MSS39,000 Series
P-Type Silicon Schottky Diodes

Description

The Aeroflex / Metelics MSS39,000 series of Schottky diodes is fabricated on P-Type epitaxial substrates for superior 1/f noise performance in microwave biased-detector applications up to 40 GHz.

Features

- Very low 1/f Noise
- Detector applications to 40 GHz
- Chip, beam lead or packaged devices

Absolute Maximum Ratings

Parameters	Rating
Reverse Voltage	Rated V_{BR}
Forward Current	50 mA
Operation Temperature	-65 °C to +150 °C
Storage Temperature	-65 °C to +150 °C
Power Dissipation	100 mW, derated linearly to zero at T_A = +150 °C
Soldering Temperature (Packaged)	+ 230 °C for 5 sec.
Beam Lead Pull Strength, Min	4 grams

Chip
Electrical Specifications, T_A = 25 °C

Model	V_{BR} MIN V	V_F TYP V	C_J MAX pF	T_{SS} TYP dBm	γ TYP mV / mW	Frequency MAX GHz	Outline
MSS39,045-C15	5.0	0.40	0.10	-58	5,000	18	C15
MSS39,048-C15	5.0	0.39	0.15	-58	5,000	12	C15
Test Conditions	I_R = 10 µA	I_F = 1 mA	V_R = 0 V F = 1 MHz	DC Bias = 10 µA R_L = 100 KΩ	F = 10 GHz Video BW = 2 MHz		

AEROFLEX METELICS

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Beam Lead
Electrical Specifications, T_A = 25 °C

Model	V_{BR} MIN V	V_F TYP V	C_J MAX pF	T_{SS} TYP dBm	γ TYP mV / mW	Frequency MAX GHz	Outline
MSS39,144-B10B	3.5	0.38	0.08	-58	5,000	40	B10B
MSS39,146-B10B	3.5	0.38	0.10	-58	5,000	26	B10B
MSS39,148-B10B	3.5	0.39	0.12	-58	5,000	18	B10B
MSS39,152-B10B	3.5	0.38	0.18	-58	5,000	12	B10B
Test Conditions	I_R = 10 µA	I_F = 1 mA	V_R = 0 V F = 1 MHz	DC Bias = 10 µA F = 10 GHz R_L = 100 KΩ Video BW = 2 MHz			

Packaged
Electrical Specifications, T_A = 25 °C

Model	V_{BR} MIN V	V_F TYP V	C_T MAX pF	T_{SS} TYP dBm	γ TYP mV / mW	Frequency MAX GHz	Outline
MSS39,045-P55	5.0	0.40	0.25	-58	5000	18	P55
MSS39,045-P86	5.0	0.40	0.27	-58	5000	18	P86
MSS39,048-P55	5.0	0.39	0.30	-58	5000	12	P55
MSS39,048-P86	5.0	0.39	0.32	-58	5000	12	P86
MSS39,148-E25	3.5	0.39	0.22	-58	5000	18	E25
MSS39,148-H20	3.5	0.39	0.30	-58	5000	12	H20
MSS39,152-E25	3.5	0.38	0.28	-58	5000	12	E25
MSS39,152-H20	3.5	0.38	0.36	-58	5000	18	H20
Test Conditions	I_R = 10 µA	I_F = 1 mA	V_R = 0 V F = 1 MHz	DC Bias = 10 µA F = 10 GHz R_L = 100 KΩ Video BW = 2 MHz			

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Typical Performance, T_A = 25 °C

Figure 1.

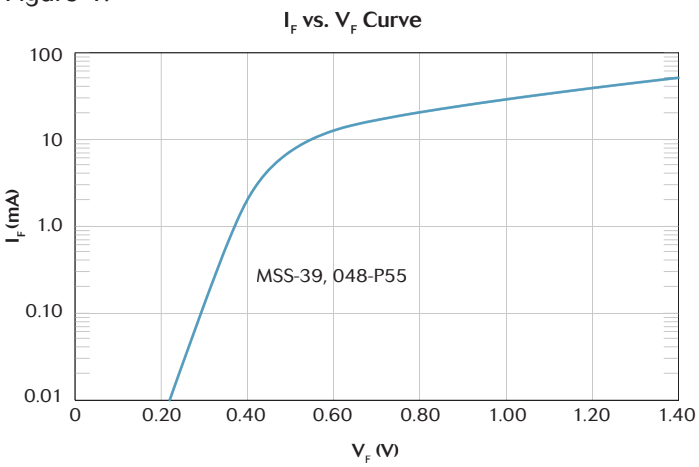


Figure 2.

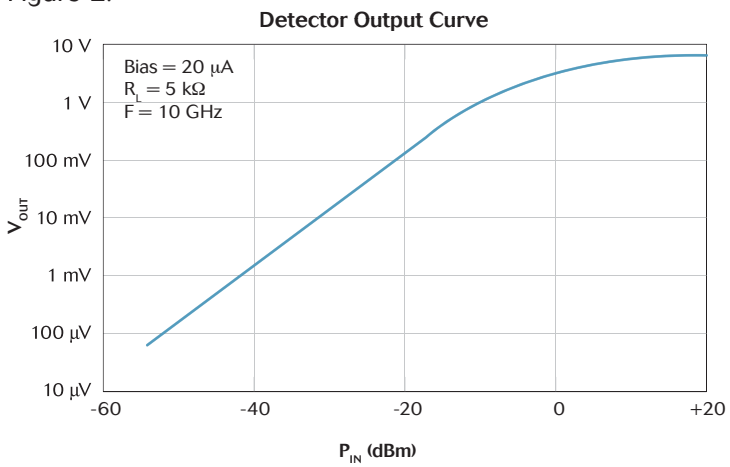
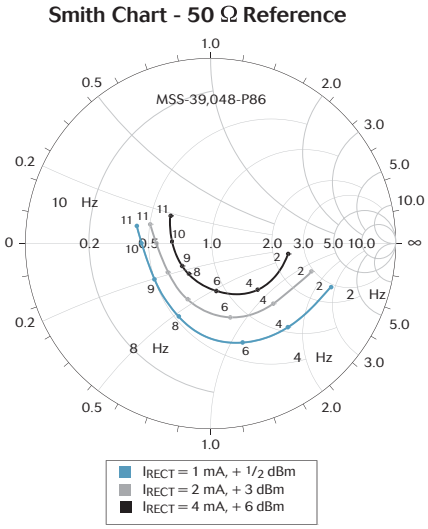


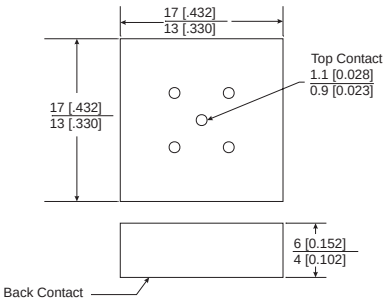
Figure 4.



Outline Drawings

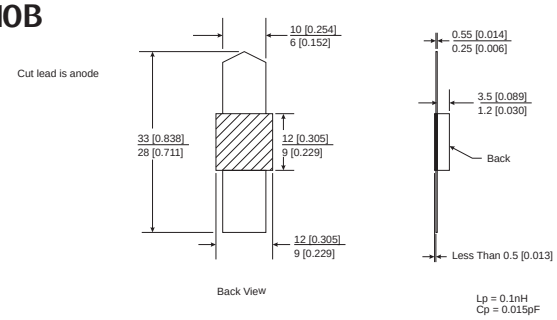
C15

Top contact is cathode.



B10B

Cut lead is anode



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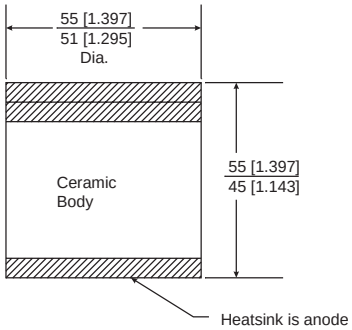
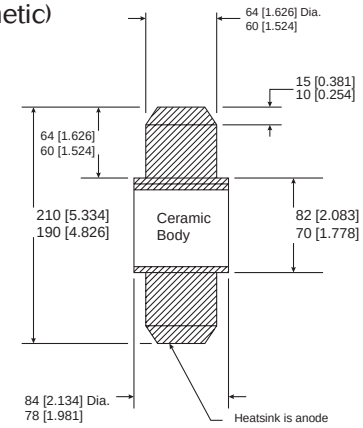
Outline Drawings

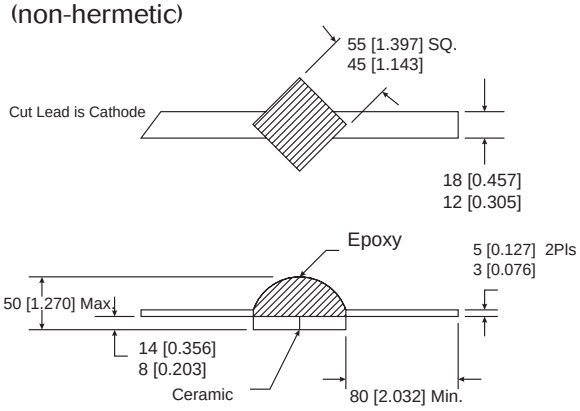
P55 (hermetic)



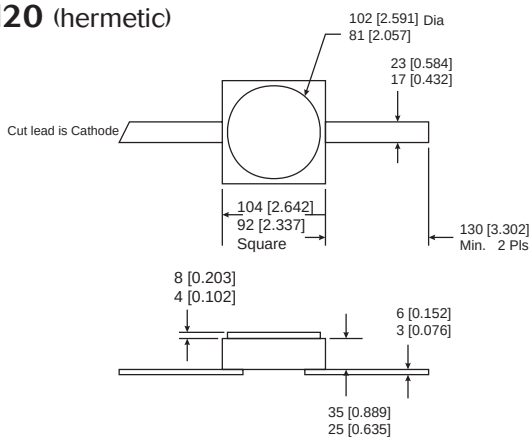
P86 (hermetic)



E25 (non-hermetic)



H20 (hermetic)



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