

MSS50-xxx-x Series



High Barrier Silicon Schottky Diodes

Rev. V1

Features

- V_F , R_D and C_J Matching Options
- Chip, Beam Lead and Packaged Devices
- Hi-Rel Screening per MIL-PRF-19500 and MIL-PRF-38534 Available

Description

The MSS50-xxx-x 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 +2 dBm to +8 dBm per diode.



Chip

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

Model	Configuration	V_F Typ. V	V_{BR} Min. V	C_J Typ. / Max. pF	R_S Typ. Ω	R_D Max. Ω	F_{CO} Typ. GHz	Outline
MSS50-048-C15	Single Junction	0.5	4	0.12 / 0.15	7	15	190	C15
MSS50-062-C16	Single Junction	0.5	5	0.50 / 0.55	2	12	160	C16
Test Conditions		$I_F = 1 \text{ mA}$	$I_R = 10 \mu\text{A}$	$V_R = 0 \text{ V}$ $F = 1 \text{ MHz}$	$I = 5 \text{ mA}$			

Beam Lead

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

Model	Configuration	V_F Typ. V	V_{BR} Min. V	C_J Typ. / Max. pF	R_S Typ. Ω	R_D Max. Ω	F_{CO} Typ. GHz	Outline
MSS50-146-B10B	Single Junction	0.52	5	0.07 / 0.12	9	18	253	B10B
MSS50-244-B20	Series Tee	0.52	4	0.15 / 0.20	7	16	183	B20
MSS50-448-B40	Ring Quad	0.52	10	0.20 / 0.25	6	14	133	B40
Test Conditions		$I_F = 1 \text{ mA}$	$I_R = 10 \mu\text{A}$	$V_R = 0 \text{ V}$ $F = 1 \text{ MHz}$	$I = 5 \text{ mA}$			

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Packaged

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

Model	Configuration	V_F Typ. V	V_{BR} Min. V	C_J Typ. / Max. pF	R_S Typ. Ω	R_D Max. Ω	F_{CO} Typ. GHz	Outline
MSS50-048-P55	Single Junction	0.50	4	0.24 / 0.30	12	10	190	P55
MSS50-048-P86	Single Junction	0.50	4	0.27 / 0.33	12	10	190	P86
MSS50-146-E25	Single Junction	0.52	5	0.20 / 0.26	15	12	253	E25
MSS50-146-H20	Single Junction	0.52	5	0.28 / 0.34	15	12	253	H20
MSS50-244-E30	Series Tee	0.52	5	0.30 / 0.36	7	16	183	E30
MSS50-244-H30	Series Tee	0.52	5	0.36 / 0.42	7	16	183	H30
MSS50-448-E45	Ring Quad	0.52	5	0.30 / 0.36	10	10	133	E45
MSS50-448-H40	Ring Quad	0.52	5	0.36 / 0.42	10	10	133	H40
Test Conditions		$I_F = 1 \text{ mA}$	$I_R = 10 \text{ }\mu\text{A}$	$V_R = 0 \text{ V}$ $F = 1 \text{ MHz}$	$I = 5 \text{ mA}$			

Absolute Maximum Ratings

Parameters	Rating
Reverse Voltage	Rated V_{BR}
Forward Current	50 mA
Power Dissipation	100 mW, per junction @ $T_A = 25^\circ\text{C}$, derate linearly to 0 @ $T_A = +150^\circ\text{C}$
Operating Temperature	-65°C to $+150^\circ\text{C}$
Storage Temperature	-65°C to $+150^\circ\text{C}$
Soldering Temperature (packaged)	$+230^\circ\text{C}$ for 5 seconds
Beam Lead Pull Strength	4 G minimum

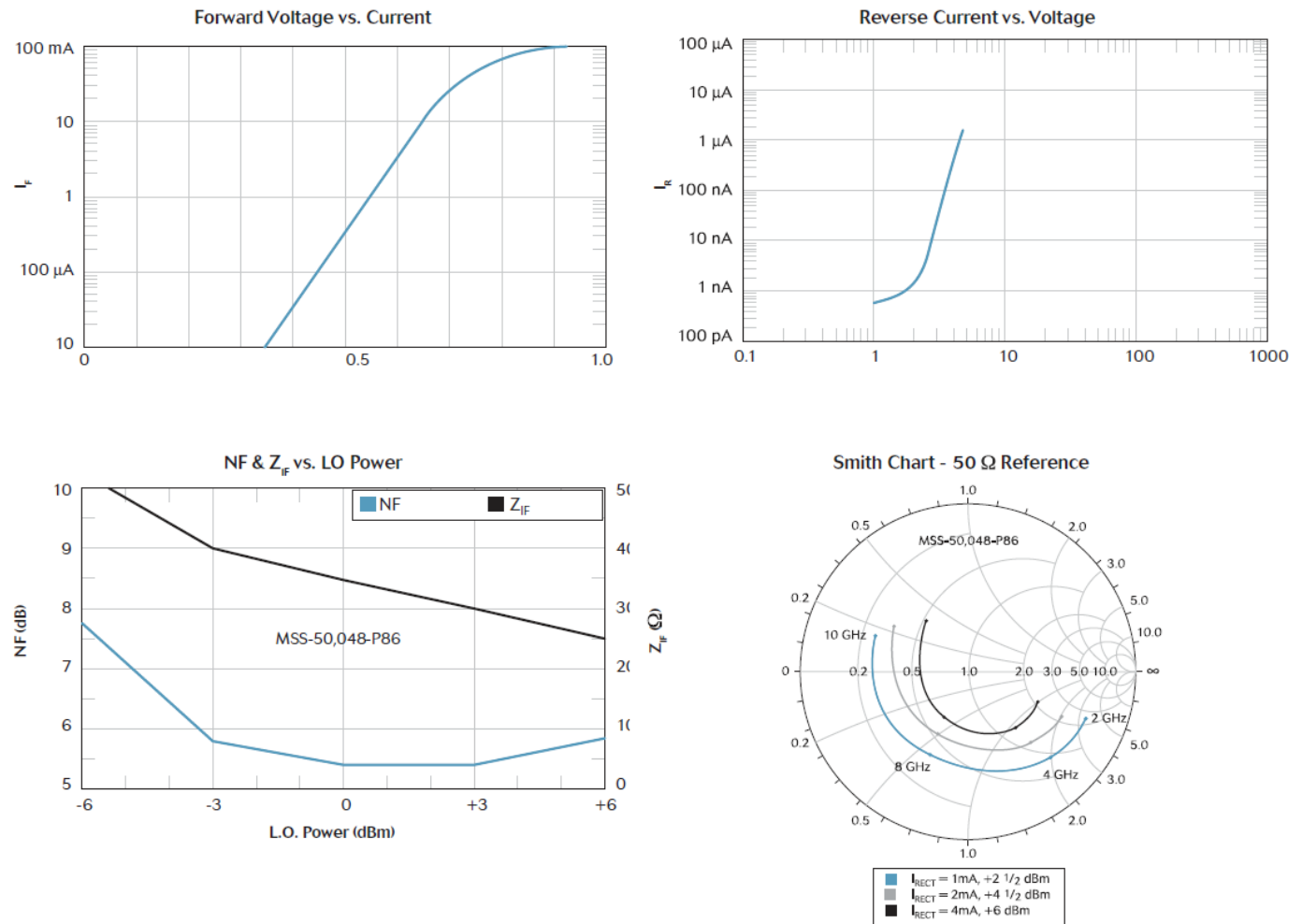
MSS50-xxx-x Series



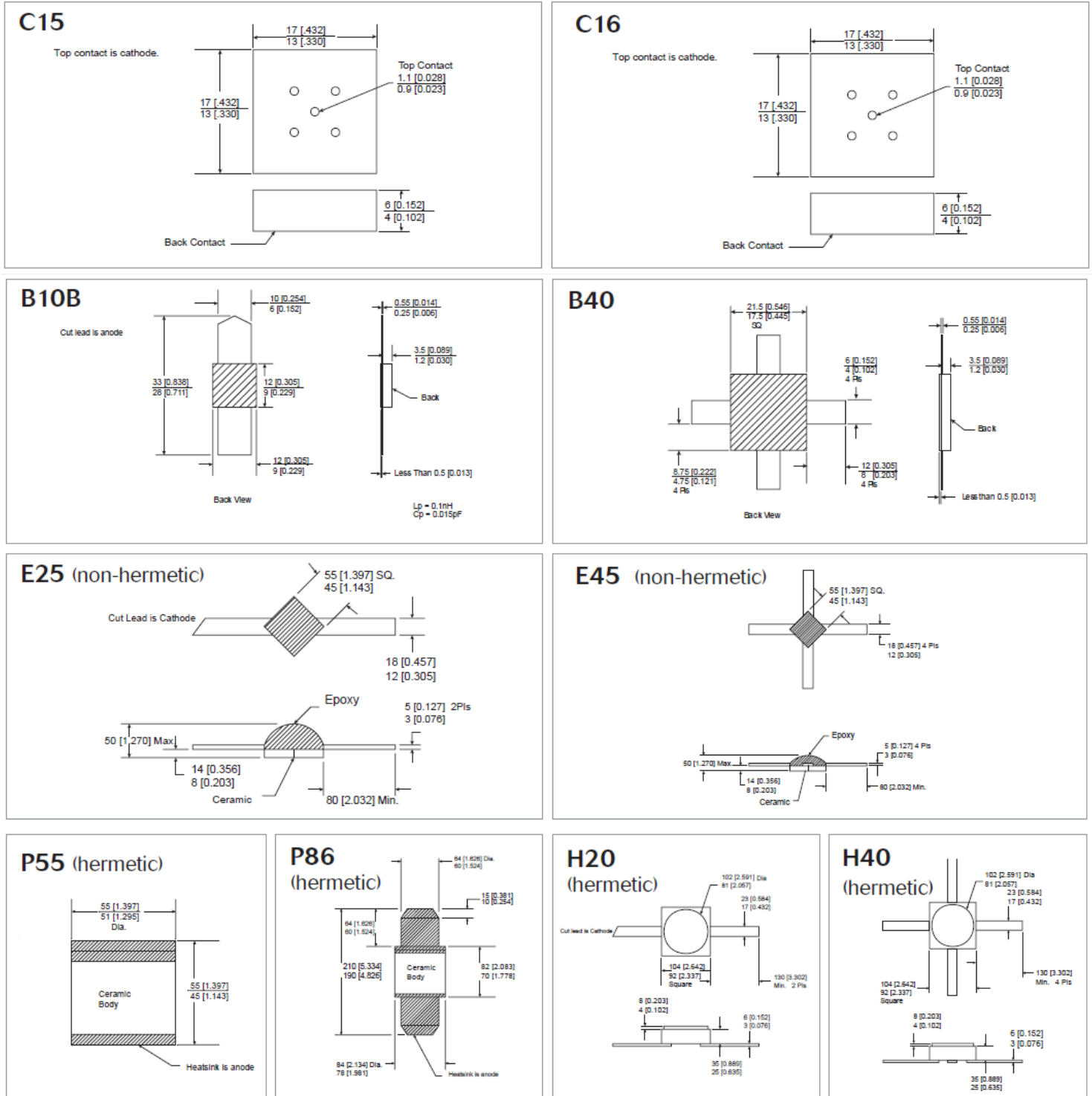
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Typical Performance Curves: $T_A = 25^\circ\text{C}$



Outline Drawings



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