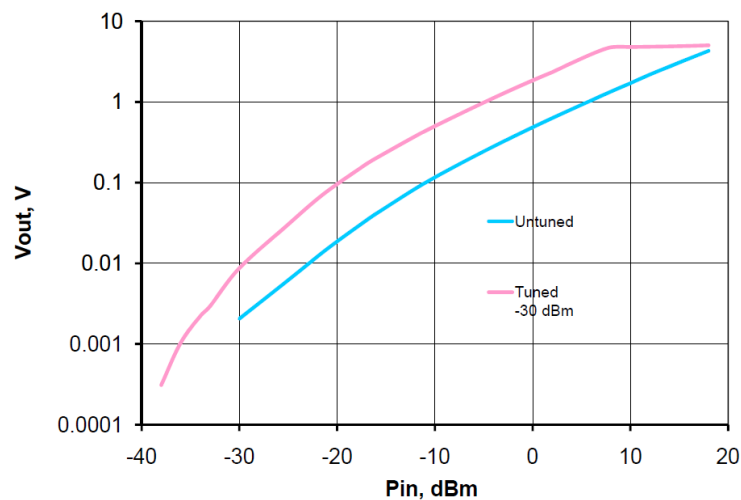
1 * Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

GaAs Schottky Diode

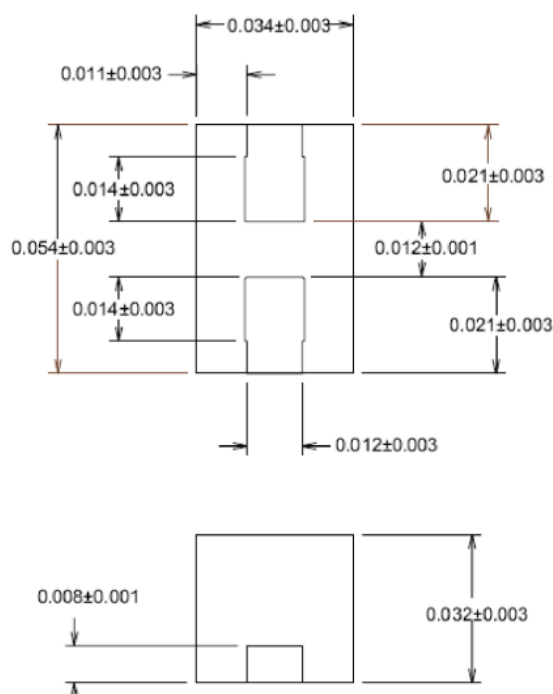
Rev. V1

Typical Dynamic Transfer Characteristics: $R_L = 10\text{ m}\Omega$, $F_0 = 10\text{ GHz}$

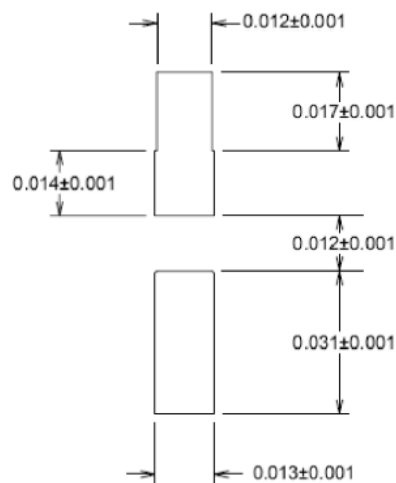
Output Voltage vs. Input Power



Lead-Free 0503 Plastic DFN Package



Soldering Footprint



All Dimensions +/-0.001 Inch

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.