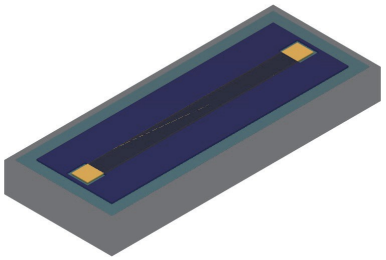
MMSPN050-C53

Microstrip PIN Diode

Rev. V1

Features

- Supports up to 40 Watts Power
- Low Insertion Loss 0.4 dB typical up to 40 GHz
- High Isolation 58 dB typical at 10 GHz
- RoHS* Compliant



Description

The MMSPN050-C53 is a broadband medium power PIN diode designed as a 50 Ω microstrip when biased at zero or a negative voltage. This device is usable up to 40 GHz.

Electrical Specifications: T_C = +25°C

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage	I_R = 10 µA	V	200	—	—
Series Resistance	I_F = 100 mA, 500 MHz	Ω	—	0.6	—
Minority Carrier Lifetime	I_F = 10 mA, I_R = 6 mA, 10% / 90%	ns	—	4000	—
Insertion Loss	V_R = -50 V, 10 GHz V_R = -50 V, <40 GHz	dB	—	0.15 0.20	0.30 0.40
Input Return Loss	10 GHz <40 GHz	dB	20 —	25 15	—
Isolation	I_F = 40 mA, 10 GHz, I_F = 40 mA, 5 - 40 GHz	dB	50 —	55 50	—

Absolute Maximum Ratings

Parameter	Absolute Maximum
Reverse Voltage	200 V
Forward Current	500 mA
Thermal Resistance	65°C/W
Junction Temperature	+150°C
Storage Temperature	-65°C to +125°C
Assembly Temperature	+260°C, per JEDEC STD-J-20C

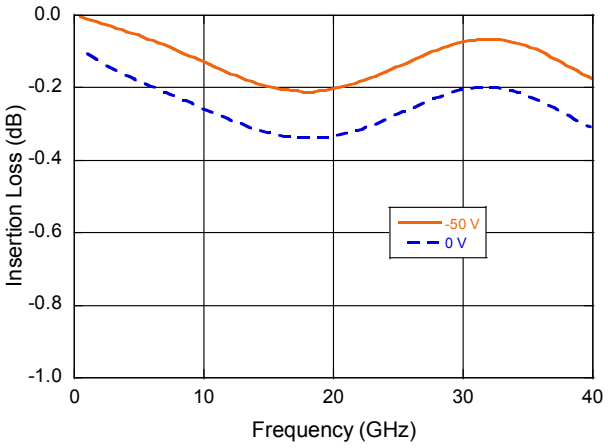
Ordering Information

Part Number	Package
MMSPN050-C53	bulk

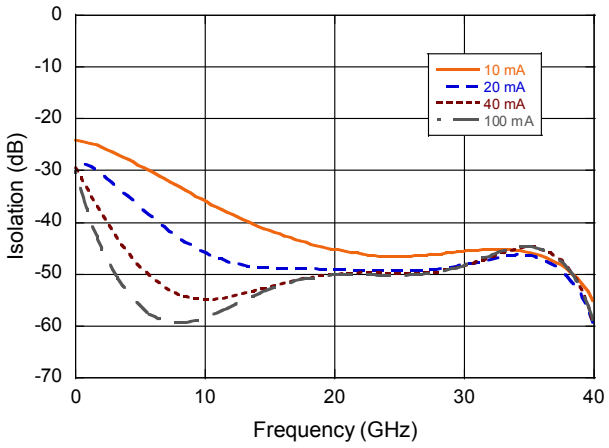
* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Typical Performance Curves: T_A = +25°C, Z_O = 50 Ω, -10 dBm Small Signal

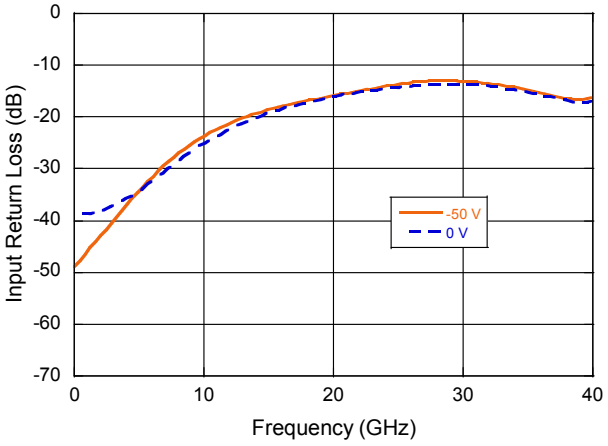
Insertion Loss



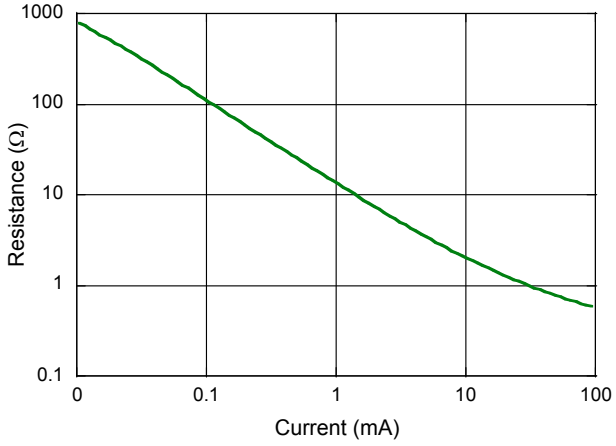
Isolation



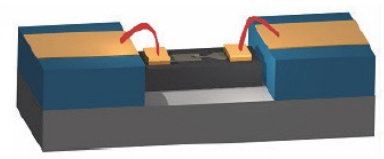
Input Return Loss



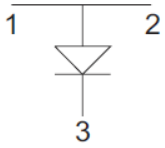
Resistance vs. Current @ 500 MHz



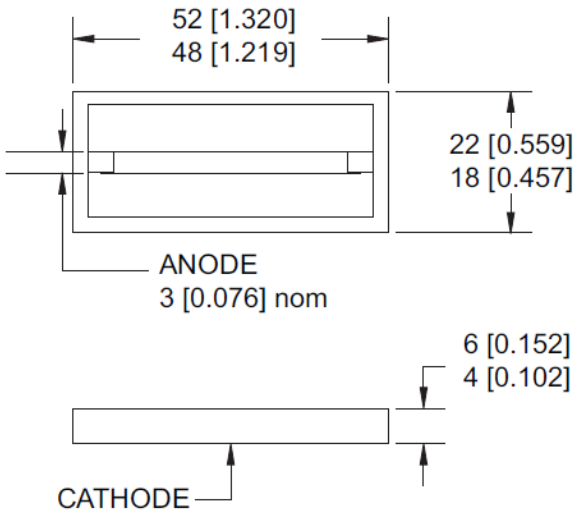
Recommended Assembly for Best Thermals



Electrical Schematic



Outline Drawing (C53)



Dimensions in mils [mm]