

MSS60,000 Series

Extra High Barrier Silicon Schottky Diodes



Description

The Aeroflex / Metelics MSS60,000 Series of Schottky diodes are fabricated on N-Type epitaxial substrates using proprietary processes that yield the highest FCOs in the industry. Optimum mixer performance is obtained with LO power of +6 dBm to +12 dBm per diode.

Features

- V_F , R_D and C_J matching options
- Chip, beam lead or packaged devices
- Hi-Rel screening per MIL-PRF-19500 and MIL-PRF-38534 available

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 per junction at $T_A = 25$ °C, derate linearly to zero at $T_A = +150$ °C
Soldering Temperature (Packaged)	+ 260 °C for 5 sec.
Beam Lead Pull Strength	4 grams minimum

Beam Lead

Electrical Specifications, $T_A = 25$ °C

Model	Configuration	V_F TYP V	V_{BR} MIN V	C_J TYP / MAX pF	R_S TYP Ω	R_D MAX Ω	Outline
MSS60,144-B10B	Single Junction	625	3.5	0.08 0.10	20	25	B10B
MSS60,148-B10B	Single Junction	625	3.5	0.12 / 0.15	13	18	B10B
MSS60,153-B10B	Single Junction	625	3.5	0.20 / 0.25	7	12	B10B
MSS60,244-B20	Series Tee	625	3.5	0.08 / 0.10	20	25	B20
MSS60,248-B20	Series Tee	625	3.5	0.12 / 0.15	13	18	B20
MSS60,253-B20	Series Tee	625	3.5	0.20 / 0.25	7	12	B20
Test Conditions		$I_F = 1$ mA	$I_R =$ 10 μ A	$V_R = 0$ V F = 1 MHz	$I_F = 5$ mA		



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Beam Lead

Electrical Specifications, $T_A = 25\text{ }^{\circ}\text{C}$

Model	Configuration	V_F TYP V	V_{BR} MIN V	C_J TYP / MAX pF	R_S TYP Ω	R_D MAX Ω	Outline
MSS60,444-B41	Ring Quad	650	3.5	0.08 / 0.10	20	25	B41
MSS60,448-B41	Ring Quad	650	3.5	0.12 / 0.15	13	18	B41
MSS60,453-B41	Ring Quad	650	3.5	0.25 / 0.30	7	12	B41
MSS60,841-B80	Ring Quad	1200	6.0	0.06 / 0.08	23	28	B80
MSS60,846-B80	Ring Quad	1200	6.0	0.10 / 0.12	17	23	B80
MSS60,848-B80	Ring Quad	1200	6.0	0.12 / 0.15	13	18	B80
Test Conditions		$I_F =$ 1 mA	$I_R =$ 10 μ A	$V_R = 0\text{ V}$ $F = 1\text{ MHz}$	$I_F = 5\text{ mA}$		

Packaged

Electrical Specifications, $T_A = 25\text{ }^{\circ}\text{C}$

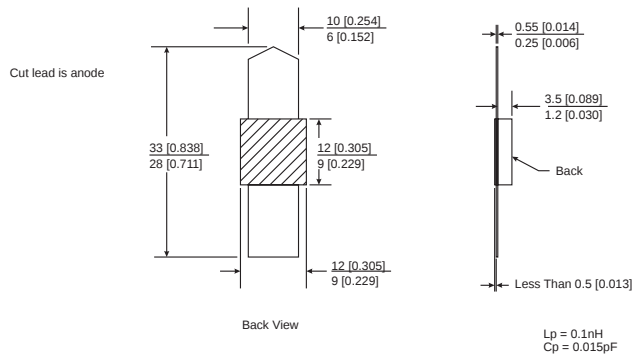
Model	Configuration	V_F TYP V	V_{BR} MIN V	C_T TYP / MAX pF	R_S TYP Ω	R_D MAX Ω	Outline
MSS60,144-E25	Single Junction	625	3.5	0.21 / 0.27	20	25	E25
MSS60,144-H20	Single Junction	625	3.5	0.24 / 0.30	20	25	H20
MSS60,148-E25	Single Junction	625	3.5	0.24 / 0.30	13	18	E25
MSS60,148-H20	Single Junction	625	3.5	0.27 / 0.33	13	18	H20
MSS60,153-E25	Single Junction	625	3.5	0.16 / 0.22	7	12	E25
MSS60,153-H20	Single Junction	625	3.5	0.24 / 0.30	7	12	H20
MSS60,244-E35	Series Tee	625	3.5	0.22 / 0.28	20	25	E35
MSS60,244-H30	Series Tee	625	3.5	0.30 / 0.36	20	25	H30
MSS60,248-E35	Series Tee	625	3.5	0.35 / 0.41	13	18	E35
MSS60,248-H30	Series Tee	625	3.5	0.43 / 0.50	13	18	H30
MSS60,253-E35	Ring Quad	625	3.5	0.22 / 0.28	7	12	E35
MSS60,253-H30	Ring Quad	625	3.5	0.35 / 0.41	7	12	H30
MSS60,444-E45	Ring Quad	650	3.5	0.24 / 0.30	20	25	E45
MSS60,448-E45	Ring Quad	650	3.5	0.32 / 0.38	13	18	E45
MSS60,448-H40	Ring Quad	650	3.5	0.42 / 0.48	13	18	E45
MSS60,453-E45	Ring Quad	650	3.5	0.26 / 0.30	7	12	E45
MSS60,453-H40	Ring Quad	650	3.5	0.32 / 0.38	7	12	H40
MSS60,841-E45	Ring Quad	1200	6.0	0.30 / 0.35	23	28	E45
MSS60,841-H40	Ring Quad	1200	6.0	0.40 / 0.45	23	28	H40
MSS60,846-E45	Ring Quad	1200	6.0	0.32 / 0.38	18	23	E45
MSS60,846-H40	Ring Quad	1200	6.0	0.42 / 0.48	18	23	H40
MSS60,848-E45	Ring Quad	1200	6.0	0.35 / 0.41	13	18	E45
MSS60,848-H40	Ring Quad	1200	6.0	0.44 / 0.51	13	18	H40
Test Conditions		$I_F =$ 1 mA	$I_R =$ 10 μ A	$V_R = 0\text{ V}$ $F = 1\text{ MHz}$	$I_F = 5\text{ mA}$		

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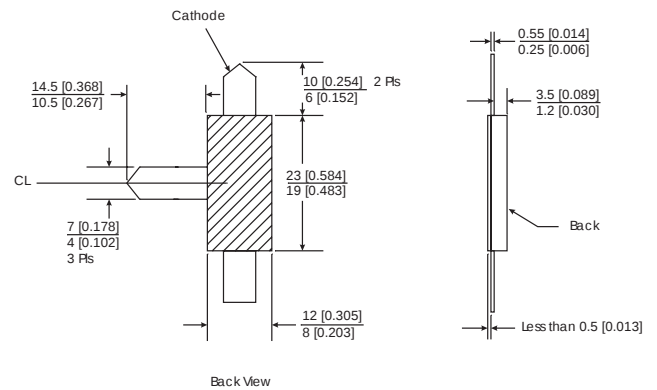


Outline Drawings

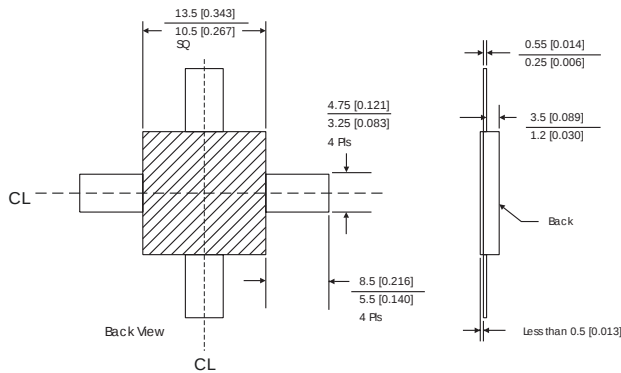
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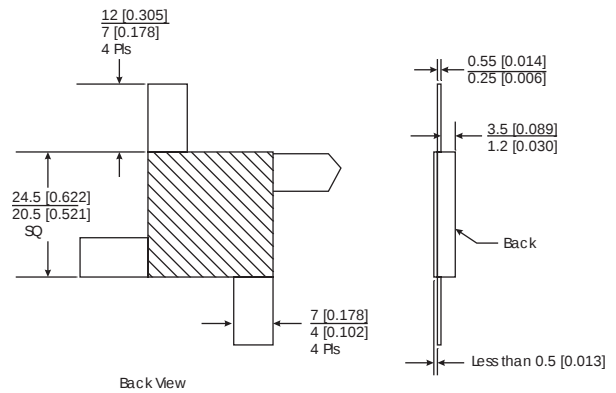
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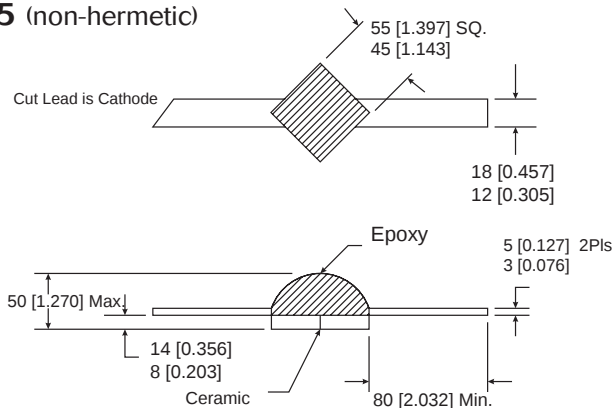
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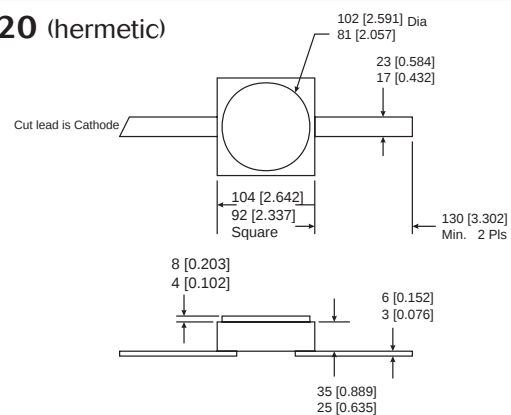
B80



E25 (non-hermetic)

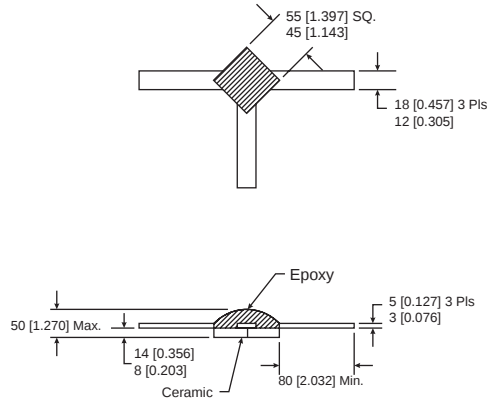


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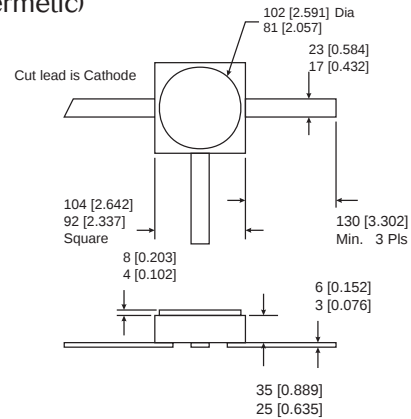


Outline Drawings

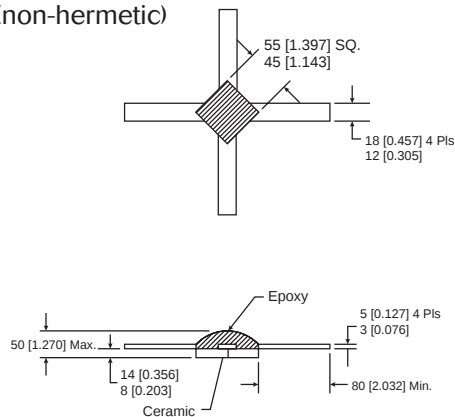
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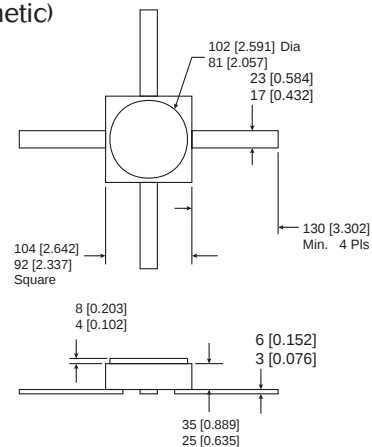
H30 (hermetic)



E45 (non-hermetic)



H40 (hermetic)



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