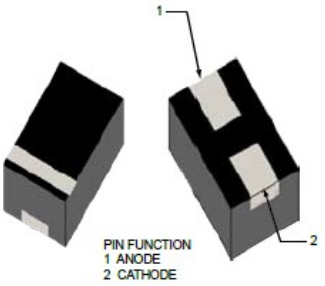
SMS201

Silicon Schottky Diode

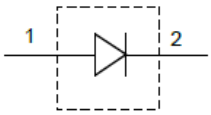
Rev. V1

Features

- Small Footprint, only 50 x 30 mils.
- Simplest Broadband Detector as no DC bias Required
- Very Low Barrier Height, Good Sensitivity, -54 dBm, also Low Flick Noise
- Very Low Parasitic Package Inductance and Low Package Capacitance
- RoHS* Compliant



Case 0503 - Molded Plastic DFN Package



Description

The SMS201 is a silicon Schottky diode in a molded plastic DFN package. It is designed for a broadband zero bias detector. It has a high cutoff frequency and can be used beyond 26.5 GHz for power detection up to 10 dBm.

Electrical Specifications: T_A = +25°C

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_B)	I_R = 100 µA	V	1	—	—
Forward Voltage (V_F)	I_F = 100 µA	mV	60	80	120
Total Capacitance (C_T)	V_R = 0 V, 6 - 8 GHz	pF	—	0.08	0.10
Video Resistance (R_V)	I_F = 50 mA	Ω	2000	4000	8000
Tangential Signal Sensitivity (T_{SS})	NF -3 dB, 10 GHz	dBm	—	-54	—
Voltage Sensitivity (y)	P_{IN} = -30 dBm, Video BW = 500 KHz, 10 GHz	mV/mW	—	8000	—

Absolute Maximum Ratings

Parameter	Absolute Maximum
Reverse DC Voltage	1 V
Forward Current	20 mA
Dissipated Power	100 mW (de-rated to 0 @ +175°C)
Junction Temperature	+175°C
Storage Temperature	-65°C to +150°C
Solder Temperature	+260°C per JEDEC J-STD-20C

Handling Procedures

Please observe the following precautions to avoid damage:

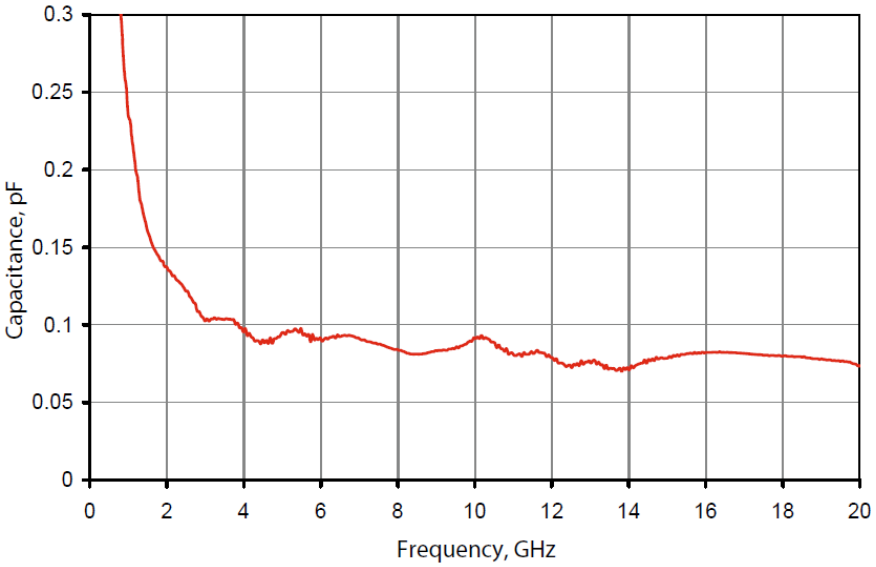
Static Sensitivity

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.

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

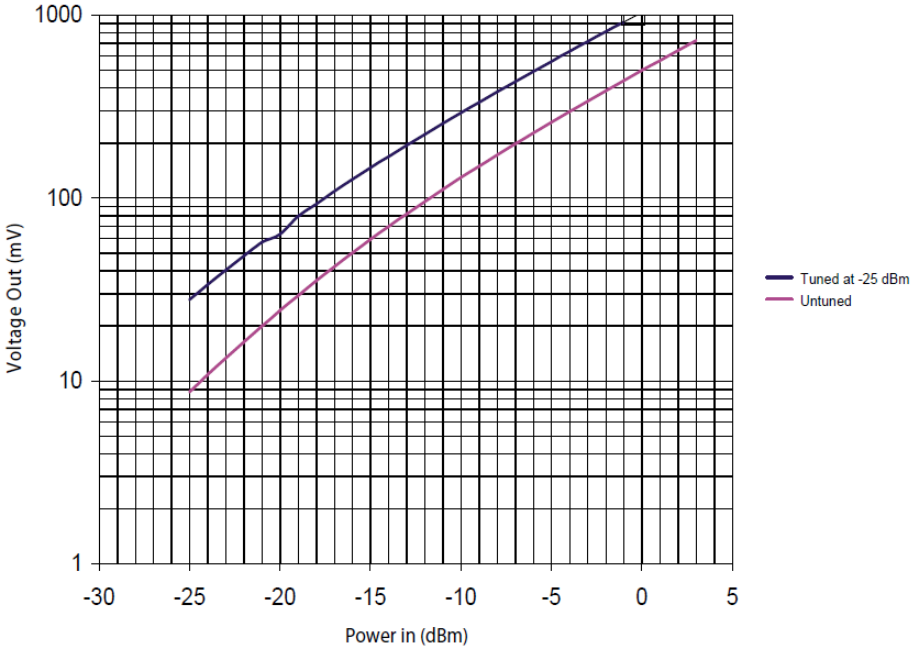
Typical RF Performance: T_A = +25°C, Z_O = 50 Ω

Small Signal Capacitance vs. Frequency

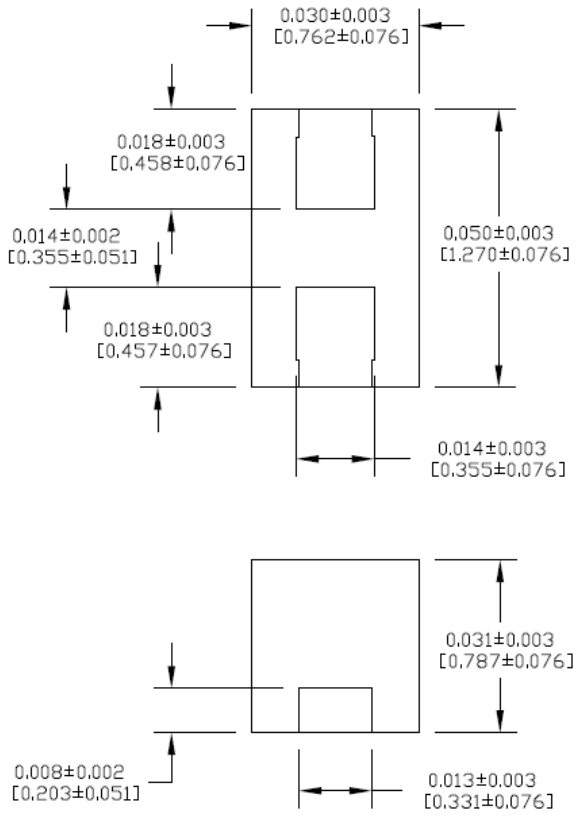


Typical Dynamic Transfer Characteristics: R_L = 10 mΩ, F_O = 10 GHz

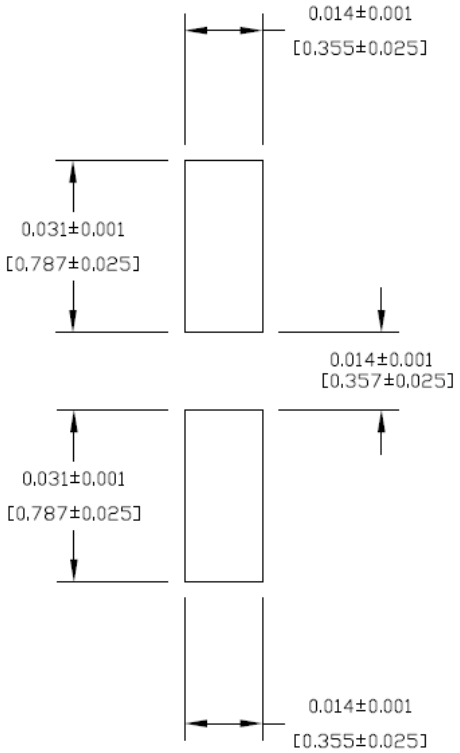
Output Voltage vs. Input Power



Lead-Free 0503 Plastic DFN Package



Soldering Footprint



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