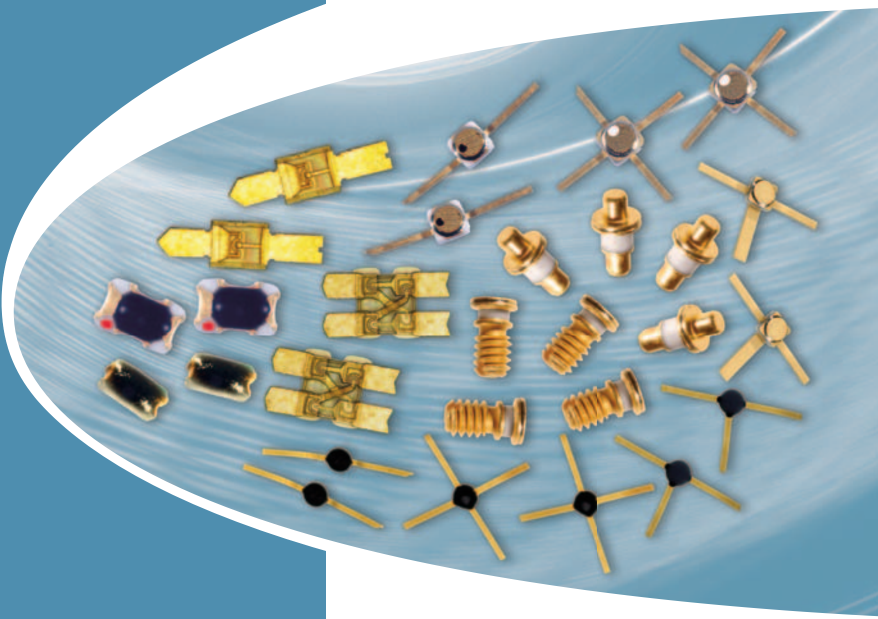
AEROFLEX METELICS

Microwave Diodes

Schottky
Varactor
PIN
Step Recovery
Planar Tunnel
MOS / MIS Capacitors



Short Form Catalog

2006

The Experience and Resources to Deliver the Technological Edge

In many electronics applications, there is simply no margin for error. Second best can be fatal. That is why manufacturers look to Metelics for advanced microwave diodes, because in the critical areas of electronic countermeasures, communications and radar, we provide the technological edge.

Metelics' advanced capabilities are the result of integrating technological expertise with other resources to produce the most advanced microwave diodes available.

Today, Metelics is in the forefront of technology. Under the direction of our research staff, we have developed a very unique process technology which has made it possible for Metelics to achieve large production of highest FCO Schottkys and SRDs which have the lowest transition times available today.

Metelics has a team of scientists, device physicists and process engineers working together to optimize device performance in the characterization of existing products as well as in the development of next generation diodes.

Metelics has the technical and manufacturing resources necessary to deliver to the most demanding prime contractors. We maintain painstaking quality control at each stage of fabrication, assembly and test and delivery to meet stringent MIL-SPEC requirements. Metelics' technical, production and program management personnel work with customers in meeting delivery schedules on time, both for standard and customer-specified products.

Our most important priority is the customer. An on-line integrated information system tracks projects and orders through engineering, production and quality control. This closed-loop system provides customers with essential information on current project schedules and status. Equally important, customers work closely with key company personnel to ensure that all diodes are designed and manufactured to comply with their performance and quality standards.

PERRY JOHNSON REGISTRARS, INC. ISO 9001: 2000

Table of Contents

Schottky Diodes for Detector Applications

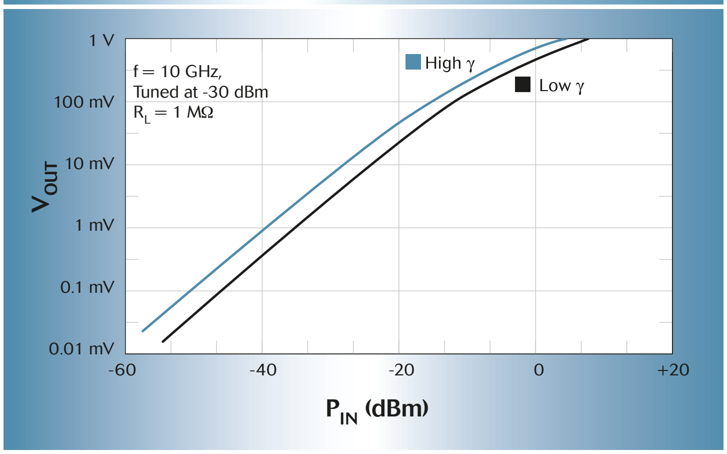
These diodes are fabricated on P-Type substrates for low 1/f noise and are optimized for either zero-bias (MSS20,XXX series) or biased (MSS39,XXX) operation. Zero-based devices are processed to yield two distinct video impedance classes, one 1,500 Ohms typical and the other 4,000 Ohms typical. Applications requiring maximum stability and sensitivity will favor the higher video impedance. Biased detector operation offers the designer improved temperature stability and video impedance flexibility via bias current selection.

Zero Bias, $V_{BR} = 0.8$ V min.

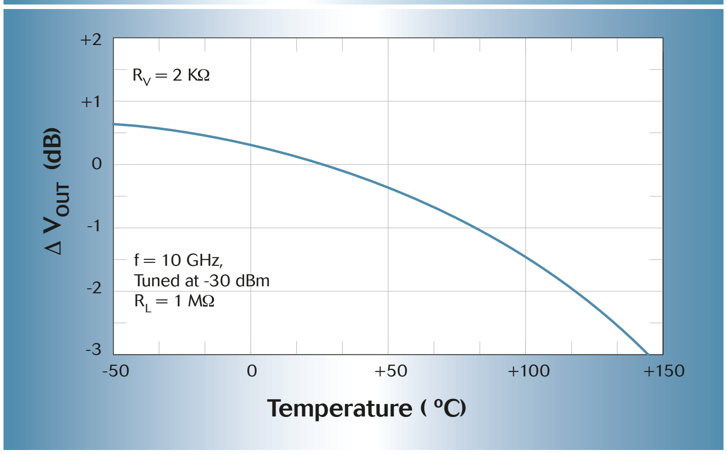
Chip and Beam Lead

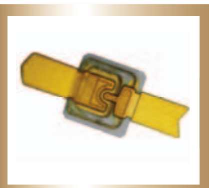
Model	C_J		γ	R_V		T_{SS}	$F_{req.}$	Package
	TYP pF	MAX pF	TYP mV / mW	TYP Ω	MAX Ω	TYP dBm	TYP GHz	
MSS20,046-C15	0.08	0.10	5,000	1,500	2,000	-58	18	C15p
MSS20,047-C15	0.08	0.10	8,000	4,000	6,000	-59	18	C15p
MSS20,050-C15	0.12	0.15	5,000	1,500	2,000	-58	12	C15p
MSS20,051-C15	0.12	0.15	8,000	4,000	6,000	-59	12	C15p
MSS20,054-C15	0.18	0.20	5,000	1,500	2,000	-58	8	C15p
MSS20,055-C15	0.18	0.20	8,000	4,000	6,000	-59	8	C15p
MSS20,140-B10D	0.06	0.08	5,000	1,500	2,000	-58	40	B10D
MSS20,141-B10D	0.06	0.08	8,000	4,000	6,000	-59	40	B10D
MSS20,142-B10D	0.08	0.10	5,000	1,500	2,000	-58	26	B10D
MSS20,143-B10D	0.08	0.10	8,000	4,000	6,000	-59	26	B10D
MSS20,145-B10D	0.10	0.12	5,000	1,500	2,000	-58	18	B10D
MSS20,146-B10D	0.10	0.12	8,000	4,000	6,000	-59	18	B10D
Test Conditions	$V_R = 0.5$ V F = 1 MHz		F = 10 GHz $P_{IN} = -30$ dBm $R_L = 1$ MΩ Video BW = 500 KHz NF = 3 dB					

Detected Output vs. RF Input Power



Detector Output vs. Temperature





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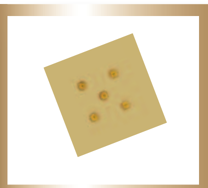
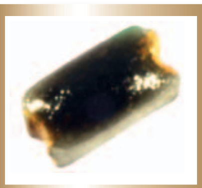


C15p

Zero Bias, $V_{BR} = 0.8$ V min.

Packaged

Model	C_T TYP pF	C_T MAX pF	γ TYP mV / mW	R_V TYP Ω	R_V MAX Ω	T_{SS} TYP dBm	C_P TYP pF	L_P TYP nH	$F_{req.}$ MAX GHz	Package
MSS20,140-0402	0.12	0.15	5,000	1,500	2,000	-58	0.05	0.25	26	0402
MSS20,141-0402	0.12	0.15	8,000	4,000	6,000	-59	0.05	0.25	26	0402
MSS20,142-0402	0.15	0.18	5,000	1,500	2,000	-58	0.05	0.25	20	0402
MSS20,143-0402	0.15	0.18	8,000	4,000	6,000	-59	0.05	0.25	20	0402
MSS20,145-0402	0.18	0.20	5,000	1,500	2,000	-58	0.05	0.25	18	0402
MSS20,146-0402	0.18	0.20	8,000	4,000	6,000	-59	0.05	0.25	18	0402
MSS20,046-H27	0.20	0.25	5,000	1,500	2,000	-58	0.12	0.4	18	H27
MSS20,046-E25	0.15	0.20	5,000	1,500	2,000	-58	0.07	0.4	18	E25
MSS20,046-T86	0.26	0.31	5,000	1,500	2,000	-58	0.18	1.0	12	T86p
MSS20,046-0805-2	0.14	0.20	5,000	1,500	2,000	-58	0.06	0.4	20	0805-2
MSS20,047-H27	0.20	0.25	8,000	4,000	6,000	-59	0.12	0.4	18	H27
MSS20,047-E25	0.15	0.20	8,000	4,000	6,000	-59	0.07	0.4	18	E25
MSS20,047-T86	0.26	0.31	8,000	4,000	6,000	-59	0.18	1.0	12	T86p
MSS20,047-0805-2	0.14	0.20	8,000	4,000	6,000	-59	0.06	0.4	20	0805-2
MSS20,050-H27	0.24	0.30	5,000	1,500	2,000	-58	0.12	0.4	12	H27
MSS20,050-E25	0.20	0.25	5,000	1,500	2,000	-58	0.07	0.4	12	E25
MSS20,050-T86	0.30	0.36	5,000	1,500	2,000	-58	0.18	1.0	12	T86p
MSS20,050-0805-2	0.18	0.25	5,000	1,500	2,000	-58	0.06	0.4	18	0805-2
MSS20,051-H27	0.24	0.30	8,000	4,000	6,000	-59	0.12	0.4	12	H27
MSS20,051-E25	0.20	0.25	8,000	4,000	6,000	-59	0.07	0.4	12	E25
MSS20,051-T86	0.30	0.36	8,000	4,000	6,000	-59	0.18	1.0	12	T86p
MSS20,051-0805-2	0.18	0.25	8,000	4,000	6,000	-59	0.06	0.4	18	0805-2
MSS20,054-H27	0.30	0.35	5,000	1,500	2,000	-58	0.12	0.4	8	H27
MSS20,054-E25	0.25	0.30	5,000	1,500	2,000	-58	0.07	0.4	8	E25
MSS20,054-T86	0.36	0.41	5,000	1,500	2,000	-58	0.18	1.0	8	T86p
MSS20,054-0805-2	0.24	0.30	5,000	1,500	2,000	-58	0.06	0.4	12	0805-2
MSS20,055-H27	0.30	0.35	8,000	4,000	6,000	-59	0.12	0.4	8	H27
MSS20,055-E25	0.25	0.30	8,000	4,000	6,000	-59	0.07	0.4	8	E25
MSS20,055-T86	0.36	0.41	8,000	4,000	6,000	-59	0.18	1.0	8	T86p
MSS20,055-0805-2	0.24	0.30	8,000	4,000	6,000	-59	0.06	0.4	12	0805-2
Test Conditions	$V_R = 0.5$ V F = 1 MHz		F = 10 GHz $P_{IN} = -30$ dBm $R_L = 1$ MΩ Video BW = 500 KHz NF = 3 dB							



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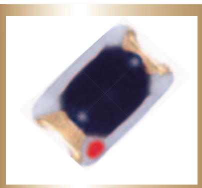

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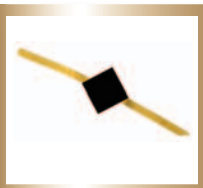


E25

H27

T86p

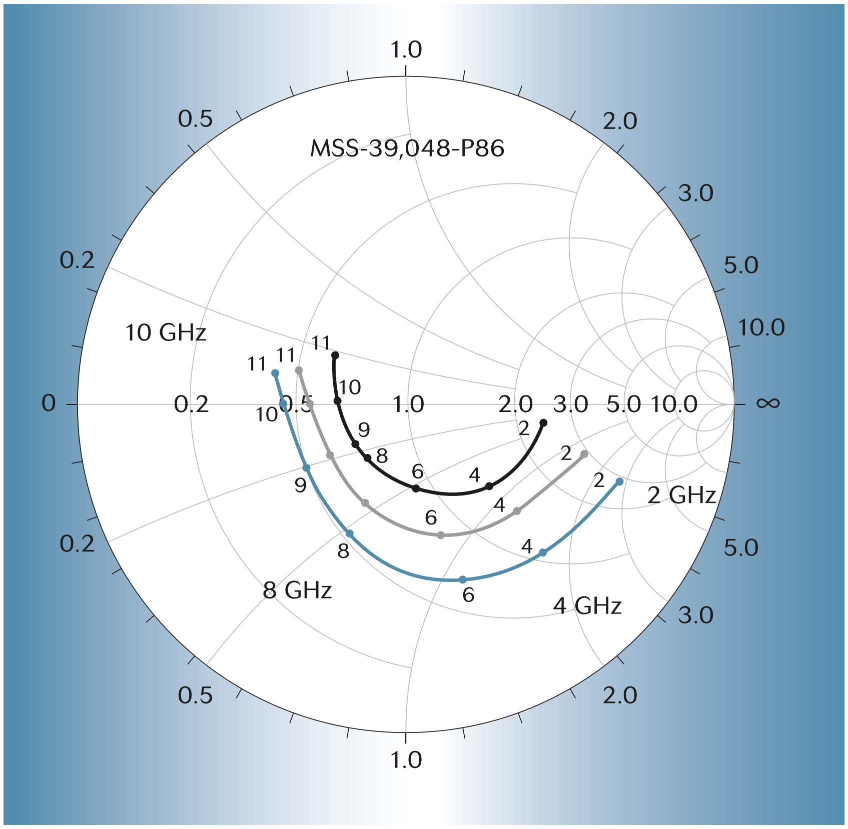
Schottky Diodes for Detector Applications

Biased P-Type, $V_F = 350 \sim 450$ mV

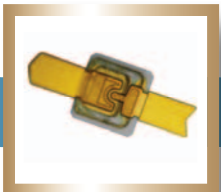
Chip and Beam Lead

Model	V_{BR} MIN V	C_J TYP pF	C_J MAX pF	γ TYP mV / mW	T_{SS} TYP dBm	$F_{req.}$ TYP GHz	Package
MSS39,045-C15	5.0	0.08	0.10	5,000	-58	18	C15P
MSS39,048-C15	5.0	0.12	0.15	5,000	-58	12	C15P
MSS39,144-B10B	3.5	0.06	0.08	5,000	-58	40	B10B
MSS39,146-B10B	3.5	0.08	0.10	5,000	-58	26	B10B
MSS39,148-B10B	3.5	0.10	0.12	5,000	-58	20	B10B
MSS39,152-B10B	3.5	0.15	0.18	5,000	-58	18	B10B
Test Conditions	$I_R = 10\ \mu A$	$V_R = 0$ V, F = 1 MHz		F = 10 GHz DC BIAS = 20 µA, Video BW = 2 MHz $R_L = 100\ k\Omega$			

Smith Chart - 50 Ω Reference



■	$I_{RECT} = 1$ mA, + 1/2 dBm
■	$I_{RECT} = 2$ mA, + 3 dBm
■	$I_{RECT} = 4$ mA, + 6 dBm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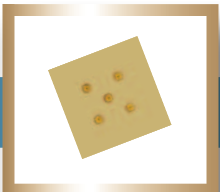
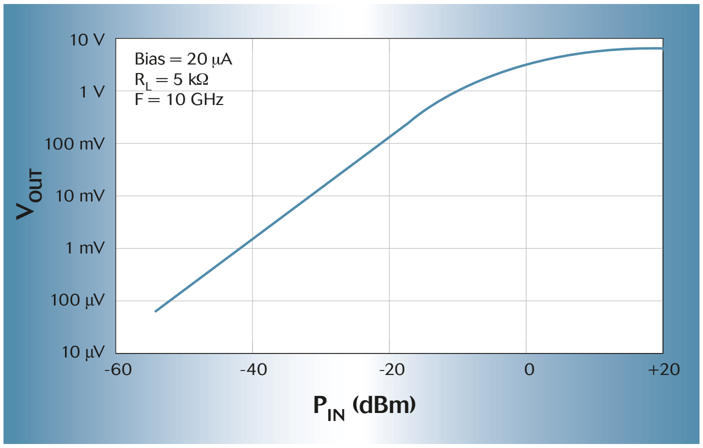

C15P

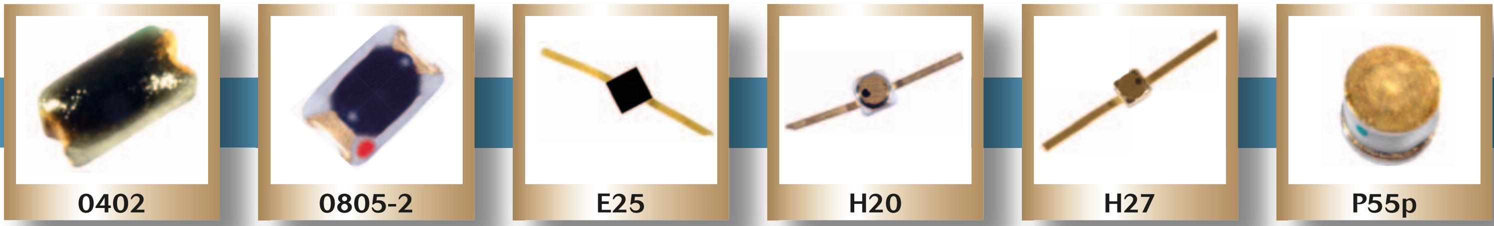
Biased P-Type, $V_F = 350 \sim 450$ mV

Packaged

Model	C_T TYP pF	C_T MAX pF	γ TYP mV / mW	T_{SS} TYP dBm	C_P TYP pF	L_P TYP nH	Package
MSS39,045-P55	0.21	0.26	5,000	-58	0.13	0.35	P55p
MSS39,045-P86	0.23	0.23	5,000	-58	0.15	1.0	P86p
MSS39,048-P55	0.25	0.31	5,000	-58	0.13	0.35	P55p
MSS39,048-P86	0.27	0.33	5,000	-58	0.15	1.0	P86p
MSS39,144-H27	0.18	0.24	5,000	-58	0.12	0.4	H27
MSS39,144-0402	0.11	0.16	5,000	-58	0.05	0.25	0402
MSS39,144-0805-2	0.12	0.17	5,000	-58	0.06	0.4	0805-2
MSS39,146-H27	0.20	0.25	5,000	-58	0.12	0.4	H27
MSS39,146-0402	0.13	0.18	5,000	-58	0.05	0.25	0402
MSS39,146-0805-2	0.14	0.20	5,000	-58	0.06	0.4	0805-2
MSS39,148-E25	0.17	0.22	5,000	-58	0.07	0.4	E25
MSS39,148-H20	0.28	0.33	5,000	-58	0.18	0.5	H20
MSS39,148-0402	0.15	0.20	5,000	-58	0.05	0.25	0402
MSS39,148-0805-2	0.16	0.22	5,000	-58	0.06	0.4	0805-2
MSS39,152-E25	0.22	0.28	5,000	-58	0.07	0.4	E25
MSS39,152-H20	0.33	0.39	5,000	-58	0.18	0.5	H20
MSS39,152-0402	0.20	0.25	5,000	-58	0.05	0.25	0402
MSS39,152-0805-2	0.21	0.27	5,000	-58	0.06	0.4	0805-2
Test Conditions	$V_R = 0$ V, F = 1 MHz		F = 10 GHz DC BIAS = 20 µA, Video BW = 2 MHz $R_L = 100$ kΩ				

Detector Output Curve





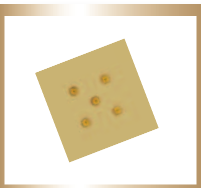
Schottky Diodes for Mixer Applications

Industry leading, state-of-the-art performance in five barrier heights and ten configurations featuring Aeroflex / Metelics dual passivation and tri-metalization for ultra-reliability. Designs supporting doubler, limiter, mixer and sampler applications up to 40+ GHz. Chip, beam lead and packaged diodes for commercial, aerospace and defense environments. Parametric selection / matching as well as screening per MIL-PRF-19500 and MIL-PRF-38534 is available.

Low Barrier, $V_F = 230 \sim 350$ mV, $V_{BR} = 2$ V min.

Chip and Beam Lead

Model	Configuration	C_J TYP pF	C_J MAX pF	R_D MAX Ω	R_S TYP Ω	F_{CO} TYP GHz	Package
MSS30,046-C15	Single Junction	0.10	0.12	18	10	160	C15
MSS30,050-C15	Single Junction	0.15	0.18	15	6	175	C15
MSS30,142-B10B	Single Junction	0.07	0.10	22	13	175	B10B
MSS30,148-B10B	Single Junction	0.12	0.15	15	7	190	B10B
MSS30,154-B10B	Single Junction	0.22	0.25	12	3	240	B10B
MSS30,242-B20	Series Tee	0.07	0.10	22	13	175	B20
MSS30,248-B20	Series Tee	0.12	0.15	15	7	190	B20
MSS30,254-B20	Series Tee	0.22	0.25	12	3	240	B20
MSS30,346-B21	Anti-Parallel Pair	0.27	0.30	16	11	55	B21
MSS30,442-B42	Ring Quad	0.07	0.10	22	13	175	B42
MSS30,448-B42	Ring Quad	0.12	0.15	15	7	190	B42
MSS30,454-B40	Ring Quad	0.22	0.25	12	3	240	B40
MSS30,B46-B45	Bridge Quad	0.10	0.125	25	15	80	B45
MSS30,B53-B45	Bridge Quad	0.20	0.25	15	5	80	B45
MSS30,CR46-B49	Crossover Ring Quad	0.09	0.125	22	10	118	B49
MSS30,CR53-B49	Crossover Ring Quad	0.15	0.250	15	5	106	B49
MSS30,PCB46-B48	Coplanar Bridge Quad	0.08	0.12	20	7	166	B48
MSS30,PCR46-B47	Coplanar Ring Quad	0.07	0.13	22	10	152	B47
MSS30,PCR53-B47	Coplanar Ring Quad	0.15	0.25	15	5	106	B47
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			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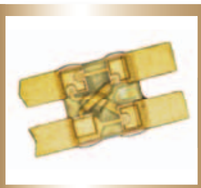
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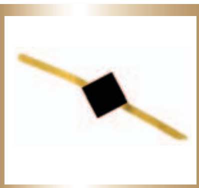
Low Barrier, $V_F = 230 \sim 350$ mV, $V_{BR} = 2$ V min.

Packaged

Model	Configuration	C_T TYP pF	C_T MAX pF	R_D MAX Ω	C_P TYP pF	L_P TYP nH	Package
MSS30,046-P55	Single Junction	0.23	0.30	18	0.13	0.35	P55
MSS30,046-P86	Single Junction	0.25	0.33	18	0.15	1.0	P86
MSS30,050-P55	Single Junction	0.28	0.35	15	0.13	0.35	P55
MSS30,050-P86	Single Junction	0.30	0.38	15	0.15	1.0	P86
MSS30,142-E25	Single Junction	0.14	0.26	22	0.07	0.4	E25
MSS30,142-H20	Single Junction	0.25	0.31	22	0.18	0.5	H20
MSS30,148-E25	Single Junction	0.21	0.31	15	0.07	0.4	E25
MSS30,148-H20	Single Junction	0.30	0.36	15	0.18	0.5	H20
MSS30,154-E25	Single Junction	0.30	0.41	12	0.07	0.4	E25
MSS30,154-H20	Single Junction	0.40	0.46	12	0.18	0.5	H20
MSS30,242-E35	Series Tee	0.15	0.21	22	0.07	0.4	E35
MSS30,242-H30	Series Tee	0.25	0.31	22	0.18	0.5	H30
MSS30,248-E35	Series Tee	0.20	0.25	15	0.07	0.4	E35
MSS30,248-H30	Series Tee	0.30	0.36	15	0.18	0.5	H30
MSS30,254-E35	Series Tee	0.30	0.35	12	0.07	0.4	E35
MSS30,254-H30	Series Tee	0.40	0.46	12	0.18	0.5	H30
MSS30,346-E25	Anti-Parallel Pair	0.35	0.40	16	0.07	0.4	E25
MSS30,346-H20	Anti-Parallel Pair	0.45	0.50	16	0.18	0.5	H20
MSS30,442-E45	Ring Quad	0.15	0.21	22	0.07	0.4	E45
MSS30,442-H40	Ring Quad	0.25	0.33	22	0.18	0.5	H40
MSS30,448-E45	Ring Quad	0.20	0.26	15	0.07	0.4	E45
MSS30,448-H40	Ring Quad	0.30	0.35	15	0.18	0.5	H40
MSS30,454-E45	Ring Quad	0.30	0.35	12	0.07	0.4	E45
MSS30,454-H40	Ring Quad	0.40	0.46	12	0.18	0.5	H40
MSS30,B46-E45	Bridge Quad	0.17	0.25	25	0.07	0.4	E45
MSS30,B46-H40	Bridge Quad	0.28	0.35	25	0.18	0.5	H40
MSS30,B53-E45	Bridge Quad	0.27	0.35	15	0.07	0.4	E45
MSS30,B53-H40	Bridge Quad	0.38	0.46	15	0.18	0.5	H40
MSS30,CR46-E45	Crossover Ring Quad	0.16	0.22	22	0.07	0.4	E45
MSS30,CR46-H40	Crossover Ring Quad	0.27	0.33	22	0.18	0.5	H40
MSS30,CR53-E45	Crossover Ring Quad	0.22	0.35	15	0.07	0.4	E45
MSS30,CR53-H40	Crossover Ring Quad	0.33	0.45	15	0.18	0.5	H40
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			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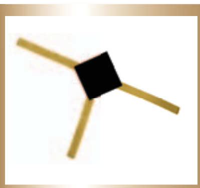
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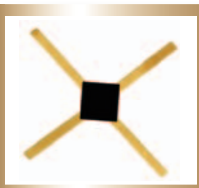
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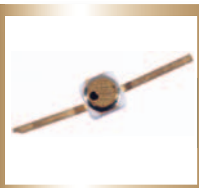
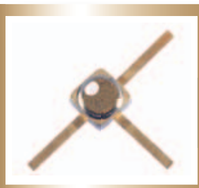

H20


H30


H40

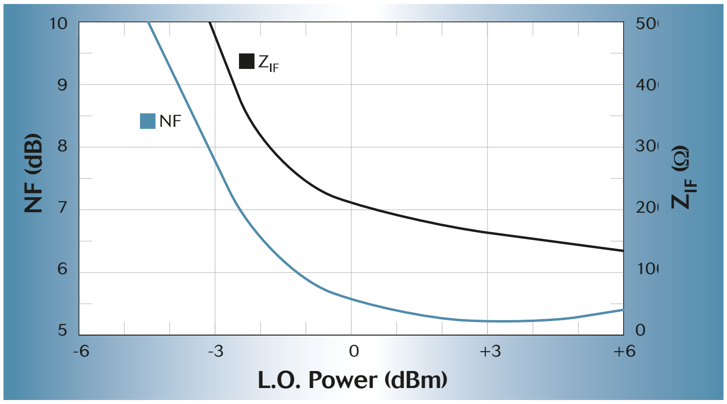
Schottky Diodes for Mixer Applications

Medium Barrier, $V_F = 350 \sim 450$ mV, $V_{BR} = 3$ V min.

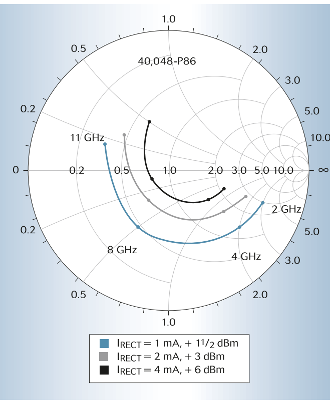
Chip and Beam Lead

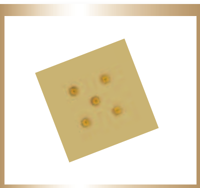
Model	Configuration	C_J TYP pF	C_J MAX pF	R_D MAX Ω	R_S TYP Ω	F_{CO} TYP GHz	Package
MSS40,045-C15	Single Junction	0.09	0.12	15	7	253	C15
MSS40,048-C15	Single Junction	0.12	0.15	15	7	190	C15
MSS40,141-B10B	Single Junction	0.06	0.10	22	10	265	B10B
MSS40,148-B10B	Single Junction	0.12	0.15	17	7	190	B10B
MSS40,155-B10B	Single Junction	0.25	0.30	13	5	127	B10B
MSS40,244-B20	Series Tee	0.08	0.12	22	19	105	B20
MSS40,248-B20	Series Tee	0.12	0.15	17	10	133	B20
MSS40,255-B20	Series Tee	0.25	0.30	15	5	127	B20
MSS40,448-B42	Ring Quad	0.12	0.15	17	7	190	B42
MSS40,455-B40	Ring Quad	0.25	0.30	17	5	127	B40
MSS40,B46-B45	Bridge Quad	0.10	0.13	25	15	106	B45
MSS40,B53-B45	Bridge Quad	0.20	0.25	15	5	160	B45
MSS40,CR46-B49	Crossover Ring Quad	0.09	0.125	22	10	177	B49
MSS40,CR53-B49	Crossover Ring Quad	0.15	0.25	15	5	212	B49
MSS40,PCR46-B47	Coplanar Ring Quad	0.07	0.13	22	10	227	B47
MSS40,PCR53-B47	Coplanar Ring Quad	0.15	0.25	15	5	212	B47
MSS40,PCB46-B48	Coplanar Bridge Quad	0.08	0.12	20	7	190	B48
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			

NF & Z_{IF} vs. LO Power



Smith Chart - 50 Ω Reference

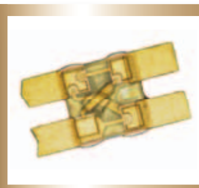



C15


B42


B45


B47


B48

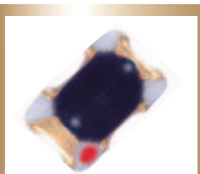

B49

Medium Barrier, $V_F = 350 \sim 450$ mV, $V_{BR} = 3$ V min.

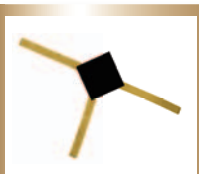
Packaged

Model	Configuration	C_T TYP pF	C_T MAX pF	R_D MAX Ω	C_P TYP pF	L_P TYP nH	Package
MSS40,045-P55	Single Junction	0.22	0.28	15	0.13	0.35	P55
MSS40,045-P86	Single Junction	0.24	0.30	15	0.15	1.0	P86
MSS40,048-P55	Single Junction	0.25	0.30	15	0.13	0.35	P55
MSS40,048-P86	Single Junction	0.27	0.33	15	0.15	1.0	P86
MSS40,141-E25	Single Junction	0.13	0.22	18	0.07	0.4	E25
MSS40,141-H20	Single Junction	0.24	0.30	18	0.18	0.5	H20
MSS40,141-0402	Single Junction	0.11	0.18	18	0.05	0.25	0402
MSS40,148-E25	Single Junction	0.19	0.28	15	0.07	0.4	E25
MSS40,148-H20	Single Junction	0.30	0.36	15	0.18	0.5	H20
MSS40,148-0402	Single Junction	017	0.24	15	0.05	0.25	0402
MSS40,155-E25	Single Junction	0.32	0.41	14	0.07	0.4	E25
MSS40,155-H20	Single Junction	0.43	0.51	14	0.18	0.5	H20
MSS40,155-0402	Single Junction	030	0.38	14	0.05	0.25	0402
MSS40,244-E35	Series Tee	0.15	0.24	28	0.07	0.4	E35
MSS40,244-0805-4	Series Tee	0.29	0.36	28	0.06	0.4	0805-4
MSS40,248-E35	Series Tee	0.19	0.28	18	0.07	0.4	E35
MSS40,248-0805-4	Series Tee	0.18	0.25	18	0.06	0.4	0805-4
MSS40,255-E35	Series Tee	0.32	0.41	14	0.07	0.4	E35
MSS40,255-0805-4	Series Tee	0.17	0.40	14	0.06	0.4	0805-4
MSS40,448-E45	Ring Quad	0.19	0.25	15	0.07	0.4	E45
MSS40,448-H40	Ring Quad	0.30	0.36	15	0.18	0.5	H40
MSS40,455-E45	Ring Quad	0.32	0.40	14	0.07	0.4	E45
MSS40,455-H40	Ring Quad	0.42	0.52	14	0.18	0.5	H40
MSS40,B46-E45	Bridge Quad	0.17	0.24	25	0.07	0.4	E45
MSS40,B53-E45	Bridge Quad	0.27	0.36	15	0.07	0.4	E45
MSS40,CR46-E45	Crossover Ring Quad	0.16	0.23	15	0.07	0.4	E45
MSS40,CR46-H40	Crossover Ring Quad	0.27	0.35	15	0.18	0.5	H40
MSS40,CR53-E45	Crossover Ring Quad	0.22	0.35	15	0.07	0.4	E45
MSS40,CR53-H40	Crossover Ring Quad	0.33	0.46	15	0.18	0.5	H40
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			


0402


0805-4


E25


E35


H40


P55

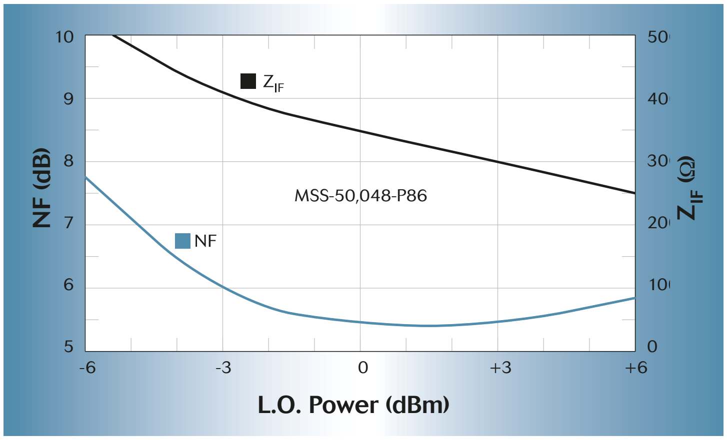
Schottky Diodes for Mixer Applications

High Barrier, $V_F = 450 \sim 550$ mV, $V_{BR} = 4$ V min.

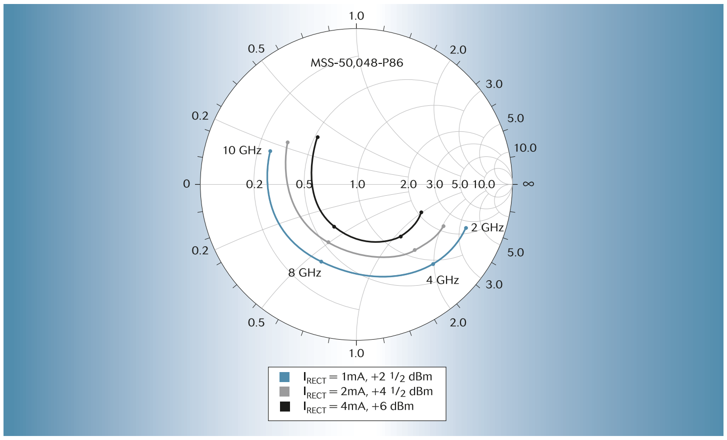
Chip and Beam Lead

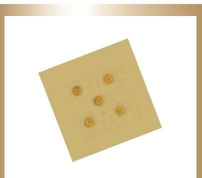
Model	Configuration	C_J TYP pF	C_J MAX pF	R_D MAX Ω	R_S TYP Ω	F_{CO} TYP GHz	Package
MSS50,048-C15	Single Junction	0.12	0.15	15	7	190	C15
MSS50,062-C16	Single Junction	0.50	0.55	12	2	160	C16
MSS50,146-B10B	Single Junction	0.07	0.12	18	9	253	B10B
MSS50,155-B10B	Single Junction	0.25	0.30	15	7	90	B10B
MSS50,244-B20	Series Tee	0.15	0.20	16	7	183	B20
MSS50,341-B21	Anti-Parallel Pair	0.20	0.26	16	7	114	B21
MSS50,448-B40	Ring Quad	0.20	0.25	14	6	133	B40
MSS50,B46-B45	Bridge Quad	0.10	0.13	20	10	159	B45
MSS50,B53-B45	Bridge Quad	0.20	0.25	15	5	159	B45
MSS50,CR46-B49	Crossover Ring Quad	0.09	0.125	22	10	177	B49
MSS50,CR53-B49	Crossover Ring Quad	0.15	0.25	15	5	212	B49
MSS50,PCB46-B48	Coplanar Bridge Quad	0.08	0.12	20	7	284	B48
MSS50,PCR46-B47	Coplanar Ring Quad	0.07	0.13	22	10	227	B47
MSS50,PCR53-B48	Coplanar Ring Quad	0.15	0.25	15	5	212	B47
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			

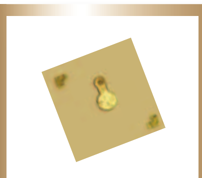
NF & Z_{IF} vs. LO Power



Smith Chart - 50 Ω Reference




C15


C16


B41


B45

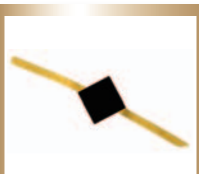

B47


B48

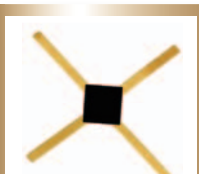
High Barrier, $V_F = 450 \sim 550$ mV, $V_{BR} = 4$ V min.

Packaged

Model	Configuration	C_T TYP pF	C_T MAX pF	R_D MAX Ω	C_P TYP pF	L_P TYP nH	Package
MSS50,048-P55	Single Junction	0.25	0.31	15	0.13	0.35	P55
MSS50,048-P86	Single Junction	0.27	0.33	15	0.15	1.0	P86
MSS50,062-P55	Single Junction	0.63	0.75	12	0.13	0.35	P55
MSS50,062-P86	Single Junction	0.65	0.78	12	0.15	1.0	P86
MSS50,146-E25	Single Junction	0.14	0.24	18	0.07	0.4	E25
MSS50,146-H20	Single Junction	0.25	0.34	18	0.18	0.5	H20
MSS50,146-0402	Single Junction	0.11	0.20	18	0.05	0.25	0402
MSS50,146-0805-2	Single Junction	0.12	0.22	18	0.06	0.4	0805-2
MSS50,155-E25	Single Junction	0.32	0.41	15	0.07	0.4	E25
MSS50,155-H20	Single Junction	0.43	0.51	15	0.18	0.5	H20
MSS50,155-0402	Single Junction	0.30	0.38	15	0.05	0.25	0402
MSS50,155-0805-2	Single Junction	0.31	0.40	15	0.06	0.4	0805-2
MSS50,244-E35	Series Tee	0.22	0.31	16	0.07	0.4	E35
MSS50,244-H30	Series Tee	0.33	0.42	16	0.18	0.5	H30
MSS50,244-0805-4	Series Tee	0.34	0.44	16	0.06	0.4	0805-4
MSS50,341-E25	Anti-Parallel Pair	0.27	0.36	16	0.07	0.4	E25
MSS50,341-H20	Anti-Parallel Pair	0.38	0.48	16	0.18	0.5	H20
MSS50,448-E45	Ring Quad	0.27	0.36	10	0.07	0.4	E45
MSS50,448-H40	Ring Quad	0.38	0.48	10	0.18	0.5	H40
MSS50,448-0805-4	Ring Quad	0.26	0.35	10	0.06	0.4	0805-4
MSS50,B46-E45	Bridge Quad	0.17	0.25	20	0.07	0.4	E45
MSS50,B46-H40	Bridge Quad	0.28	0.35	20	0.18	0.5	H40
MSS50,B53-E45	Bridge Quad	0.27	0.36	15	0.07	0.4	E45
MSS50,B53-H40	Bridge Quad	0.38	0.48	15	0.18	0.5	H40
MSS50,CR46-E45	Crossover Ring Quad	0.16	0.25	22	0.07	0.4	E45
MSS50,CR46-H40	Crossover Ring Quad	0.27	0.36	22	0.18	0.5	H40
MSS50,CR53-E45	Crossover Ring Quad	0.22	0.36	15	0.07	0.4	E45
MSS50,CR53-H40	Crossover Ring Quad	0.33	0.46	15	0.18	0.5	H40
Test Conditions		$V_R = 0$ V, F = 1 MHz		$I_F = 5$ mA			


E25


E35


E45


H20


H30


H40

Schottky Diodes for Mixer Applications

Extra High Barrier, V_F = 550 ~ 700 mV, V_{BR} = 3.5 V min.

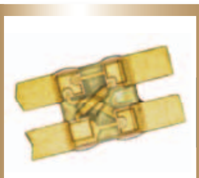
Chip and Beam Lead

Model	Configuration	C_J TYP pF	C_J MAX pF	R_D MAX Ω	R_S TYP Ω	F_{CO} TYP GHz	Package
MSS60,144-B10B	Single Junction	0.08	0.10	25	15	153	B10B
MSS60,148-B10B	Single Junction	0.12	0.15	18	10	133	B10B
MSS60,153-B10B	Single Junction	0.20	0.25	12	5	159	B10B
MSS60,244-B20	Series Tee	0.08	0.10	25	15	133	B20
MSS60,248-B20	Series Tee	0.12	0.15	18	7	133	B20
MSS60,253-B20	Series Tee	0.20	0.25	12	5	159	B20
MSS60,444-B42	Ring Quad	0.08	0.10	25	15	133	B42
MSS60,448-B42	Ring Quad	0.12	0.15	18	7	133	B42
MSS60,453-B41	Ring Quad	0.25	0.30	12	5	159	B41
MSS60,841-B80	8 Junction Ring Quad	0.06	0.08	28	18	133	B80
MSS60,846-B80	8 Junction Ring Quad	0.10	0.12	23	12	106	B80
MSS60,848-B80	8 Junction Ring Quad	0.12	0.15	18	7	133	B80
MSS60,B46-B45	Bridge Quad	0.10	0.13	25	15	106	B45
MSS60,B53-B45	Bridge Quad	0.20	0.25	18	7	114	B45
MSS60,CR46-B49	Crossover Ring Quad	0.09	0.125	22	10	177	B49
MSS60,CR53-B49	Crossover Ring Quad	0.15	0.25	15	7	152	B49
MSS60,PCB46-B48	Coplanar Bridge Quad	0.08	0.12	20	7	284	B48
MSS60,PCR46-B47	Coplanar Ring Quad	0.07	0.13	22	10	227	B47
MSS60,PCR53-B47	Coplanar Ring Quad	0.15	0.25	15	7	152	B47
Test Conditions		V_R = 0 V, F = 1 MHz		I_F = 5 mA			

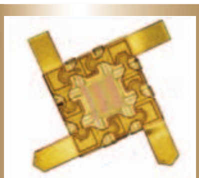

B42


B45


B47


B48

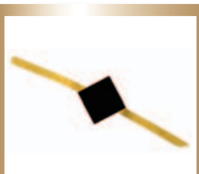

B49


B80

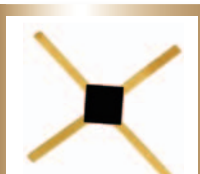
Extra High Barrier, $V_F = 550 \sim 700$ mV, $V_{BR} = 3.5$ V min.

Packaged

Model	Configuration	C_T TYP pF	C_T MAX pF	R_D MAX Ω	C_P TYP pF	L_P TYP nH	Package
MSS60,144-E25	Single Junction	0.15	0.22	25	0.07	0.4	E25
MSS60,144-H20	Single Junction	0.26	0.31	25	0.18	0.5	H20
MSS60,148-E25	Single Junction	0.19	0.28	18	0.07	0.4	E25
MSS60,148-H20	Single Junction	0.30	0.38	18	0.18	0.5	H20
MSS60,153-E25	Single Junction	0.27	0.36	12	0.07	0.4	E25
MSS60,153-H20	Single Junction	0.38	0.48	12	0.18	0.5	H20
MSS60,244-E35	Series Tee	0.15	0.22	25	0.07	0.4	E35
MSS60,244-H30	Series Tee	0.26	0.36	25	0.18	0.5	H30
MSS60,248-E35	Series Tee	0.19	0.28	18	0.07	0.4	E35
MSS60,248-H30	Series Tee	0.30	0.40	18	0.18	0.5	H30
MSS60,253-E35	Series Tee	0.27	0.37	12	0.07	0.4	E35
MSS60,253-H30	Series Tee	0.38	0.48	12	0.18	0.5	H30
MSS60,444-E45	Ring Quad	0.15	0.22	25	0.07	0.4	E45
MSS60,444-H40	Ring Quad	0.26	0.33	25	0.18	0.5	H40
MSS60,448-E45	Ring Quad	0.19	0.27	18	0.07	0.4	E45
MSS60,448-H40	Ring Quad	0.30	0.38	18	0.18	0.5	H40
MSS60,453-E45	Ring Quad	0.32	0.42	12	0.07	0.4	E45
MSS60,453-H40	Ring Quad	0.43	0.53	12	0.18	0.5	H40
MSS60,841-E45	8 Junction Ring Quad	0.13	0.20	28	0.07	0.4	E45
MSS60,841-H40	8 Junction Ring Quad	0.24	0.31	28	0.18	0.5	H40
MSS60,846-E45	8 Junction Ring Quad	0.17	0.24	23	0.07	0.4	E45
MSS60,846-H40	8 Junction Ring Quad	0.28	0.35	23	0.18	0.5	H40
MSS60,848-E45	8 Junction Ring Quad	0.19	0.27	18	0.07	0.4	E45
MSS60,848-H40	8 Junction Ring Quad	0.30	0.38	18	0.18	0.5	H40
MSS60,B46-E45	Bridge Quad	0.17	0.25	25	0.07	0.4	E45
MSS60,B46-H40	Bridge Quad	0.28	0.36	25	0.18	0.5	H40
MSS60,B53-E45	Bridge Quad	0.27	0.37	18	0.07	0.4	E45
MSS60,B53-H40	Bridge Quad	0.38	0.48	18	0.18	0.5	H40
MSS60,CR46-E45	Crossover Ring Quad	0.16	0.25	22	0.07	0.4	E45
MSS60,CR53-E45	Crossover Ring Quad	0.22	0.37	15	0.07	0.4	E45
Test Conditions		$V_R = 0$ V F = 1 MHz		$I_F = 5$ mA			


E25


E35


E45

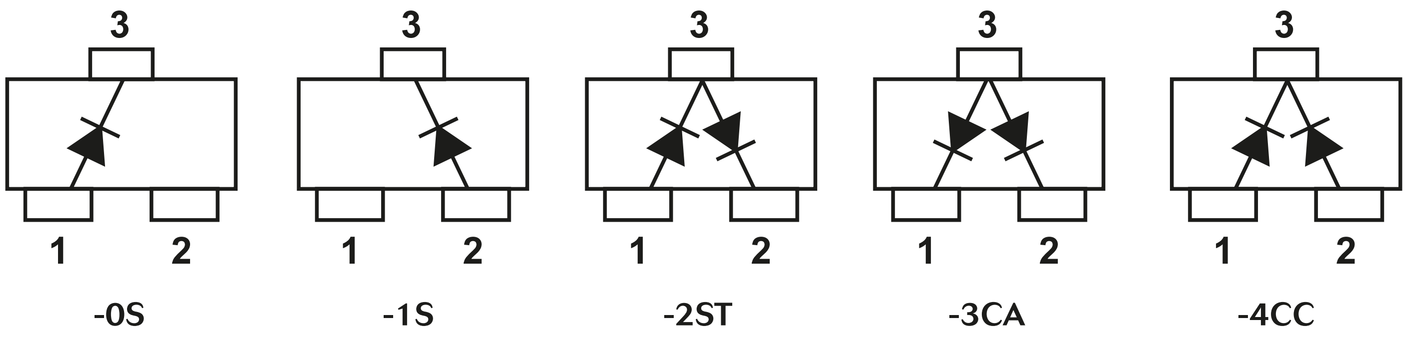

H20


H30


H40

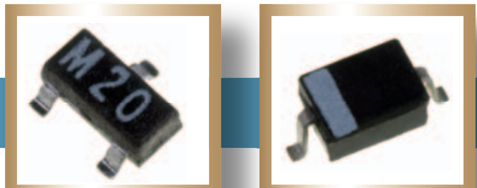
Plastic Surface Mount Packages

Configuration Codes



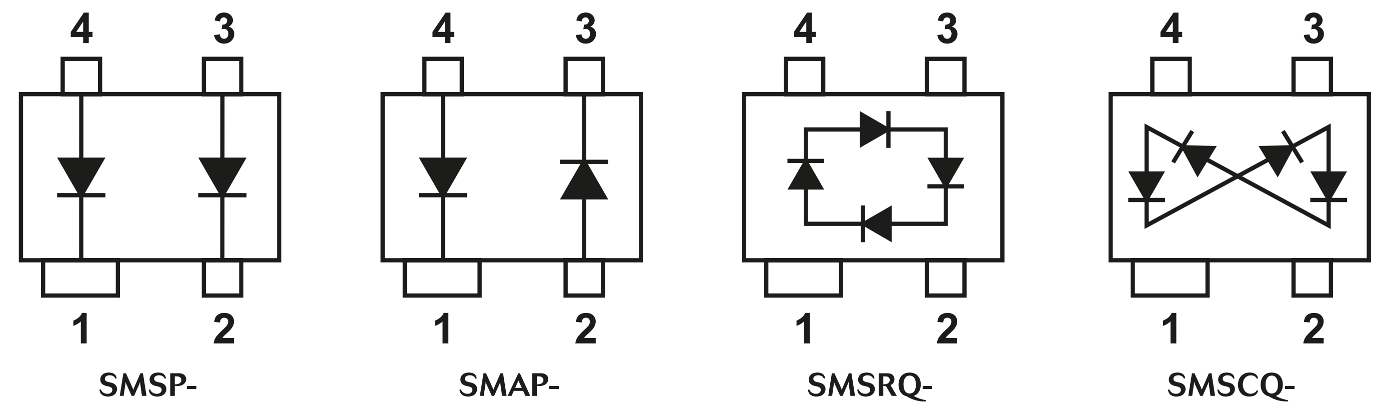
SOT23 & SOD323

Model	Configuration	V_{BR} MIN V	V_F TYP mV	C_T MAX pF	R_D MAX Ω	Package
SMST3012-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	270	0.25	15	SOT23
SMST4012-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	350	0.25	15	SOT23
SMST6012-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	630	0.25	15	SOT23
SMST3004-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	270	0.60	10	SOT23
SMST4004-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	350	0.60	10	SOT23
SMST6004-SOT23	-0S, 1S, 2ST, 3CA, 4CC	2.0	600	0.60	10	SOT23
SMSD3012-SOD323	- - -	2.0	270	0.25	15	SOD323
SMSD4012-SOD323	- - -	2.0	350	0.25	15	SOD323
SMSD6012-SOD323	- - -	2.0	630	0.25	15	SOD323
SMSD3004-SOD323	- - -	2.0	270	0.60	10	SOD323
SMSD4004-SOD323	- - -	2.0	350	0.60	10	SOD323
SMSD6004-SOD323	- - -	2.0	600	0.60	10	SOD323
Test Conditions		I_R = 10 µA	I_F = 1 mA	V_R = 0 V F = 1 MHz	I_F = 10 mA	



SOT23 SOD323

Configuration Codes



Plastic Packaged

Model	Configuration	V_{BR} MIN V	V_F TYP mV	C_T MAX pF	R_D MAX Ω	Package
SMSP3012-SOT143	Split Pair	2	270	0.40	15.0	SOT143
SMSP3004-SOT143	Split Pair	2	270	0.65	10.0	SOT143
SMAP3012-SOT143	Anti-Parallel Pair	2	270	0.40	15.0	SOT143
SMAP3004-SOT143	Anti-Parallel Pair	2	270	0.65	10.0	SOT143
SMSRQ1200-SOT143	Ring Quad	2	270	0.40	15.0	SOT143
SMSCQ1200-SOT143	Crossover Quad	2	270	0.40	15.0	SOT143
SMSRQ1500-SOT143	Ring Quad	2	270	0.65	8.0	SOT143
SMSCQ1500-SOT143	Crossover Quad	2	270	0.65	8.0	SOT143
SMSRQ2500-SOT143	Ring Quad	2	400	0.65	10.0	SOT143
SMSCQ2500-SOT143	Crossover Quad	2	400	0.65	10.0	SOT143
SMSRQ4500-SOT143	Ring Quad	3	600	0.65	8.0	SOT143
SMSCQ4500-SOT143	Crossover Quad	3	600	0.65	8.0	SOT143
SMSRQ5500-SOT143	Ring Quad	3	1,100	0.55	16.0	SOT143
SMSCQ5500-SOT143	Crossover Quad	3	1,100	0.55	16.0	SOT143
Test Conditions		I_R = 10 µA	I_F = 1 mA	V_R = 0 V, F = 1 MHz	I_F = 10 mA	

SOT143

GaAs Schottky Diodes

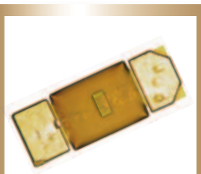
Millimeter wave performance in twelve configurations featuring double passivation and Aeroflex / Metelics' tri-metallization for ultra-reliable operation in the most demanding environments. Topologies supporting limiter, mixer, multiplier and sampler designs operating to 60+ GHz are available in flip chip, beam lead and packaged form. Screening per MIL-PRF-19500 and MIL-PRF-38534 is available.

Flip Chip

Model	**Configuration**	V_F MIN mV	V_F MAX mV	ΔV_F MAX mV	V_{BR} MIN V	C_J MAX pF	ΔC_J MAX pF	R_S MAX Ω	**Package**
MGS801	Single Junction	650	750	N/A	5	0.05	N/A	7	GC110
MGS801A	Single Junction	650	750	N/A	5	0.075	N/A	5	GC110
MGS802	Anti-parallel Pair	650	750	20	- - -	0.10	N/A	7	GC210
MGS802A	Anti-Parallel Pair	650	750	20	- - -	0.15	N/A	5	GC210
MGS803	Series Tee	650	750	20	5	0.06	0.02	7	GC310
Test Conditions		I_F = 1 mA			I_R = 10 μA	V_R = 0 V F = 1 MHz		I_F = 5 mA	

Beam Lead

Model	**Configuration**	V_F MIN mV	V_F MAX mV	ΔV_F MAX mV	V_{BR} MIN V	C_J MAX pF	ΔC_J MAX pF	R_S MAX Ω	**Package**
MGS901	Single Junction	650	750	N/A	5	0.06	N/A	7	GB110
MGS902	Anti Parallel Pair	650	750	20	- - -	0.10	N/A	7	GB210
MGS903	Series Tee	650	750	20	5	0.06	0.02	7	GB310
MGS904	4 Junction Ring Quad	650	750	20	- - -	0.06	0.02	7	B85
MGS904A	4 Junction Ring Quad	650	750	20	- - -	0.08	0.02	5	B85
MGS905	4 Junction Bridge Quad	650	750	20	5	0.06	0.02	7	B86
MGS906	4 Junction Series Tee	1300	1500	40	10	0.04	0.02	14	B90
MGS907	8 Junction Ring Quad	1300	1500	40	- - -	0.04	0.02	14	B85
MGS907A	8 Junction Ring Quad	1300	1500	40	- - -	0.06	0.02	12	B85
MGS907B	8 Junction Ring Quad	1300	1500	40	- - -	0.08	0.02	10	B85
MGS908	8 Junction Bridge Quad	1300	1500	40	10	0.04	0.02	14	B86
MGS909	6 Junction Series Tee	1800	2100	60	15	0.10	0.03	21	B90
MGS910	12 Junction Ring Quad	1800	2100	60	- - -	0.10	0.03	21	B87
MGS911	12 Junction Bridge Quad	1800	2100	60	15	0.10	0.03	21	B88
MGS912	Four Junction	2500	2900	N/A	20	0.03	N/A	28	B89
Test Conditions		I_F = 1 mA			I_R = 10 μA	V_R = 0 V F = 1 MHz		I_F = 5 mA	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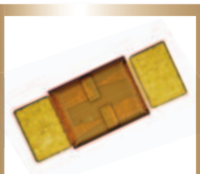
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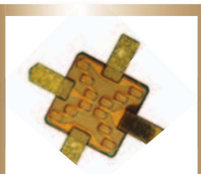
GC310


B85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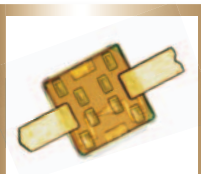

B89

GaAs Abrupt Varactor Diodes

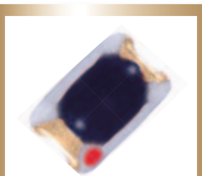
V_{BR} = 22 V min.

Chips

Model	Γ	C_J			Tuning Ratio			Q	Package
	NOM	MIN pF	NOM pF	MAX pF	MIN	TYP	MAX	MIN	
MGV050-18	0.50	0.25	0.30	0.35	4.0	4.7	5.5	4,000	C01A
MGV050-20	0.50	0.50	0.55	0.61	4.0	4.7	5.5	4,000	C01A
MGV050-22	0.50	0.90	1.00	1.10	4.0	4.7	5.5	3,000	C01A
MGV050-24	0.50	1.35	1.50	1.65	4.0	4.7	5.5	3,000	C01A
MGV050-26	0.50	1.80	2.00	2.20	4.0	4.7	5.5	3,000	C01A
Test Conditions	V_R = 2 to 22 V	V_R = 4 V, F = 1 MHz			V_R = 0 to 22 V			V_R = 4 V, F = 50 MHz	

Packaged

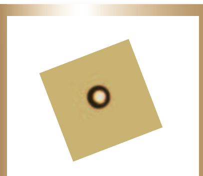
Model	Γ	C_T			Tuning Ratio			Q	Package
	NOM	MIN pF	NOM pF	MAX pF	MIN	TYP	MAX	MIN	
MGV050-18-E28 / 28X	0.50	0.31	0.38	0.45	3.0	3.4	3.9	4,000	E28 / 28X
MGV050-18-H20	0.50	0.41	0.48	0.55	2.0	2.6	3.2	4,000	H20
MGV050-18-0805-2	0.50	0.29	0.36	0.43	3.0	3.6	4.2	4,000	0805-2
MGV050-20-E28 / 28X	0.50	0.55	0.63	0.71	3.3	3.9	4.5	4,000	E28 / 28X
MGV050-20-H20	0.50	0.64	0.73	0.82	2.8	3.2	3.7	4,000	H20
MGV050-20-0805-2	0.50	0.53	0.61	0.69	3.4	4.0	4.8	4,000	0805-2
MGV050-22-E28 / 28X	0.50	0.95	1.08	1.21	3.6	4.2	5.0	3,000	E28 / 28X
MGV050-22-H20	0.50	1.04	1.18	1.32	3.2	3.7	4.4	3,000	H20
MGV050-22-0805-2	0.50	0.93	1.06	1.19	3.7	4.3	5.1	3,000	0805-2
MGV050-24-E28 / 28X	0.50	1.40	1.58	1.76	3.7	4.2	5.3	3,000	E28 / 28X
MGV050-24-H20	0.50	1.49	1.68	1.87	3.4	3.7	4.7	3,000	H20
MGV050-24-0805-2	0.50	1.38	1.56	1.74	3.8	4.3	5.3	3,000	0805-2
MGV050-26-E28 / 28X	0.50	1.85	2.08	2.31	3.8	4.4	5.3	3,000	E28 / 28X
MGV050-26-H20	0.50	1.94	2.18	2.42	3.5	4.0	4.9	3,000	H20
MGV050-26-0805-2	0.50	1.83	2.06	2.29	3.8	4.5	5.4	3,000	0805-2
Test Conditions	V_R = 0 to 22 V	V_R = 4 V, F = 1 MHz			V_R = 0 to 22 V			V_R = 4 V, F = 50 MHz	


0805-2


H27


E28


E28X


C01A

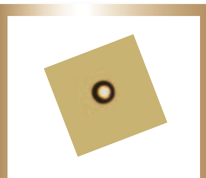
GaAs Hyperabrupt Varactor Diodes

The MGV series of hyperabrupt varactor diodes feature passivated mesa construction for low leakage and excellent post tuning drift. Available in three constant gamma families of 0.75, 1.0 and 1.25. These diodes will find application in tunable filters and oscillators up to 40 GHz. Optimum performance is obtained using die however packaged devices are available as well diodes screened per MIL-PRF-19500 and MIL-PRF-38534. Contact your representative for these and other options.

V_{BR} = 22 V min.

Chips

Model	Γ NOM	C_J MIN pF	C_J NOM pF	C_J MAX pF	Tuning Ratio MIN	Tuning Ratio TYP	Tuning Ratio TYP	Q MIN	Package
MGV075-08	0.75	0.25	0.30	0.35	2.2	2.8	3.5	4,000	C01A
MGV075-09	0.75	0.35	0.40	0.45	2.2	2.8	3.5	4,000	C01A
MGV075-10	0.75	0.45	0.50	0.55	2.2	2.8	3.5	3,000	C01A
MGV075-11	0.75	0.63	0.70	0.77	2.2	2.8	3.5	3,000	C01A
MGV075-12	0.75	0.72	0.80	0.88	2.2	2.8	3.5	3,000	C01A
MGV075-13	0.75	0.90	1.00	1.10	2.2	2.8	3.5	3,000	C01A
MGV075-14	0.75	1.08	1.20	1.32	2.2	2.8	3.5	3,000	C01A
MGV075-15	0.75	1.35	1.50	1.65	2.2	2.8	3.5	3,000	C01A
MGV075-16	0.75	1.62	1.80	1.98	2.2	2.8	3.5	3,000	C01A
MGV075-17	0.75	1.80	2.00	2.20	2.2	2.8	3.5	3,000	C01A
MGV100-08	1.00	0.30	0.35	0.40	2.7	3.4	5.0	4,000	C01A
MGV100-09	1.00	0.40	0.45	0.50	2.7	3.4	5.0	4,000	C01A
MGV100-20	1.00	0.50	0.55	0.61	2.7	3.4	5.0	4,000	C01A
MGV100-21	1.00	0.58	0.65	0.72	2.7	3.4	5.0	4,000	C01A
MGV100-22	1.00	0.72	0.80	0.88	2.7	3.4	5.0	3,000	C01A
MGV100-23	1.00	0.90	1.00	1.10	2.7	3.4	5.0	3,000	C01A
MGV100-24	1.00	1.08	1.20	1.32	2.7	3.4	5.0	3,000	C01A
MGV100-25	1.00	1.35	1.50	1.65	2.7	3.4	5.0	3,000	C01A
MGV100-26	1.00	1.53	1.70	1.87	2.7	3.4	5.0	3,000	C01A
MGV100-27	1.00	1.80	2.00	2.20	2.7	3.4	5.0	3,000	C01A
MGV125-08	1.25	0.25	0.30	0.35	4.0	5.0	8.4	4,000	C01A
MGV125-09	1.25	0.35	0.40	0.45	4.0	5.0	8.5	4,000	C01A
MGV125-20	1.25	0.45	0.50	0.55	4.0	5.0	8.6	4,000	C01A
MGV125-21	1.25	0.63	0.70	0.77	4.0	5.0	8.8	4,000	C01A
MGV125-22	1.25	0.90	1.00	1.10	4.0	5.0	9.0	3,000	C01A
MGV125-23	1.25	1.08	1.20	1.32	4.0	5.0	9.5	3,000	C01A
MGV125-24	1.25	1.35	1.50	1.65	4.0	5.0	10	3,000	C01A
MGV125-25	1.25	1.53	1.70	1.87	4.0	5.0	10	3,000	C01A
MGV125-26	1.25	1.80	2.00	2.20	4.0	5.0	10	3,000	C01A
Test Conditions	V_R = 2 to 20 V	V_R = 4 V F = 1 MHz			V_R = 2 to 12 V		V_R = 2 to 20 V	V_R = 4 V F = 50 MHz	



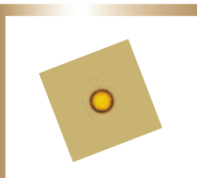
C01A

Silicon Abrupt Varactor Diodes

The work horse of varactors these diodes feature fully passivated mesa construction and Aeroflex / Metelics tri-metallization. Featuring a nominal gamma of 0.46 these find application in tunable filters and oscillators up to 18 GHz.

Chips

Model	V_{BR} MIN V	C_J MIN pF	C_J NOM pF	C_J MAX pF	Tuning Ratio MIN	Tuning Ratio TYP	Q MIN	R_S MAX Ω	Package
MSV34,060-C12	30	0.36	0.4	0.44	3.5	4.0	6,300	1.3	C12
MSV34,064-C12	30	0.54	0.6	0.66	3.5	4.0	5,300	1.0	C12
MSV34,067-C12	30	0.72	0.8	0.88	3.5	4.0	4,500	0.9	C12
MSV34,069-C12	30	0.90	1.0	1.10	4.0	4.7	4,000	0.8	C12
MSV34,075-C12	30	1.62	1.8	1.98	4.0	4.7	3,600	0.5	C12
MSV34,082-C12	30	3.42	3.8	4.18	4.0	4.7	2,700	0.3	C12
MSV34,087-C12	30	5.22	5.8	6.38	4.0	4.7	2,200	0.2	C12
MSV34,092-C22	30	8.82	9.8	10.78	4.0	4.7	2,000	0.2	C22
MSV38,060-C12	45	0.36	0.4	0.44	4.5	5.0	4,500	1.8	C12
MSV38,064-C12	45	0.54	0.6	0.66	4.5	5.0	3,200	1.7	C12
MSV38,067-C12	45	0.72	0.8	0.88	4.5	5.0	3,000	1.3	C12
MSV38,069-C12	45	0.90	1.0	1.10	5.0	5.5	2,800	1.0	C12
MSV38,075-C12	45	1.62	1.8	1.98	5.0	5.5	2,600	0.7	C12
MSV38,082-C12	45	3.42	3.8	4.18	5.0	5.5	2,100	0.4	C12
MSV38,087-C12	45	5.22	5.8	6.38	5.0	5.5	1,800	0.3	C12
MSV38,092-C22	45	8.82	9.8	10.78	5.0	5.5	1,800	0.2	C22
MSV40,060-C12	60	0.36	0.4	0.44	5.0	5.5	3,000	2.7	C12
MSV40,064-C12	60	0.54	0.6	0.66	5.0	5.5	2,600	2.0	C12
MSV40,067-C12	60	0.72	0.8	0.88	5.0	5.5	2,600	1.6	C12
MSV40,069-C12	60	0.90	1.0	1.10	6.0	6.5	2,400	1.2	C12
MSV40,075-C12	60	1.62	1.8	1.98	6.0	6.5	2,200	0.8	C12
MSV40,082-C12	60	3.42	3.8	4.18	6.0	6.5	1,500	0.5	C12
MSV40,087-C12	60	5.22	5.8	6.38	6.0	6.5	1,500	0.4	C12
MSV40,092-C22	60	8.82	9.8	10.78	6.0	6.5	1,500	0.3	C22
Test Conditions	I_R = 10 µA	V_R = 4 V F = 1 MHz			V_R = 0 V & V_R = V_{BR} F = 1 MHz		V_R = 4 V F = 50 MHz		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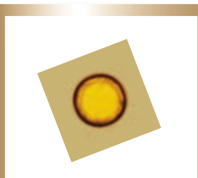
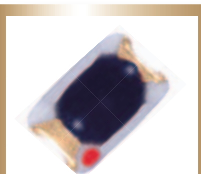

C22

Silicon Abrupt Varactor Diodes

Packaged

Model	V_{BR} MIN V	C_T MIN pF	C_T NOM pF	C_T MAX pF	Tuning Ratio MIN	Q MIN	C_P TYP pF	L_P TYP nH	Package
MSV34,060-E28 / 28 X	30	0.42	0.48	0.54	2.8	6,300	0.08	0.4	E28 / 28X
MSV34,060-H20	30	0.50	0.58	0.66	2.3	6,300	0.18	0.5	H20
MSV34,060-T86	30	0.50	0.58	0.66	2.3	6,300	0.18	1.0	T86
MSV34,060-0805-2	30	0.41	0.46	0.51	3.0	6,300	0.06	0.4	0805-2
MSV34,064-E28 / 28 X	30	0.60	0.68	0.76	3.0	5,300	0.08	0.4	E28 / 28X
MSV34,064-H20	30	0.68	0.78	0.88	2.6	5,300	0.18	0.5	H20
MSV34,064-T86	30	0.68	0.78	0.88	2.6	5,300	0.18	1.0	T86
MSV34,064-0805-2	30	0.59	0.66	0.73	3.0	5,300	0.06	0.4	0805-2
MSV34,067-E28 / 28 X	30	0.78	0.88	0.98	3.1	4,500	0.08	0.4	E28 / 28X
MSV34,067-H20	30	0.86	0.98	1.10	2.7	4,500	0.18	0.5	H20
MSV34,067-T86	30	0.86	0.98	1.10	2.7	4,500	0.18	1.0	T86
MSV34,067-0805-2	30	0.77	0.86	0.95	3.2	4,500	0.06	0.4	0805-2
MSV34,069-E28 / 28 X	30	0.96	1.08	1.20	4.0	4,000	0.08	0.4	E28 / 28X
MSV34,069-H20	30	1.04	1.18	1.32	3.5	4,000	0.18	0.5	H20
MSV34,069-T86	30	1.04	1.18	1.32	3.5	4,000	0.18	1.0	T86
MSV34,069-0805-2	30	0.95	1.06	1.17	4.1	4,000	0.06	0.4	0805-2
MSV34,075-E28 / 28 X	30	1.68	1.88	2.08	4.2	3,600	0.08	0.4	E28 / 28X
MSV34,075-H20	30	1.76	1.98	2.20	3.8	3,600	0.18	0.5	H20
MSV34,075-T86	30	1.76	1.98	2.20	3.8	3,600	0.18	1.0	T86
MSV34,075-0805-2	30	1.67	1.86	2.05	4.2	3,600	0.06	0.4	0805-2
MSV34,082-E28 / 28 X	30	3.48	3.88	4.28	4.3	2,700	0.08	0.4	E28 / 28X
MSV34,082-H20	30	3.56	3.98	4.40	4.1	2,700	0.18	0.5	H20
MSV34,082-T86	30	3.56	3.98	4.40	4.1	2,700	0.18	1.0	T86
MSV34,082-0805-2	30	3.47	3.86	4.25	4.4	2,700	0.06	0.4	0805-2
MSV34,087-E28 / 28 X	30	5.28	5.88	6.48	4.4	2,200	0.08	0.4	E28 / 28X
MSV34,087-H20	30	5.36	5.98	6.60	4.3	2,200	0.18	0.5	H20
MSV34,087-T86	30	5.36	5.98	6.60	4.3	2,200	0.18	1.0	T86
MSV34,087-0805-2	30	5.27	5.86	6.45	4.4	2,200	0.06	0.4	0805-2
MSV34,092-E28 / 28 X	30	8.88	9.88	10.88	4.4	2,000	0.08	0.4	E28 / 28X
MSV34,092-H20	30	8.96	9.98	11.00	4.3	2,000	0.18	0.5	H20
MSV34,092-T86	30	8.96	9.98	11.00	4.3	2,000	0.18	1.0	T86
MSV34,092-0805-2	30	8.87	9.86	10.85	4.4	2,000	0.06	0.4	0805-2
Test Conditions	I_R = 10 µA	V_R = 4 V, F = 1 MHz			V_R = 0 to 30 V, F = 1 MHz	V_R = 4 V, F = 50 MHz			


0805-2


H20


E28

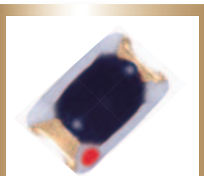

E28X


T86

Silicon Abrupt Varactor Diodes

Packaged

Model	V_{BR} MIN V	C_T MIN pF	C_T NOM pF	C_T MAX pF	Tuning Ratio MIN	Q MIN	C_P TYP pF	L_P TYP nH	Package
MSV38,060-E28 / 28 X	45	0.42	0.48	0.54	3.4	4,500	0.08	0.4	E28 / 28X
MSV38,060-H20	45	0.50	0.58	0.66	2.7	4,500	0.18	0.5	H20
MSV38,060-T86	45	0.50	0.58	0.66	2.7	4,500	0.18	1.0	T86
MSV38,060-0805-2	45	0.41	0.46	0.51	3.6	4,500	0.06	0.4	0805-2
MSV38,064-E28 / 28 X	45	0.60	0.68	0.76	3.7	3,200	0.08	0.4	E28 / 28X
MSV38,064-H20	45	0.68	0.78	0.88	3.0	3,200	0.18	0.5	H20
MSV38,064-T86	45	0.68	0.78	0.88	3.0	3,200	0.18	1.0	T86
MSV38,064-0805-2	45	0.59	0.66	0.73	3.8	3,200	0.06	0.4	0805-2
MSV38,067-E28 / 28 X	45	0.78	0.88	0.98	3.8	3,000	0.08	0.4	E28 / 28X
MSV38,067-H20	45	0.86	0.98	1.10	3.3	3,000	0.18	0.5	H20
MSV38,067-T86	45	0.86	0.98	1.10	3.3	3,000	0.18	1.0	T86
MSV38,067-0805-2	45	0.77	0.86	0.95	4.0	3,000	0.06	0.4	0805-2
MSV38,069-E28 / 28 X	45	0.96	1.08	1.20	4.3	2,800	0.08	0.4	E28 / 28X
MSV38,069-H20	45	1.04	1.18	1.32	3.7	2,800	0.18	0.5	H20
MSV38,069-T86	45	1.04	1.18	1.32	3.7	2,800	0.18	1.0	T86
MSV38,069-0805-2	45	0.95	1.06	1.17	4.4	2,800	0.06	0.4	0805-2
MSV38,075-E28 / 28 X	45	1.68	1.88	2.08	4.5	2,600	0.08	0.4	E28 / 28X
MSV38,075-H20	45	1.76	1.98	2.20	4.2	2,600	0.18	0.5	H20
MSV38,075-T86	45	1.76	1.98	2.20	4.2	2,600	0.18	1.0	T86
MSV38,075-0805-2	45	1.67	1.86	2.05	4.7	2,600	0.06	0.4	0805-2
MSV38,082-E28 / 28 X	45	3.48	3.88	4.28	4.8	2,100	0.08	0.4	E28 / 28X
MSV38,082-H20	45	3.56	3.98	4.40	4.6	2,100	0.18	0.5	H20
MSV38,082-T86	45	3.56	3.98	4.40	4.6	2,100	0.18	1.0	T86
MSV38,082-0805-2	45	3.47	3.86	4.25	4.8	2,100	0.06	0.4	0805-2
MSV38,087-E28 / 28 X	45	5.28	5.88	6.48	4.8	1,800	0.08	0.4	E28 / 28X
MSV38,087-H20	45	5.36	5.98	6.60	4.7	1,800	0.18	0.5	H20
MSV38,087-T86	45	5.36	5.98	6.60	4.7	1,800	0.18	1.0	T86
MSV38,087-0805-2	45	5.27	5.86	6.45	4.9	1,800	0.06	0.4	0805-2
MSV38,092-E28 / 28 X	45	8.88	9.88	10.88	4.9	1,800	0.08	0.4	E28 / 28X
MSV38,092-H20	45	8.96	9.98	11.00	4.8	1,800	0.18	0.5	H20
MSV38,092-T86	45	8.96	9.98	11.00	4.8	1,800	0.18	1.0	T86
MSV38,092-0805-2	45	8.87	9.86	10.85	4.9	1,800	0.06	0.4	0805-2
Test Conditions	I_R = 10 µA		V_R = 4 V F = 1 MHz		V_R = 0 to 45 V F = 1 MHz	V_R = 4 V F = 50 MHz			


0805-2


H20


E28


E28X


T86

Silicon Abrupt Varactor Diodes

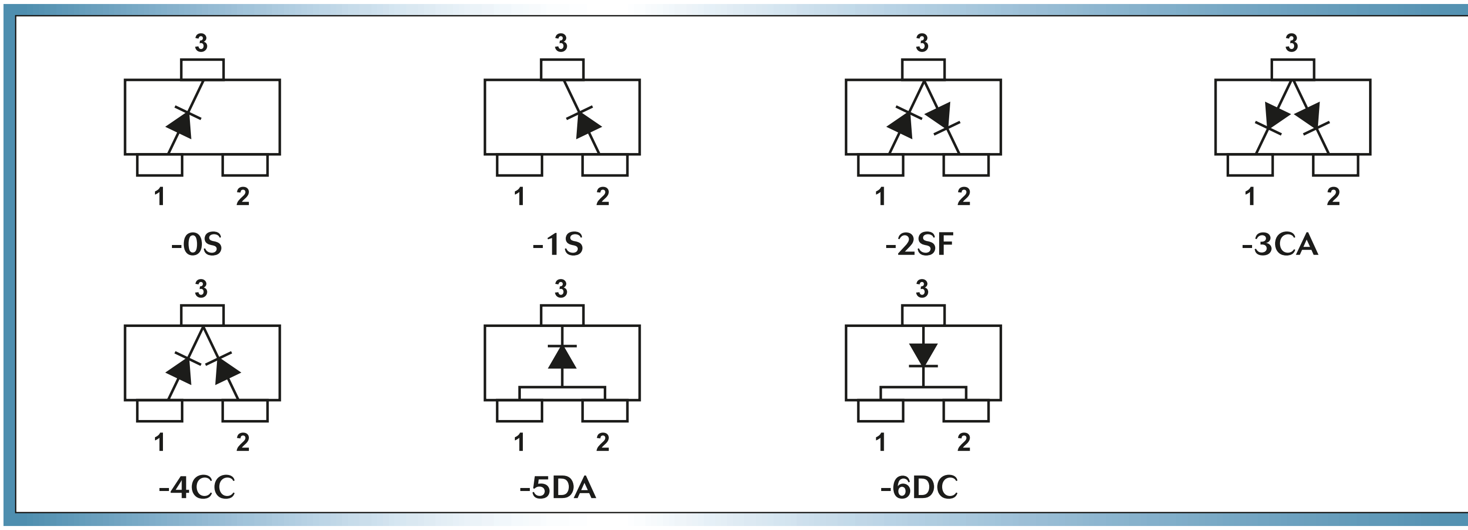
Packaged

Model	V_{BR} MIN V	C_T MIN pF	C_T NOM pF	C_T MAX pF	Tuning Ratio MIN	Q MIN	C_P TYP pF	L_P TYP nH	Package
MSV40,060-E28 / 28 X	60	0.42	0.48	0.54	3.6	3,000	0.08	0.4	E28 / 28X
MSV40,060-H20	60	0.50	0.58	0.66	2.8	3,000	0.18	0.5	H20
MSV40,060-T86	60	0.50	0.58	0.66	2.8	3,000	0.18	1.0	T86
MSV40,060-0805-2	60	0.41	0.46	0.51	3.9	3,000	0.06	0.4	0805-2
MSV40,064-E28 / 28 X	60	0.60	0.68	0.76	4.0	2,600	0.08	0.4	E28 / 28X
MSV40,064-H20	60	0.68	0.78	0.88	3.2	2,600	0.18	0.5	H20
MSV40,064-T86	60	0.68	0.78	0.88	3.2	2,600	0.18	1.0	T86
MSV40,064-0805-2	60	0.59	0.66	0.73	4.2	2,600	0.06	0.4	0805-2
MSV40,067-E28 / 28 X	60	0.78	0.88	0.98	4.2	2,600	0.08	0.4	E28 / 28X
MSV40,067-H20	60	0.86	0.98	1.10	3.5	2,600	0.18	0.5	H20
MSV40,067-T86	60	0.86	0.98	1.10	3.5	2,600	0.18	1.0	T86
MSV40,067-0805-2	60	0.77	0.86	0.95	4.3	2,600	0.06	0.4	0805-2
MSV40,069-E28 / 28 X	60	0.96	1.08	1.20	5.0	2,400	0.08	0.4	E28 / 28X
MSV40,069-H20	60	1.04	1.18	1.32	4.2	2,400	0.18	0.5	H20
MSV40,069-T86	60	1.04	1.18	1.32	4.2	2,400	0.18	1.0	T86
MSV40,069-0805-2	60	0.95	1.06	1.17	5.2	2,400	0.06	0.4	0805-2
MSV40,075-E28 / 28 X	60	1.68	1.88	2.08	5.4	2,200	0.08	0.4	E28 / 28X
MSV40,075-H20	60	1.76	1.98	2.20	4.8	2,200	0.18	0.5	H20
MSV40,075-T86	60	1.76	1.98	2.20	4.8	2,200	0.18	1.0	T86
MSV40,075-0805-2	60	1.67	1.86	2.05	5.5	2,200	0.06	0.4	0805-2
MSV40,082-E28 / 28 X	60	3.48	3.88	4.28	5.7	1,500	0.08	0.4	E28 / 28X
MSV40,082-H20	60	3.56	3.98	4.40	5.3	1,500	0.18	0.5	H20
MSV40,082-T86	60	3.56	3.98	4.40	5.3	1,500	0.18	1.0	T86
MSV40,082-0805-2	60	3.47	3.86	4.25	5.7	1,500	0.06	0.4	0805-2
MSV40,087-E28 / 28 X	60	5.28	5.88	6.48	5.8	1,500	0.08	0.4	E28 / 28X
MSV40,087-H20	60	5.36	5.98	6.60	5.5	1,500	0.18	0.5	H20
MSV40,087-T86	60	5.36	5.98	6.60	5.5	1,500	0.18	1.0	T86
MSV40,087-0805-2	60	5.27	5.86	6.45	5.8	1,500	0.06	0.4	0805-2
MSV40,092-E28 / 28 X	60	8.88	9.88	10.88	5.8	1,000	0.08	0.4	E28 / 28X
MSV40,092-H20	60	8.96	9.98	11.00	5.7	1,000	0.18	0.5	H20
MSV40,092-T86	60	8.96	9.98	11.00	5.7	1,000	0.18	1.0	T86
MSV40,092-0805-2	60	8.87	9.86	10.85	5.9	1,000	0.06	0.4	0805-2
Test Conditions	I_R = 10 µA		V_R = 4 V F = 1 MHz		V_R = 0 to 60 V F = 1 MHz	V_R = 4 V F = 50 MHz			

0805-2 H20 E28 E28X T86

Silicon Abrupt Varactor Diodes

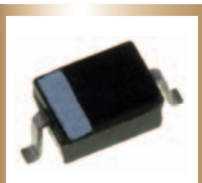
Configuration Codes



Plastic Packaged

Model	Configuration	C_T MIN pF	NOM pF	MAX pF	Tuning Ratio MIN	Q MIN	Package
SMTV3001-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	0.8	1.0	1.2	3.5	3,000	SOT23
SMTV3002-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	1.6	2.0	2.4	3.6	2,800	SOT23
SMTV3004-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	3.2	4.0	4.8	4.2	2,400	SOT23
SMTV3006-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	4.8	6.0	7.2	4.3	2,100	SOT23
SMTV3008-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	6.4	8.0	9.6	4.3	1,800	SOT23
SMTV3010-SOT23	-0S, 1S, 2SF, 3CA, 4CC, 5DA, 6DC	8.0	10.0	12.0	4.4	1,600	SOT23
SMTD3001-SOD323	- - -	0.8	1.0	1.2	3.5	3,000	SOD323
SMTD3002-SOD323	- - -	1.6	2.0	2.4	3.6	2,800	SOD323
SMTD3004-SOD323	- - -	3.2	4.0	4.8	4.2	2,400	SOD323
SMTD3006-SOD323	- - -	4.8	6.0	7.2	4.3	2,100	SOD323
SMTD3008-SOD323	- - -	6.4	8.0	9.6	4.3	1,800	SOD323
SMTD3010-SOD323	- - -	8.0	10.0	12.0	4.4	1,600	SOD323
Test Conditions		V_R = 4 V F = 1 MHz			V_R = 0 V V_R = 30 V F = 1 MHz	V_R = 4 V F = 50 MHz	

SOT23



SOD323

Silicon PIN Diodes

Beam Lead

Beam Lead & Packaged Beam Lead

Model	V_{BR} MIN V	C_J TYP pF	C_J MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	t_{rr} TYP ns	P_{DISS} MAX MW	Package
MBP1030-B11	100	0.020	0.025	5.5	6.5	35	5.0	250	B11
MBP1033-B11	100	0.025	0.030	4.0	5.0	40	5.0	250	B11
MBP1034-B11	100	0.025	0.030	6.0	7.0	25	5.5	250	B11
MBP1035-B11	60	0.030	0.040	3.5	4.0	30	2.5	250	B11
MBP1036-B11	60	0.040	0.050	2.5	3.0	40	2.5	250	B11
MBP2030-B11	60	0.023	0.025	6.0	7.0	20	4.0	250	B11
MBP2034-B11	60	0.026	0.030	5.0	6.0	20	3.0	250	B11
MPND4005-B15	100	0.018	0.020	5.5*	6.5*	125	- - -	250	B15
MPND4005-B16	100	0.018	0.020	5.5*	6.5*	125	- - -	250	B16
MPND4005-0402	100	0.070*	0.090*	5.5	6.5	125	- - -	250	0402
Test Conditions	I_R = 10 µA	V_R = 10 V F = 15 GHz * C_T		I_F = 10 mA * I_F = 20 mA F = 3 GHz		I_F = 10 mA I_R = 6 mA	I_F = 10 mA V_R = 10 V	T_C = +25 °C, Derate Linearly to +175 °C	

Low Capacitance, Fast Switching

Beam Lead & Packaged

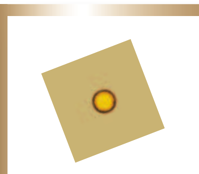
Model	V_{BR} MIN V	C_J TYP pF	C_J MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	Contact MIN mils	θ_{JC} MAX °C / W	Package
MPN7302	20	0.08	0.12	1.2	1.5	8	1.5	60	C11
MPN7304	40	0.06	0.08	2.2	2.7	15	1.5	60	C11
MPN7304A	40	0.12	0.15	1.0	1.5	30	2.0	50	C12
MPN7306	70	0.08	0.10	1.2	1.2	50	2.0	50	C12
MPN7310	100	0.05	0.07	1.5	2.0	100	2.0	50	C12
MPN7310A	100	0.18	0.25	0.6	1.0	200	4.0	35	C12
MPN7312A	120	0.08	0.10	1.2*	1.5*	150	2.0	50	C12
MPN7312B	120	0.18	0.25	0.8*	1.0*	250	4.0	35	C12
MPN7315	150	0.08	0.12	1.2	1.5	180	2.0	50	C12
MPN7320	150	0.02	0.03	3.0	4.0	120	1.5	60	C01
Test Conditions	I_R = 10 µA	V_R = 10 V F = 1 MHz		I_F = 10 mA * F = 100 MHz F = 1 GHz		I_F = 10 mA I_R = 6 mA			

B11

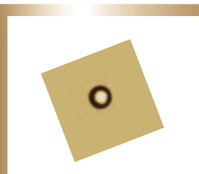
B15

B16

0402



C12

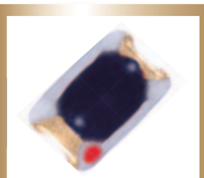


C01

Low Capacitance, Fast Switching (Cont.)

Packaged

Model	V_{BR} MIN V	C_T TYP pF	C_T MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	C_P TYP pF	L_P MAX nH	Package
MPN7302-E28 / 28X	20	0.16	0.24	1.2	1.5	8	0.08	0.4	E28 / 28X
MPN7302-H20	20	0.26	0.35	1.2	1.5	8	0.18	0.5	H20
MPN7302-0805-2	20	0.14	0.22	1.2	1.5	8	0.06	0.4	0805-2
MPN7304-E28 / 28X	40	0.14	0.22	2.2	2.7	15	0.08	0.4	E28 / 28X
MPN7304-H20	40	0.24	0.30	2.2	2.7	15	0.18	0.5	H20
MPN7304-0805-2	40	0.18	0.26	2.2	2.7	15	0.06	0.4	0805-2
MPN7304A-E28 / 28X	40	0.20	0.27	1.0	1.5	30	0.08	0.4	E28 / 28X
MPN7304A-H20	40	0.30	0.38	1.0	1.5	30	0.18	0.5	H20
MPN7304A-0805-2	40	0.18	0.23	1.0	1.5	30	0.06	0.4	0805-2
MPN7306-E28 / 28X	70	0.16	0.22	1.2	1.2	50	0.08	0.4	E28 / 28X
MPN7306-H20	70	0.26	0.33	1.2	1.2	50	0.18	0.5	H20
MPN7306-0805-2	70	0.14	0.20	1.2	1.2	50	0.06	0.4	0805-2
MPN7310-E28 / 28X	100	0.13	0.18	1.5	2.0	100	0.08	0.4	E28 / 28X
MPN7310-H20	100	0.23	0.29	1.5	2.0	100	0.18	0.5	H20
MPN7310-0805-2	100	0.11	0.17	1.5	2.0	100	0.06	0.4	0805-2
MPN7310A-E28 / 28X	100	0.26	0.36	0.6	1.0	200	0.08	0.4	E28 / 28X
MPN7310A-H20	100	0.36	0.57	0.6	1.0	200	0.18	0.5	H20
MPN7310A-0805-2	100	0.24	0.35	0.6	1.0	200	0.06	0.4	0805-2
MPN7312A-E28 / 28X	120	0.16	0.21	1.2*	1.5*	150	0.08	0.4	E28 / 28X
MPN7312A-H20	120	0.26	0.32	1.2*	1.5*	150	0.18	0.5	H20
MPN7312A-0805-2	120	0.14	0.20	1.2*	1.5*	150	0.06	0.4	0805-2
MPN7312B-E28 / 28X	120	0.26	0.36	0.8*	1.0*	250	0.08	0.4	E28 / 28X
MPN7312B-H20	120	0.36	0.57	0.8*	1.0*	250	0.18	0.5	H20
MPN7312B-0805-2	120	0.24	0.35	0.8*	1.0*	250	0.06	0.4	0805-2
MPN7315-E28 / 28X	150	0.16	0.23	1.2	1.5	180	0.08	0.4	E28 / 28X
MPN7315-H20	150	0.26	0.34	1.2	1.5	180	0.18	0.5	H20
MPN7315-0805-2	150	0.14	0.21	1.2	1.5	180	0.06	0.4	0805-2
MPN7320-E28 / 28X	150	0.10	0.14	3.0	4.0	120	0.08	0.4	E28 / 28X
MPN7320-H20	150	0.20	0.24	3.0	4.0	120	0.18	0.5	H20
MPN7320-0805-2	150	0.08	0.12	3.0	4.0	120	0.06	0.4	0805-2
Test Conditions	I_R = 10 µA	V_R = 10 V F = 1 MHz		I_F = 10 mA * F = 100 MHZ F = 1 GHz		I_F = 10 mA I_R = 6 mA			


0805-2


H20


E28


E28X

PIN Limiter Diodes

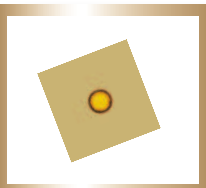
The MPN76XX series of PIN limiter diodes feature fully passivated, mesa construction with gold doping for low insertion loss and improved recovery. Available in seven I-layer and six mesa diameters for limiting thresholds from +7 dB to +23 dBm CW (P_{1dB}) and power handling up to +70 dBm pulsed (1µs / 0.1% DC). Available with screening per MIL-PRF-19500 and MIL-PRF-38534.

Chips

Model	V_{BR} MIN V	V_{BR} MAX V	C_J MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	I-layer NOM microns	Contact MIN mils	$θ_{JC}$ MAX °C / W	Package
MPN7610	15	25	0.10	2.0	2.5	5	1	1.2	120	C11
MPN7610A	15	25	0.15	2.0	2.0	5	1	1.5	80	C11
MPN7620	20	45	0.15	1.5	2.0	5	2	1.5	100	C11
MPN7630	45	70	0.15	1.5	2.0	10	3	2.0	80	C12
MPN7640	75	100	0.15	1.5	2.0	30	4	2.5	60	C12
MPN7650	100	140	0.15	1.5	2.0	50	5	2.5	60	C12
MPN7670	120	160	0.15	1.5	2.0	80	7	3.0	40	C11
MPN7660	140	180	0.15*	1.5	2.0	100	10	3.0	40	C12
MPN7660A	140	180	0.50*	1.0	1.5	200	10	5.0	15	C12
Test Conditions	I_R = 10 µA		V_R = 10 V * V_R = 50 V	I_F = 10 mA F = 1 GHz		I_F = 10 mA I_R = 6 mA				

Packaged

Model	V_{BR} MIN V	V_{BR} MAX V	C_T MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	I-layer NOM microns	Contact MIN mils	$θ_{JC}$ MAX °C / W	Package
MPN7610-ET47	15	25	0.27	2.0	2.5	5	1	1.2	120	ET47
MPN7610-T55	15	25	0.27	2.0	2.5	5	1	1.2	120	T55
MPN7610A-ET47	15	25	0.33	2.0	2.0	5	1	1.5	80	ET47
MPN7610A-T55	15	25	0.33	2.0	2.0	5	1	1.5	80	T55
MPN7620-ET47	20	45	0.33	1.5	2.0	5	2	1.5	100	ET47
MPN7620-T55	20	45	0.33	1.5	2.0	5	2	1.5	100	T55
MPN7630-ET47	45	70	0.33	1.5	2.0	10	3	2.0	80	ET47
MPN7630-T55	45	70	0.33	1.5	2.0	10	3	2.0	80	T55
MPN7640-ET47	75	100	0.33	1.5	2.0	30	4	2.5	60	ET47
MPN7640-T55	75	100	0.33	1.5	2.0	30	4	2.5	60	T55
MPN7650-ET47	100	140	0.33	1.5	2.0	50	5	2.5	60	ET47
MPN7650-T55	100	140	0.33	1.5	2.0	50	5	2.5	60	T55
MPN7670-T55	120	160	0.33	1.5	2.0	80	7	3.0	40	T55
MPN7660-T55	140	180	0.33*	1.5	2.0	100	10	3.0	40	T55
MPN7660A-T55	140	180	0.33*	1.0	1.5	200	10	5.0	15	T55
Test Conditions	I_R = 10 µA		V_R = 10 V * V_R = 50 V	I_F = 10 mA F = 1 GHz		I_F = 10 mA I_R = 6 mA				


C12


ET47


T55

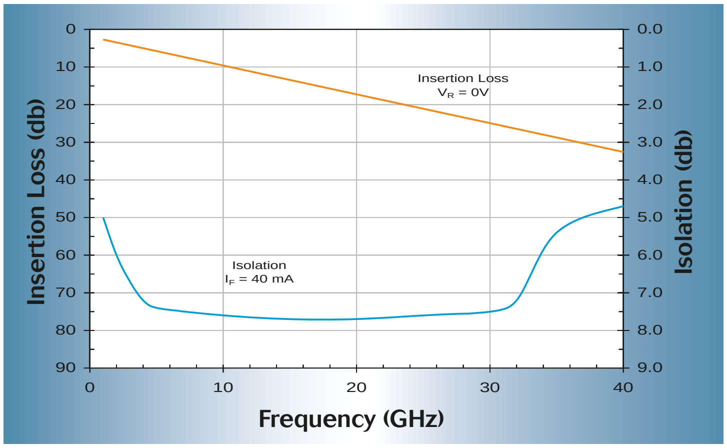
MicroStrip PIN Diodes

Aeroflex / Metelics MicroStrip PIN diode is designed as a 50 microstrip line when bias is at zero or at a negative bias. When forward biased the device is a reflective attenuator. Maximum isolation is achieved at 40mA forward bias.

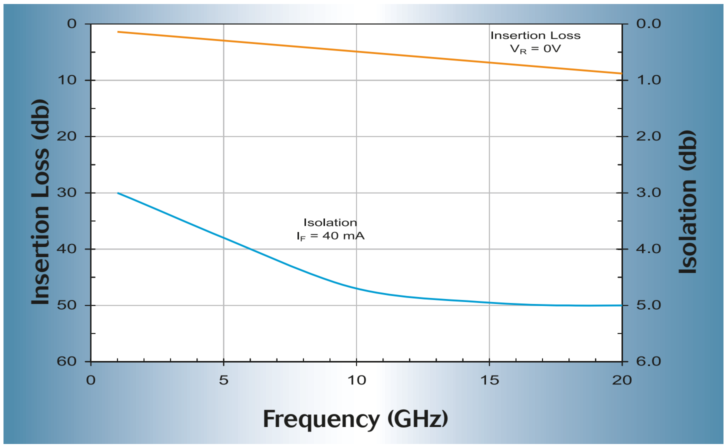
Chip

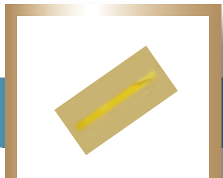
Model	Configuration	I_R MAX nA	V_{BR} MIN V	Insertion Loss MAX	Return Loss TYP	Isolation MIN	Package
MMPN-080150	MicroStrip PIN	100	200	4.0	12	-50	C51
MMPN-080045	MicroStrip PIN	100	200	1.0	12	-30	C50
Test Conditions		V_R = 30 V	I_R = 10 µA	V_R = 30 V F = 2 - 35 GHz F = 2 - 20 GHz		I_F = 40 mA F = 2 - 35 GHz F = 2 - 20 GHz	

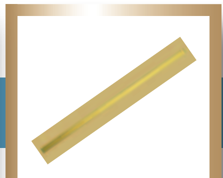
MMPN-080150-C51 Insertion Loss & Isolation



MMPN-080045-C50 Insertion Loss & Isolation




C50

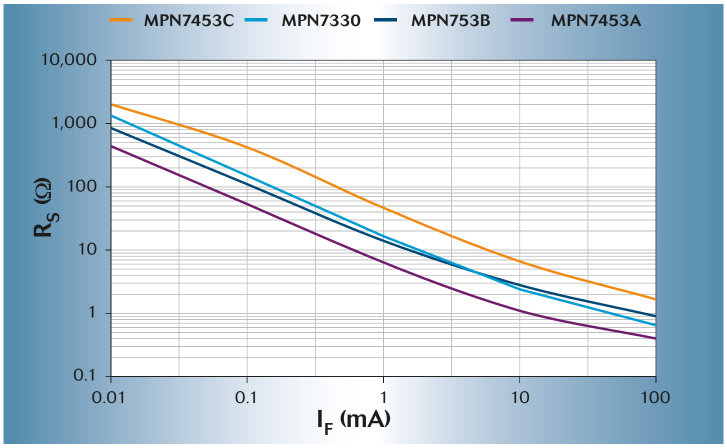

C51

High Power Switching

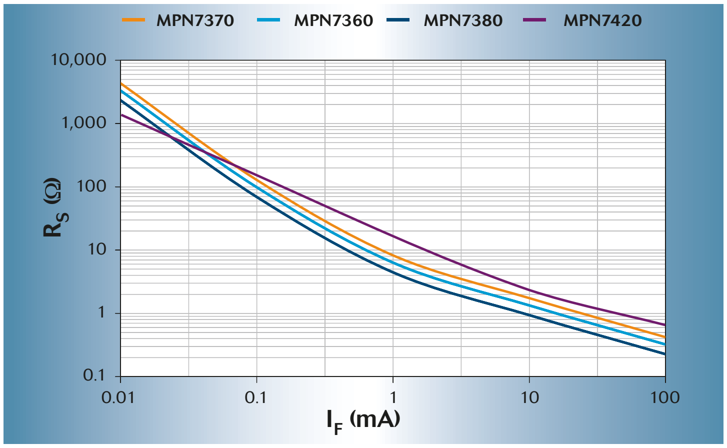
Chips

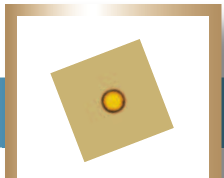
Model	V_{BR}	C_J		R_S		τ	I-layer	Contact	θ_{JC}	Package
	MIN V	TYP pF	MAX pF	TYP Ω	MAX Ω	TYP µs	NOM microns	MIN mils	MAX °C / W	
MPN7330	300	0.30	0.40	0.3	0.5	0.5	30	10	10	C40
MPN7345	300	0.30	0.40	0.3	0.5	0.5	45	10	10	C40
MPN7453A	300	0.10	0.15	0.7	1.0	0.7	60	8	20	C22
MPN7453B	400	0.15	0.2	0.6	0.9	2.5	60	8	20	C22
MPN7453C	300	0.18	0.25	0.4	0.7	1.0	60	8	15	C22
MPN7360	600	0.80	1.0	0.2	0.4	2.5	60	20	7	C37
MPN7370	700	2.00	2.3	0.2	0.3	5.0	70	40	5	C39
MPN7380	800	0.40	0.60	0.3	0.5	2.5	80	24	7	C38
MPN7420	400	0.06	0.08	1.0	1.5	1.0	100	5	30	C12
MPN73100	600	0.20	0.30	0.5	0.8	2.2	100	12	10	C32
MPN73120	700	0.30	0.40	0.5	0.8	3.5	120	15	10	C32
Test Conditions	$I_R = 10\ \mu A$	$V_R = 50$ V F = 1 MHz		$I_F = 100$ mA F = 100 MHz		$I_F = 10$ mA $I_R = 6$ mA				

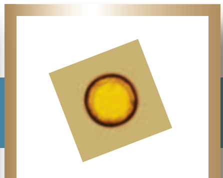
Series Resistance vs. Forward Current



Series Resistance vs. Forward Current




C12


C22

Glass Packaged

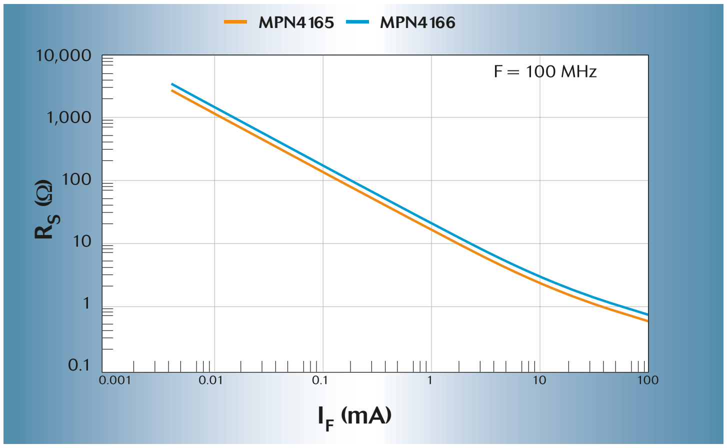
Switching

Model	V_{BR} MIN V	C_T TYP pF	C_T MAX pF	τ MIN ns	t_t TYP ns	R_S TYP Ω	R_S MAX Ω	Package
1N5719	150	0.25*	0.30*	100	100	1.0	1.25	A15
MPN3001	200	0.20	0.25	100	100	0.8	1.0	A15
MPN3002	300	0.20	0.25	100	100	0.8	1.0	A15
Test Conditions	I_R = 10 µA	V_R = 50 V * V_R = 100 V F = 1 MHz		I_F = 250 mA I_R = 50 mA	I_F = 20 mA V_R = 10 V	I_F = 100 mA F = 100 MHz		

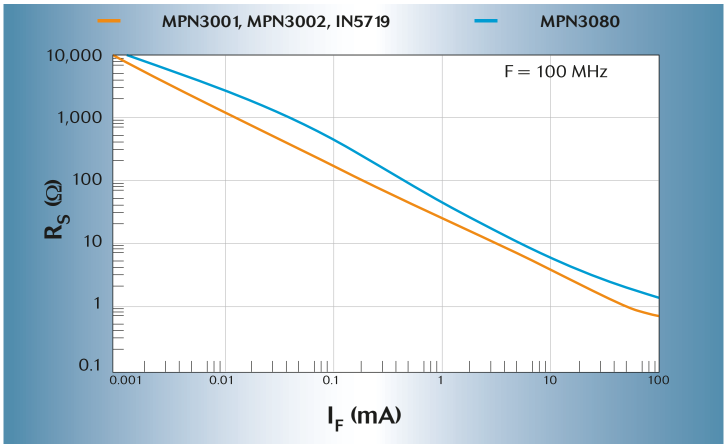
Attenuator

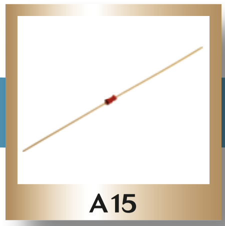
Model	V_{BR} MIN V	C_T MAX pF	τ MIN ns	R_S MAX pF	R_S MIN Ω	R_S MAX Ω	R_S MIN Ω	R_S MAX Ω	Package
MPN4165	100	0.30	100	1.5	1,100	1,660	16	24	A15
MPN4166	100	0.30	100	1.5	830	1,250	12	18	A15
MPN3080	100	0.40	2,000	2.5	1,000	- - -	- - -	8.0*	A15
MPN3081	100	0.40	2,500	3.5	1,500	- - -	- - -	8.0*	A15
1N5767	100	0.40	1,300	2.5	1,000	- - -	- - -	8.0*	A15
Test Conditions	I_R = 10 µA	V_R = 50 V F = 1 MHz	I_F = 100 mA I_R = 50 mA	I_F = 100 mA F = 100 MHz	I_F = 0.01 mA F = 100 MHz		I_F = 1 mA * I_F = 20 mA F = 100 MHz		

Series Resistance vs. Forward Current



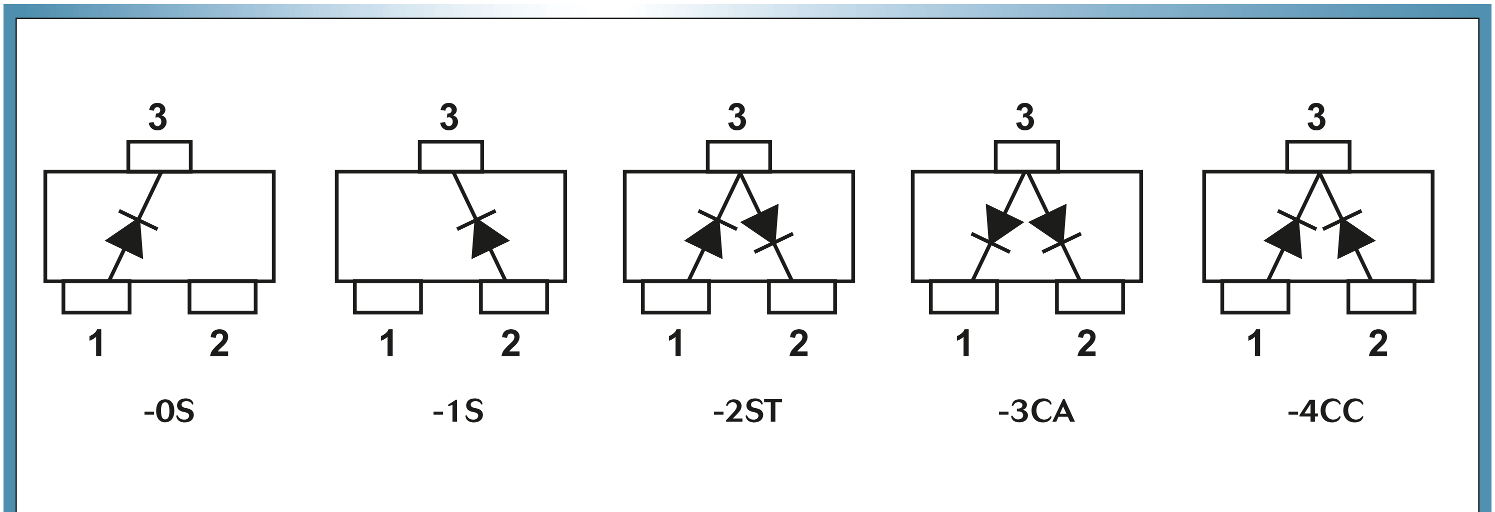
Series Resistance vs. Forward Current





Surface Mount Packages

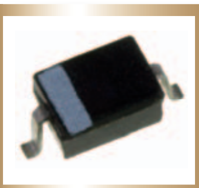
Configuration Codes



SOT23 & SOD323

Model	Configuration	V_{BR} MIN V	C_T TYP pF	C_T MAX pF	R_S TYP Ω	R_S MAX Ω	τ TYP ns	Package
SMPN7453-SOT23	-0S, 1S, 2ST, 3CA, 4CC	200	0.25	0.35	4.0	4.5	2500	SOT23
SMPN7380-SOT23	-0S, 1S, 2ST, 3CA, 4CC	200	0.25	0.35	4.0	4.5	1500	SOT23
SMPN7310-SOT23	-0S, 1S, 2ST, 3CA, 4CC	100	0.40	0.50	0.60	1.2	120	SOT23
SMPN7316-SOT23	-0S, 1S, 2ST, 3CA, 4CC	100	0.25	0.55	0.60	1.0	200	SOT23
SMPN7335-SOT23	-0S, 1S, 2ST, 3CA, 4CC	200	0.30	0.40	1.50	2.0	500	SOT23
SMPN7320-SOT23	-0S, 1S, 2ST, 3CA, 4CC	100	0.20	0.30	2.00	4.5	170	SOT23
SMPN7453-SOD323	- - -	200	0.25	0.35	4.0	4.5	2500	SOD323
SMPN7380-SOD323	- - -	200	0.25	0.35	4.0	4.5	1500	SOD323
SMPN7310-SOD323	- - -	100	0.40	0.50	0.60	1.2	120	SOD323
SMPN7316-SOD323	- - -	100	0.25	0.55	0.60	1.0	200	SOD323
SMPN7335-SOD323	- - -	200	0.30	0.40	1.50	2.0	500	SOD323
SMPN7320-SOD323	- - -	100	0.20	0.30	2.00	4.5	170	SOD323
Test Conditions		$I_R =$ 10 µA	$V_R = 5$ $V_R = 10$ $V_R = 50$		$I_F = 10$ mA F = 100 MHz		$I_F = 10$ mA $I_R = 6$ mA	

SOT23



SOD323

Silicon NIP Diodes

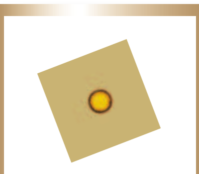
The MNP00XX series of NIP diodes are offered in four different I-layers and feature fully passivated, mesa construction for low leakage and relability. Screening per MIL-PRF-19500 and MIL-PRF-3534 are available.

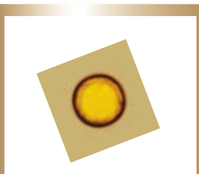
Chips

Model	V_{BR}	C_J		R_S		τ	Contact	I-Layer	θ_{JC}	Outline
	MIN V	TYP V	MAX pF	TYP Ω	MAX Ω	TYP ns	MIN mils	NOM microns	MAX °C/W	
MNP0008	100	0.08	0.12	2.0	2.5	150	2.0	10	50	C12P
MNP0010	150	0.08	0.12	2.0	2.5	300	3.0	20	50	C12P
MNP0012	300	0.08	0.12	3.5	4.0	350	4.0	40	40	C12P
MNP0012A	350	0.18	0.22	0.55	0.80	650	6.0	40	25	C22P
MNP0014	500	0.12	0.18	1.3	1.6	750	8.0	80	20	C22P
MNP0014A	500	0.18	0.22	0.8	1.2	1,400	10.0	80	10	C32P
Test Conditions	$I_R = 10\ \mu A$	$V_R = 10$ V $V_R = 50$ V * F = 1 MHz		$I_F = 10$ mA $I_F = 100$ mA F = 1 GHz		$I_F = 10$ mA $I_R = 6$ mA 50% rec.				

Packaged

Model	V_{BR}	C_T		R_S		τ	C_P	L_P	Outline
	MIN V	TYP pF	MAX pF	TYP Ω	MAX Ω	TYP ns	TYP pF	TYP nH	
MNP0008-ET47P	100	0.48	0.60	2.0	2.5	150	2 x 0.20	2 x 0.25	ET47P
MNP0008-T54P	100	0.28	0.37	2.0	2.5	150	0.20	0.4	T54P
MNP0008-T55P	100	0.21	0.29	2.0	2.5	150	.013	0.25	T55P
MNP0008-T89P	100	0.33	0.43	2.0	2.5	150	0.25	0.4	T89P
MNP0010-ET47P	150	.048	0.60	2.0	2.5	300	2 x 0.20	2 x 0.25	ET47P
MNP0010-T54P	150	0.28	0.37	2.0	2.5	300	0.20	0.4	T54P
MNP0010-T55P	150	0.21	0.29	2.0	2.5	300	.013	0.25	T55P
MNP0010-T89P	150	0.33	0.43	2.0	2.5	300	.025	0.4	T89P
MNP0012-ET47P	300	0.48	0.60	3.5	4.0	350	2 x 0.20	2 x 0.25	ET47P
MNP0012-T54P	300	0.28	0.37	3.5	4.0	350	0.20	0.4	T54P
MNP0012-T55P	300	0.21	0.29	3.5	4.0	350	0.13	0.25	T55P
MNP0012-T89P	300	0.33	0.43	3.5	4.0	350	0.25	0.4	T89P
MNP0012A-ET47P	350	0.58	0.72	0.55	0.8	650	2 x 0.20	2 x 0.25	ET47P
MNP0012A-T54P	350	0.36	0.47	0.55	0.8	650	0.20	0.4	T54P
MNP0012A-T55P	350	0.31	0.39	0.55	0.8	650	0.13	0.25	T55P
MNP0012A-T89P	350	0.43	0.53	0.55	0.8	650	0.25	0.4	T89P
MNP0014-ET47P	450	0.52	0.58	0.8	1.2	750	2 x 0.20	2 x 0.25	ET47P
MNP0014-T54P	450	0.32	0.48	0.8	1.2	750	0.20	0.4	T54P
MNP0014-T55P	450	0.25	0.35	0.8	1.2	750	0.13	0.25	T55P
MNP0014-T89P	450	0.37	0.50	0.8	1.2	750	0.25	0.4	T89P
Test Conditions	$I_R = 10\ \mu A$	$V_R = 10$ V $V_R = 50$ V * F = 1 MHz		$I_F = 10$ mA $I_F = 100$ mA F = 1 GHz		$I_F = 10$ mA $I_R = 6$ mA 50% rec.			


C12


C22

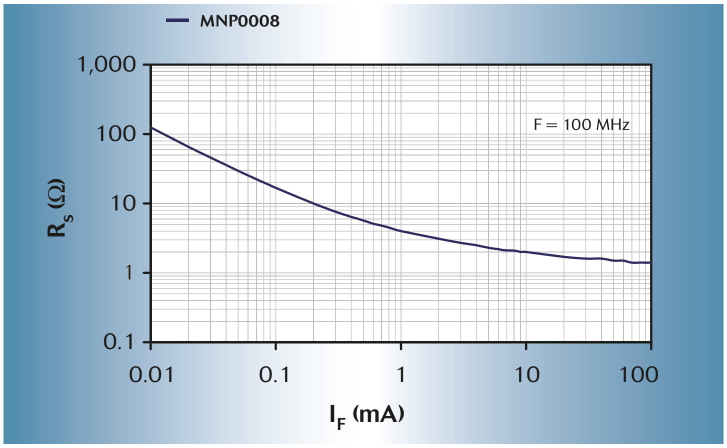

ET47


T55

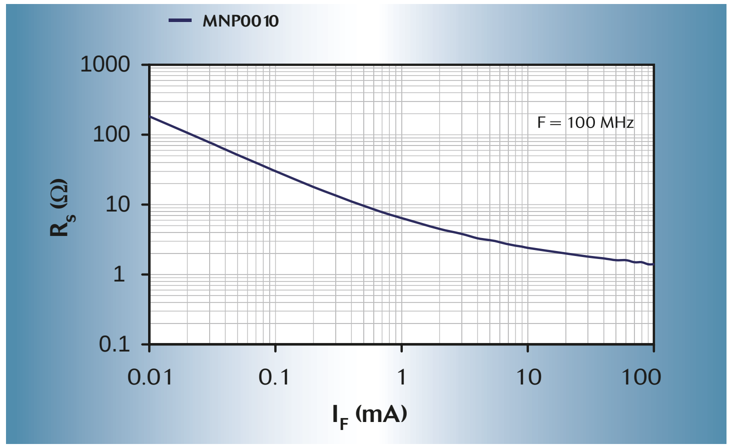

T89

Silicon NIP Diodes

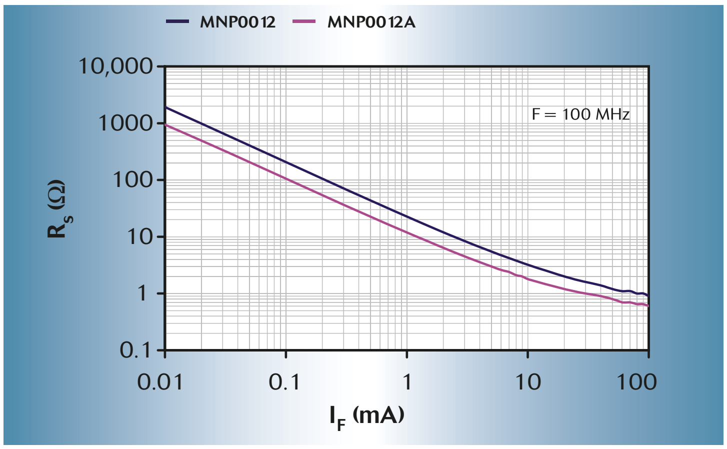
Series Resistance vs. Forward Curent



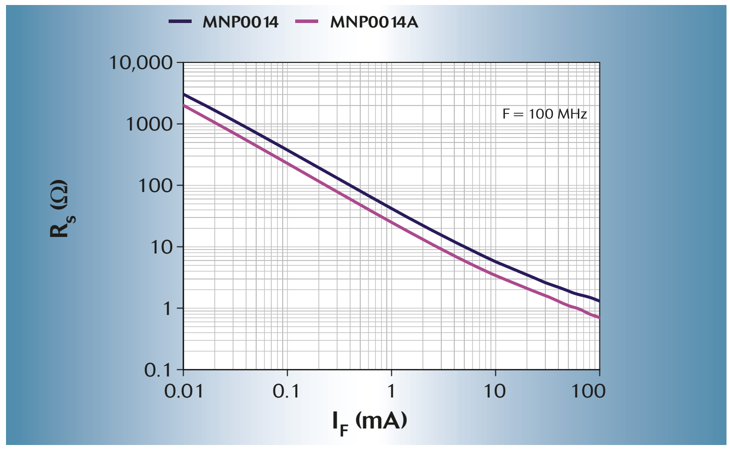
Series Resistance vs. Forward Current

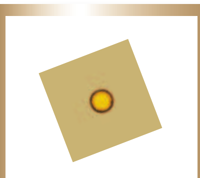


Series Reistance vs. Forward Current



Series Resistance vs. Forward Current





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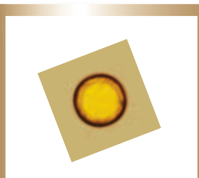


C22

ET47

T55

T89

Silicon Step Recovery Diodes

The diodes feature fully passivated, true mesa construction for sharp transitions and improved stability. The Beam lead SRDs have the industry's fastest transition times for millimeter wave multiplication and pico second pulse forming.

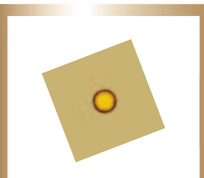
Chip and Beam Lead

Model	V_{BR}	C_J		τ		t_t		F_{CO}	θ_{JC}	Package
	MIN	MIN	MAX	MIN	TYP	TYP	MAX	TYP	MAX	
	V	pF	pF	ns	ns	ps	ps	GHz	°C/W	
MMDB30-B11	14	0.15	0.25	1.0	4.0	30	38	530	600	B11
MMDB35-B11	16	0.13	0.20	1.0	4.0	35	45	482	600	B11
MMDB45-B11	25	0.11	0.20	3.0	8.0	45	58	410	600	B11
MMD805-C12	60	2.5	3.5	80	100	250	300	130	15	C12
MMD810-C12	50	1.5	2.5	40	70	200	250	200	22	C12
MMD820-C12	40	1.0	1.7	30	60	80	100	390	25	C12
MMD830-C11	25	0.5	1.0	15	30	60	80	700	45	C11
MMD832-C11	20	0.4	0.8	10	15	60	80	660	50	C11
MMD835-C11	15	0.3	0.7	10	20	60	70	800	60	C11
MMD837-C11	20	0.2	0.4	5	10	60	70	1,300	60	C11
MMD840-C11	15	0.2	0.4	7	15	60	70	880	60	C11
Test Conditions	I_R = 10 µA	V_R = 6 V F = 1 MHz		I_F = 10 mA I_R = 6 mA Measured at 50% Recovery		I_F = 3 mA V_R = 7 V I_F = 10 mA V_R = 10 V		F_{CO} = 1 / $2\pi R_S$		

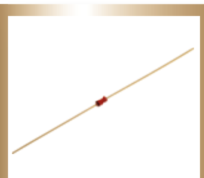
Glass Packaged

Model	V_{BR}	C_J	C_T	τ		t_t		C_P	L_P	Package
	MIN	MAX	TYP	MIN	TYP	TYP	MAX	TYP	TYP	
	V	pF	pF	ns	ns	ps	ps	pF	nH	
MMD0151	15	0.65	0.55	10	15	100	- - -	0.15	2.5	A15
MMD0153	25	0.40	0.40	10	15	95	- - -	0.15	2.5	A15
MMD0803	70	6.0	4.0	200	250	275	400	0.15	2.5	A15
MMD0815	50	4.0	3.0	100	135	180	320	0.15	2.5	A15
MMD0825	45	2.0	1.0	30	50	130	160	0.15	2.5	A15
MMD0833	25	1.6	1.65	10	15	90	- - -	0.15	2.5	A15
MMD0840	15	0.60	0.60	10	20	75	- - -	0.15	2.5	A15
Test Conditions	I_R = 10 µA	V_R = 6 V V_R = 10 V F = 1 MHz		I_F = 10 mA I_R = 6 mA Measured at 50% Recovery		I_F = 10 mA V_R = 10 V Chip data, package limited to 100 ps		F = 1 MHz		

B11



C12



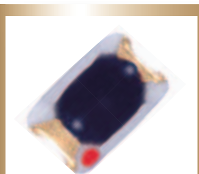
A15

Silicon Step Recovery Diodes

Ceramic Packaged

Model	V_{BR}	C_T		τ		t_t		C_P	L_P	Package
	MIN V	MIN pF	MAX pF	MIN ns	TYP ns	TYP ps	MAX ps	TYP pF	TYP nH	
MMD805-E28 / 28X	60	3.1	3.6	80	100	250	300	0.08	0.4	E28 / 28X
MMD805-H20	60	3.2	3.7	80	100	250	300	0.18	0.5	H20
MMD805-T86	60	3.2	3.7	80	100	250	300	0.18	1.0	T86
MMD805-T89	60	3.3	3.8	80	100	250	300	0.25	0.4	T89
MMD805-0805-2	60	3.1	3.6	80	100	250	300	0.06	0.4	0805-2
MMD810-E28 / 28X	50	2.1	2.6	40	70	200	250	0.08	0.4	E28 / 28X
MMD810-H20	50	2.2	2.7	40	70	200	250	0.18	0.5	H20
MMD810-T86	50	2.2	2.7	40	70	200	250	0.18	1.0	T86
MMD810-T89	50	2.3	2.8	40	70	200	250	0.25	0.4	T89
MMD820-E28 / 28X	40	1.4	1.8	30	60	80	100	0.08	0.4	E28 / 28X
MMD820-H20	40	1.5	1.9	30	60	80	100	0.18	0.5	H20
MMD820-T86	40	1.5	1.9	30	60	80	100	0.18	1.0	T86
MMD820-0805-2	40	1.4	1.8	30	60	80	100	0.06	0.4	805-2
MMD830-E28 / 28X	25	0.83	1.1	15	30	60	80	0.08	0.4	E28 / 28X
MMD830-H20	25	0.93	1.2	15	30	60	80	0.18	0.5	H20
MMD830-T86	25	0.93	1.2	15	30	60	80	0.18	1.0	T86
MMD830-0805-2	25	0.81	1.1	15	30	60	80	0.06	0.4	805-2
MMD832-E28 / 28X	20	0.68	0.9	10	15	60	80	0.08	0.4	E28 / 28X
MMD832-H20	20	0.78	1.0	10	15	60	80	0.18	0.5	H20
MMD832-T86	20	0.78	1.0	10	15	60	80	0.18	1.0	T86
MMD832-0805-2	20	0.66	0.88	10	15	60	80	0.06	0.4	805-2
MMD835-E28 / 28X	15	0.58	0.81	10	20	50	70	0.08	0.4	E28 / 28X
MMD835-H20	15	0.62	0.85	10	20	50	70	0.12	0.4	H27
MMD835-T86	15	0.68	0.91	10	20	50	70	0.18	1.0	T86
MMD835-0805-2	15	0.56	0.78	10	20	50	70	0.06	0.4	805-2
MMD837-E28 / 28X	20	0.38	0.51	5	10	50	70	0.08	0.4	E28 / 28X
MMD837-H27	20	0.42	0.55	5	10	50	70	0.12	0.4	H27
MMD837-T86	20	0.48	0.61	5	10	50	70	0.18	1.0	T86
MMD837-0805-2	20	0.36	0.48	5	10	50	70	0.06	0.4	805-2
MMD840-E28 / 28X	15	0.38	0.51	7	15	50	70	0.08	0.4	E28 / 28X
MMD840-H27	15	0.42	0.55	7	15	50	70	0.12	0.4	H27
MMD840-T86	15	0.48	0.61	7	15	50	70	0.18	1.0	T86
MMD840-0805-2	15	0.36	0.48	7	15	50	70	0.06	0.4	0805-2
MMDB30-E28 / 28X	14	0.28	0.36	1.0	4.0	30*	38*	0.08	0.4	E28 / 28X
MMDB30-0402	14	0.25	0.32	1.0	4.0	30*	38*	0.05	0.2	0402
MMDB30-0805-2	14	0.26	0.33	1.0	4.0	30*	38*	0.06	0.4	0805-2
MMDB35-E28 / 28X	16	0.25	0.31	1.0	4.0	35*	45*	0.08	0.4	E28 / 28X
MMDB35-0402	16	0.22	0.28	1.0	4.0	35*	45*	0.05	0.2	0402
MMDB35-0805-2	16	0.23	0.29	1.0	4.0	35*	45*	0.06	0.4	0805-2
MMDB45-E28 / 28X	25	0.24	0.31	3.0	8.0	45*	58*	0.08	0.4	E28 / 28X
MMDB45-0402	25	0.21	0.28	3.0	8.0	45*	58*	0.05	0.2	0402
MMDB45-0805-2	25	0.22	0.29	3.0	8.0	45*	58*	0.06	0.4	0805-2
Test Conditions	I_R = 10 µA	V_R = 6 V, F = 1 MHz		I_F = 10 mA, I_R = 6 mA, Measured at 50% Recovery		I_F = 10 mA, V_R = 10 V, *I_F = 3 mA, *V_R = 7 V				


0402


0805-2


E28

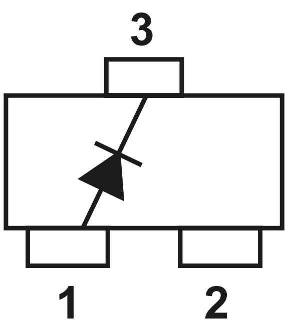

H20


T86

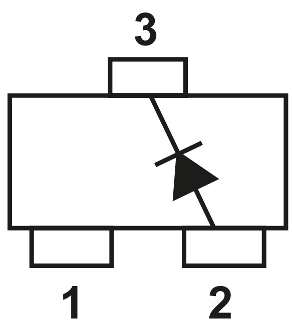

T89

Silicon Step Recovery Diodes

Configuration Codes



-0S

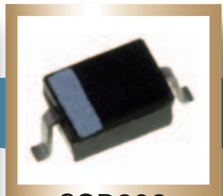


-1S

Plastic Packaged

Model	Configuration	V_{BR}	C_T		τ		t_t		Package
		MIN V	TYP pF	MAX pF	MIN ns	TYP ns	TYP ps	MAX ps	
SMMD805-SOT23	-0S, 1S	60	2.5	3.5	80	100	250	300	SOT23
SMMD810-SOT23	-0S, 1S	50	1.5	2.5	40	70	200	250	SOT23
SMMD820-SOT23	-0S, 1S	40	1.0	1.7	30	60	110	125	SOT23
SMMD830-SOT23	-0S, 1S	25	0.5	1.0	15	30	90	110	SOT23
SMMD832-SOT23	-0S, 1S	20	0.4	0.8	10	20	85	100	SOT23
SMMD835-SOT23	-0S, 1S	20	0.3	0.7	10	15	80	100	SOT23
SMMD837-SOT23	-0S, 1S	20	0.2	0.4	5	12	75	90	SOT23
SMMD840-SOT23	-0S, 1S	15	0.2	0.4	5	10	70	90	SOT23
SMMD805-SOD323	- - -	60	2.5	3.5	80	100	250	300	SOD323
SMMD810-SOD323	- - -	50	1.5	2.5	40	70	200	250	SOD323
SMMD820-SOD323	- - -	40	1.0	1.7	30	60	110	125	SOD323
SMMD830-SOD323	- - -	25	0.5	1.0	15	30	90	110	SOD323
SMMD832-SOD323	- - -	20	0.4	0.8	10	20	85	100	SOD323
SMMD835-SOD323	- - -	20	0.3	0.7	10	15	80	100	SOD323
SMMD837-SOD323	- - -	20	0.2	0.4	5	12	75	90	SOD323
SMMD840-SOD323	- - -	15	0.2	0.4	5	10	70	90	SOD323
Test Conditions		I_R = 10 μA	V_R = 6 V, F = 1 MHz		I_F = 10 mA, I_R = 6 mA, 50% Recovery		I_F = 10 mA, V_R = 10 V		

SOT23



SOD323

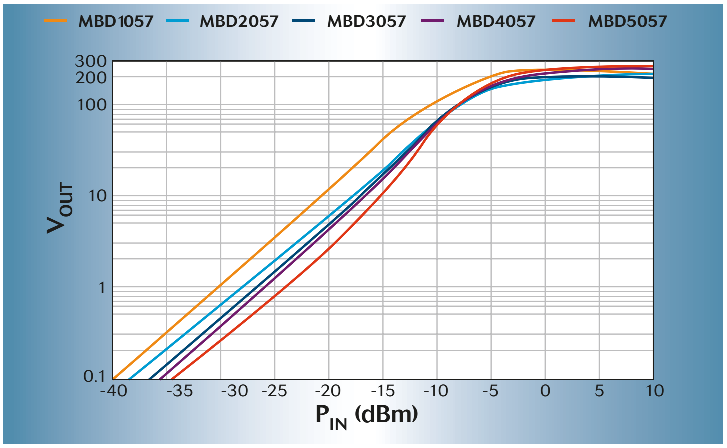
Planar Back (Tunnel) Diodes

The MBD series of tunnel (back) diodes are fabricated on germanium substrates with passivated, planar construction and all gold metallization for reliable operation up to +115 °C. Unlike the standard tunnel diode I_P is minimized for detector operation and binned in five values offering varying degrees of sensitivity and video impedance. The back detector is generally operated with zero bias and is known for its excellent temperature stability and fast video rise times.

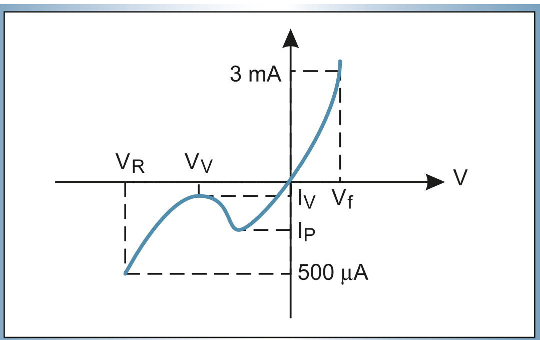
Chips

Model	I_P MIN µA	I_P MAX pF	C_J MAX pF	γ TYP mV / mW	R_V TYP Ω	I_P / I_V MIN	V_R MIN mV	V_F MAX mV	Package
MBD1057-C18	100	200	0.30	1,000	180	2.5	420	135	C18
MBD2057-C18	200	300	0.30	750	130	2.5	410	130	C18
MBD3057-C18	300	400	0.30	500	80	2.5	400	125	C18
MBD4057-C18	400	500	0.30	275	65	2.5	400	120	C18
MBD5057-C18	500	600	0.30	250	60	2.5	400	110	C18
Test Conditions			$V_R = V_V$ F = 100 MHz	P_{IN} = -20 dBm R_L = 10 KΩ	F = 10 GHz		I_R = 500 µA	I_F = 3 mA	

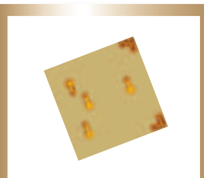
Detected Output vs. RF Input Power



Back Diode Paramaters



BOTTOM METALIZATION IS CATHODE
BONDING PAD IS ANODE



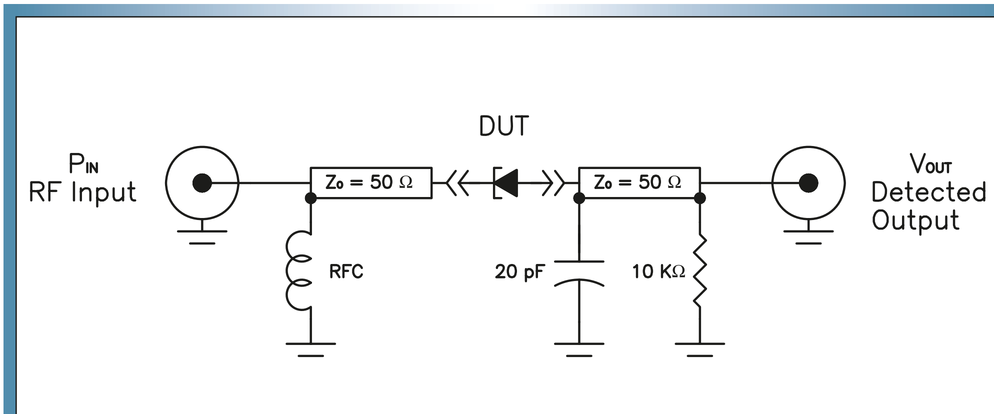
C18

Planar Back (Tunnel) Diodes

Packaged

Model	I_P MIN µA	I_P MAX pF	C_T MAX pF	γ TYP mV / mW	R_V TYP Ω	I_P / I_V MIN	V_R MIN mV	V_F MAX mV	Package
MBD1057-E28 / 28X	100	200	0.40	1,000	180	2.5	420	135	E28 / 28X
MBD1057-H20	100	200	0.50	1,000	180	2.5	420	135	H20
MBD1057-T54	100	200	0.55	1,000	180	2.5	420	135	T54p
MBD1057-T80	100	200	0.65	1,000	180	2.5	420	135	T80p
MBD2057-E28 / 28X	200	300	0.40	750	130	2.5	410	130	E28 / 28X
MBD2057-H20	200	300	0.50	750	130	2.5	410	130	H20
MBD2057-T54	200	300	0.55	750	130	2.5	410	130	T54p
MBD2057-T80	200	300	0.65	750	130	2.5	410	130	T80p
MBD3057-E28 / 28X	300	400	0.45	500	80	2.5	400	125	E28 / 28X
MBD3057-H20	300	400	0.55	500	80	2.5	400	125	H20
MBD3057-T54	300	400	0.60	500	80	2.5	400	125	T54p
MBD3057-T80	300	400	0.70	500	80	2.5	400	125	T80p
MBD4057-E28 / 28X	400	500	0.50	275	65	2.5	400	120	E28 / 28X
MBD4057-H20	400	500	0.60	275	65	2.5	400	120	H20
MBD4057-T54	400	500	0.65	275	65	2.5	400	120	T54p
MBD4057-T80	400	500	0.75	275	65	2.5	400	120	T80p
MBD5057-E28 / 28X	500	600	0.55	250	60	2.5	400	110	E28 / 28X
MBD5057-H20	500	600	0.65	250	60	2.5	400	110	H20
MBD5057-T54	500	600	0.70	250	60	2.5	400	110	T54p
MBD5057-T80	500	600	0.80	250	60	2.5	400	110	T80p
Test Conditions			$V_R = V_V$ F = 30 MHz	P_{IN} = -20 dBm R_L = 10 KΩ F = 10 GHz			I_R = 500 µA	I_F = 3 mA	

10 GHz RF Detector Test Circuit

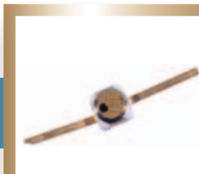



T54p


T80p


E28

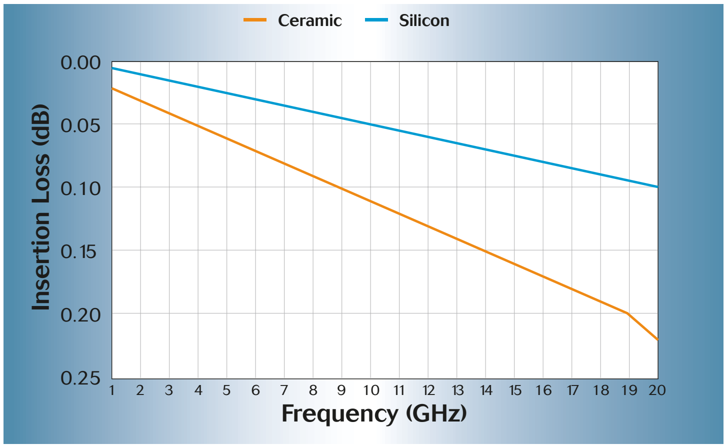

E28X


H20

MIS / MOS Capacitors

Aeroflex / Metelics MIS capacitors utlize a silicon nitride dielectric over a thermally grown silicon dioxide base. The resultant composite dielectric exhibits low leakage current and insertion loss with excellent long-term stability. The temperature coefficient of capcitance is typically +55 ppm / °C.

Typical Insertion Loss of Single Layer Capacitors



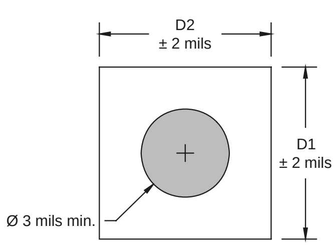


Figure 1

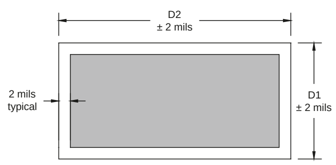


Figure 2

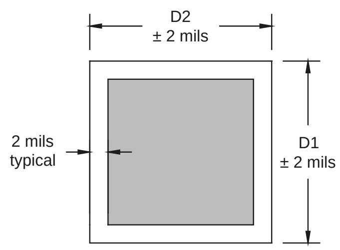


Figure 3

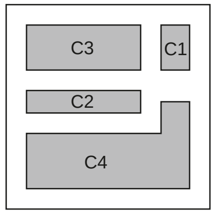


Figure 4

Chips - Figure 1 *(XXX = Three digit capacitance code, ex. 005 = 5 pF , 082 = 82 pF, 1.5 = 1.5 pF)*

Model	Capacitance Range		DWV	IR	T_{CC}	Dimensions	
	MIN pF	MAX pF	MIN V	MIN MΩ	TYP ppm / °C	D1 mils	D2 mils
MC2DXXX010-010	0.10	5.0	50	1,000	+55	10	10
MC2DXXX015-015	1.5	15	50	1,000	+55	15	15
MC2DXXX020-020	5.0	50	50	1,000	+55	20	20
Test Conditions	F = 1 MHz			V = 25 V	-55 °C to +200 °C		


MC2D

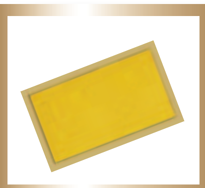
MIS / MOS Capacitors

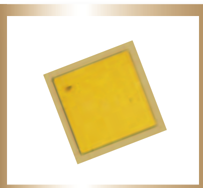
Chips - Figure 2 *(XXX = Three or four digit capacitance code, ex. 005 = 5 pF , 082 = 82 pF, 2.5 = 2.5 pF)*

Model	Capacitance Range		DWV	IR	T_{CC}	Dimensions	
	MIN pF	MAX pF	MIN V	MIN MΩ	TYP ppm / °C	D1 mils	D2 mils
MC2RXXX010-015	2.0	20	50	1,000	+55	10	15
MC2RXXX015-020	5.0	42	50	1,000	+55	15	20
MC2RXXX015-032	5.0	62	50	1,000	+55	15	32
MC2RXXX022-042	15	120	50	1,000	+55	22	42
MC2RXXX097-107	100	999	50	1,000	+55	97	107
MC2RXXX099-138	100	999	50	1,000	+55	99	138
MC2RXXXX127-145	200	1,800	50	1,000	+55	127	145
MC2RXXXX142-160	200	2,200	50	1,000	+55	142	160
Test Conditions	F = 1 MHz			V = 25 V	-55 °C to +200 °C		

Chips - Figure 3 *(XXX = Three digit capacitance code, ex. 005 = 5 pF , 082 = 82 pF)*

Model	Capacitance Range		DWV	IR	T_{CC}	Dimensions	
	MIN pF	MAX pF	MIN V	MIN MΩ	TYP ppm / °C	D1 mils	D2 mils
MC2SXXX010-010	0.25	8.0	50	1,000	+55	10	10
MC2SXXX011-011	1.0	12	50	1,000	+55	11	11
MC2SXXX015-015	3.0	30	50	1,000	+55	15	15
MC2SXXX016-016	3.0	35	50	1,000	+55	16	16
MC2SXXX020-020	5.0	55	50	1,000	+55	20	20
MC2SXXX022-022	5.0	60	50	1,000	+55	22	22
MC2SXXX025-025	10	100	50	1,000	+55	25	25
MC2SXXX030-030	10	120	50	1,000	+55	30	30
MC2SXXX035-035	15	150	50	1,000	+55	35	35
MC2SXXX040-040	20	200	50	1,000	+55	40	40
MC2SXXX050-050	25	250	50	1,000	+55	50	50
MC2SXXX055-055	25	300	50	1,000	+55	55	55
MC2SXXX060-060	35	375	50	1,000	+55	60	60
MC2SXXX070-070	50	550	50	1,000	+55	70	70
MC2SXXX080-080	70	700	50	1,000	+55	80	80
MC2SXXX100-100	100	999	50	1,000	+55	100	100
Test Conditions	F = 1 MHz			V = 25 V	-55 °C to +200 °C		


MC2R


MC2S

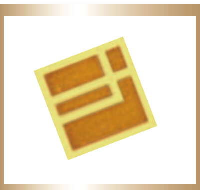
MIS / MOS Capacitors

Binary Chips - Figure 4

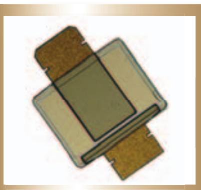
Model	Capacitance Range					DWV	IR	T_{CC}	Package
	C_T ±20% pF	C1 NOM pF	C2 NOM pF	C3 NOM pF	C4 NOM pF	MIN V	MIN MΩ	TYP ppm / °C	
MC2B0.8020-020	1.5	0.1	0.2	0.4	0.8	50	1,000	+55	C20
MC2B002020-020	3.75	0.25	0.5	1.0	2.0	50	1,000	+55	C20
MC2B004020-020	8.0	0.5	1.0	2.0	4.0	50	1,000	+55	C20
MC2B008020-020	15	1.0	2.0	4.0	8.0	50	1,000	+55	C20
MC2B016020-020	30	2.0	4.0	8.0	16	50	1,000	+55	C20
Test Conditions	F = 1 MHz						V = 25 V	-55 °C to +200 °C	

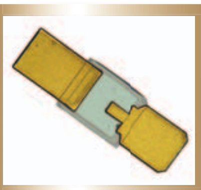
Beam Lead

Model	C_T ±20% pF	DWV MIN V	IR MIN mΩ	T_{CC} TYP ppm / °C	Package
MBC50-1B12	1.0	50	1,000	+55	B12
MBC50-2B12	2.0	50	1,000	+55	B12
MBC50-3B12	3.0	50	1,000	+55	B12
MBC50-4B12	4.0	50	1,000	+55	B12
MBC50-6B12	6.0	50	1,000	+55	B12
MBC50-8B12	8.0	50	1,000	+55	B12
MBC50-10B12	10	50	1,000	+55	B12
MBC50-15B12	15	50	1,000	+55	B12
MBC50-20B12	20	50	1,000	+55	B12
MBC50-33B13	33	50	1,000	+55	B13
MBC50-47B13	47	50	1,000	+55	B13
MBC50-68B13	68	50	1,000	+55	B13
MBC50-82B13	82	50	1,000	+55	B13
MBC50-100B13	100	50	1,000	+55	B13
MBC50-0.2B14	0.2	50	1,000	+55	B14
MBC50-1.0B14	1.0	50	1,000	+55	B14
MBC50-1.5B14	1.5	50	1,000	+55	B14
MBC50-2.0B14	2.0	50	1,000	+55	B14
Test Conditions	F = 1 MHz		V = 25 V	-55 °C to +200 °C	


C20


B12


B13


B14

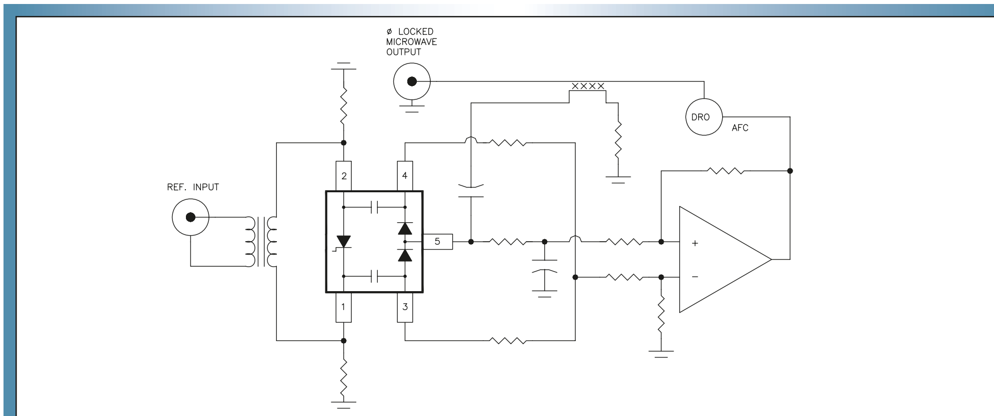
Sampling Phase Detector

The MSPD Series Integrates an SRD reference frequency multiplier, coupling capacitors and a Schottky diode microwave sampler / phase detector in a 0.075″ by 0.100″ hybrid. They are used to phase lock microwave oscillators up to 20 GHz to a much lower frequency reference by deriving a locking voltage from the sampled RF and the multiplied reference.

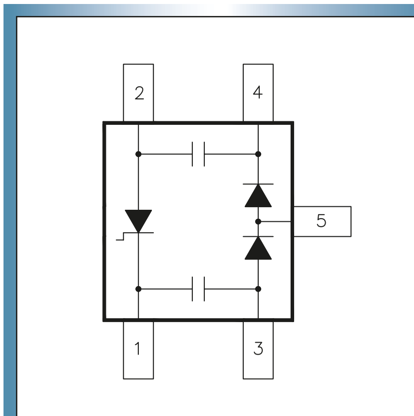
Packaged

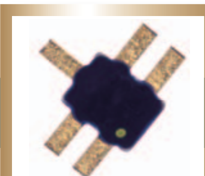
Model	Step Recovery Diode				Cap.	Schottky Diode				
	V_{BR} MIN V	C_J TYP pF	τ TYP ns	t_t MAX ps	C_T NOM pF	C_J TYP pF	V_F TYP mV	R_D TYP Ω	F_{MAX} TYP GHz	Package
MSPD1000-E50 / E50SM	15	1.0	35	95	20	0.4	270	7.0	0.50	E50 / E50SM
MSPD1000-H50	15	1.0	35	95	20	0.4	270	7.0	0.50	H50
MSPD1002-E50 / E50SM	15	0.5	20	70	3.5	0.22	270	8.0	2.0	E50 / E50SM
MSPD1002-H50	15	0.5	20	70	3.5	0.22	270	8.0	2.0	H50
MSPD1012-E50 / E50SM	15	0.5	10	70	2.5	0.18	270	9.0	12	E50 / E50SM
MSPD1012-H50	15	0.5	10	70	2.5	0.18	270	9.0	12	H50
MSPD2018-E50 / E50SM	15	0.35	5	55	0.6	0.10	430	16.0	22	E50 / E50SM
MSPD2018-H50	15	0.35	5	55	0.6	0.10	430	16.0	22	H50
Test Conditions	I_R = 10 µA	V_R = 6 V F = 1 MHz	I_F = 10 mA I_R = 6 mA	I_F = 10 mA V_R = 10 V	F = 1 MHz	V_R = 0 V F = 1 MHz	I_R = 1 mA	I_R = 5 mA		

Typical Circuit Application

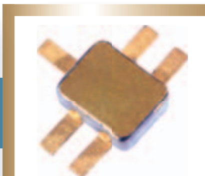


Schematic




E50


E50SM

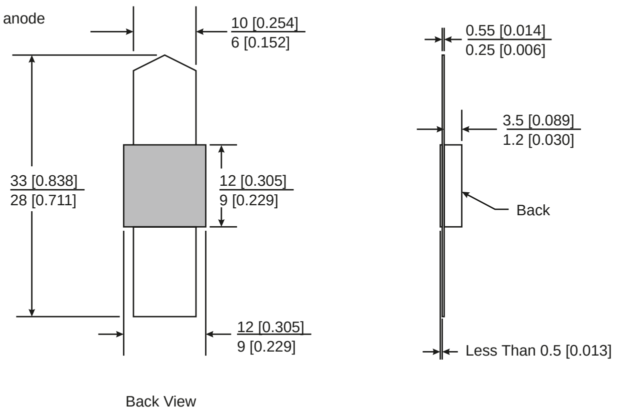

H50

Outline Drawings

Beam Lead

B10B

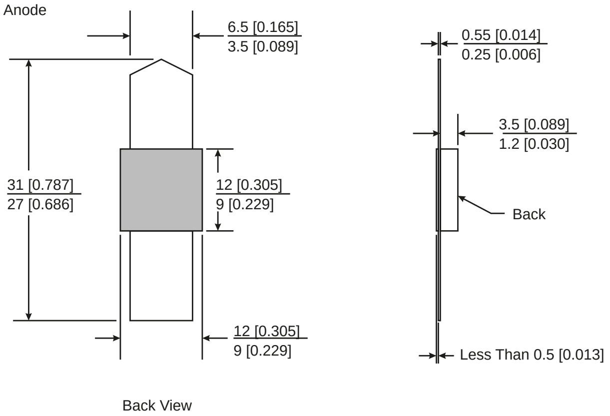
Cut lead is anode



mils (mm)

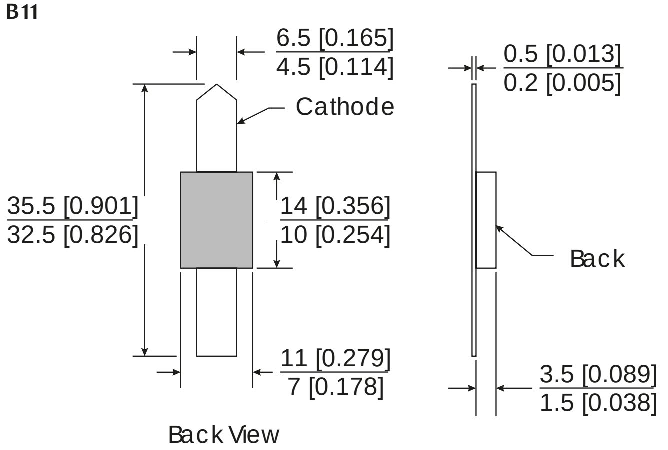
B10D

Cut lead is Anode



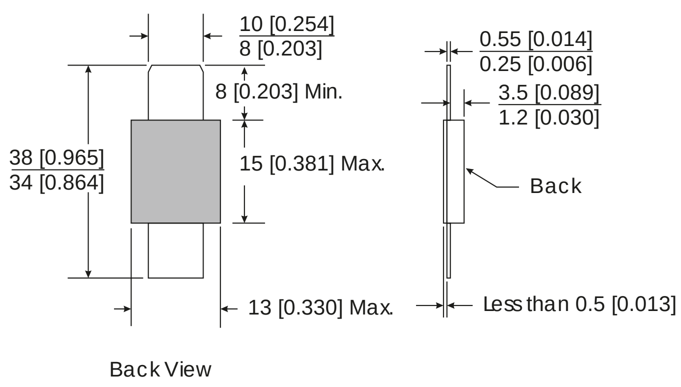
mils (mm)

B11



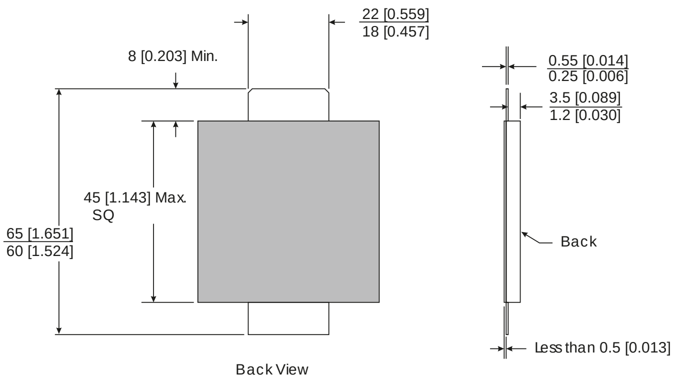
mils (mm)

B12



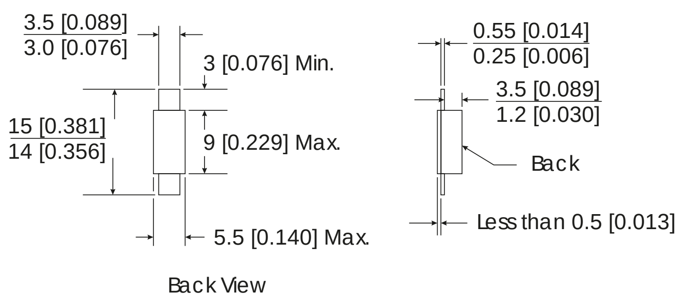
mils (mm)

B13



mils (mm)

B14

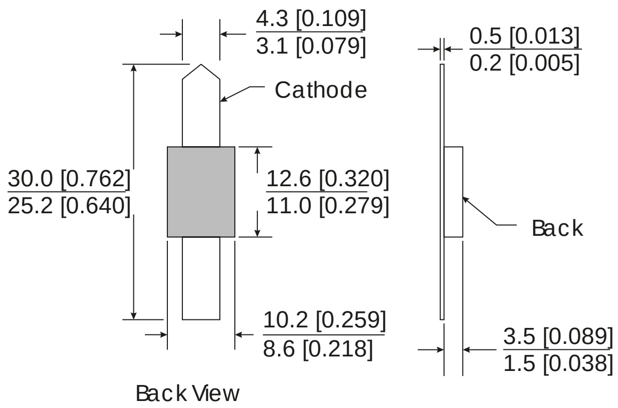


mils (mm)

Outline Drawings

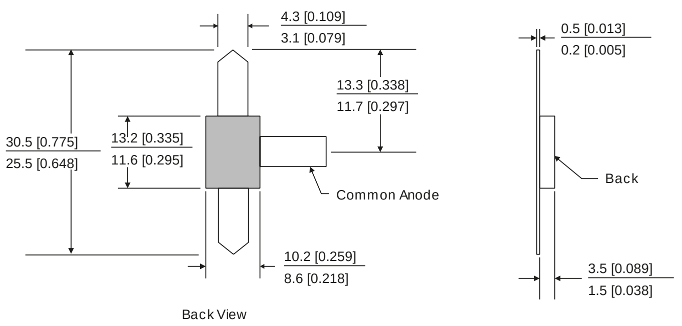
Beam Lead

B15



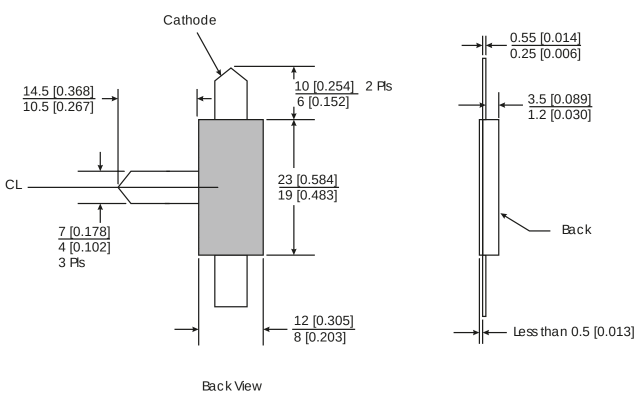
mils (mm)

B16



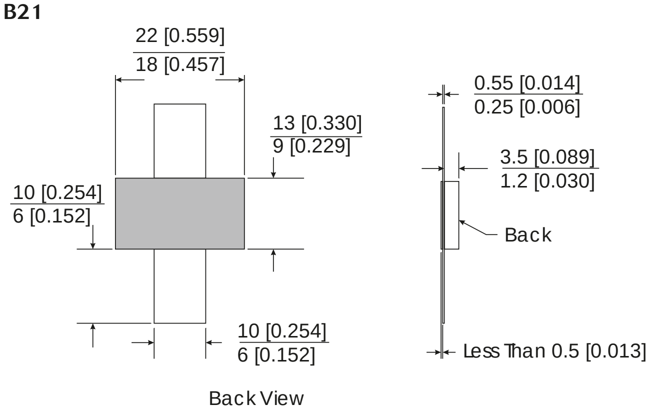
mils (mm)

B20



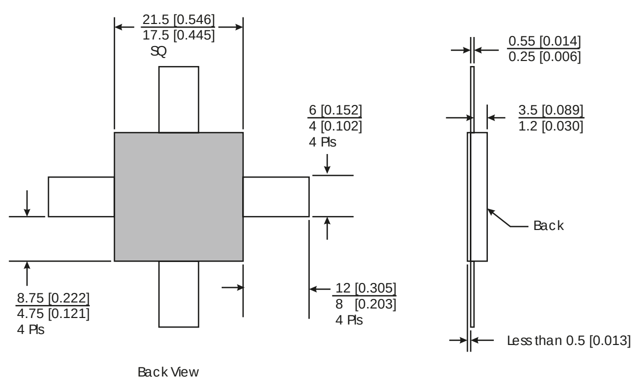
mils (mm)

B21



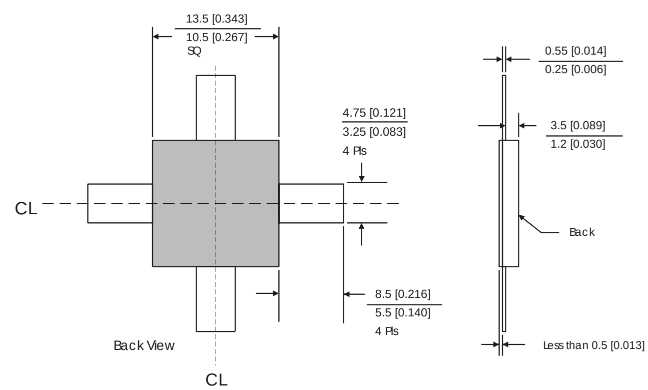
mils (mm)

B40



mils (mm)

B41

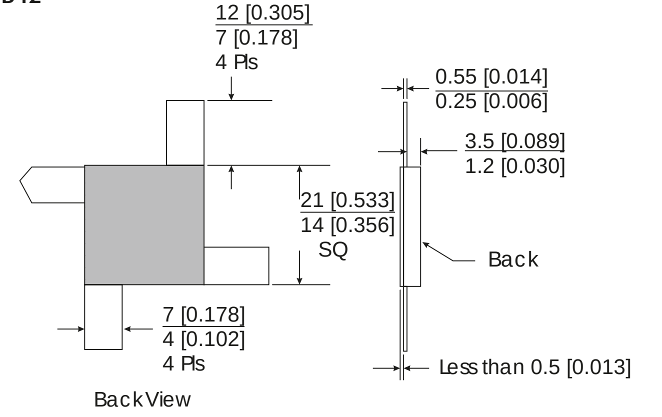


mils (mm)

Outline Drawings

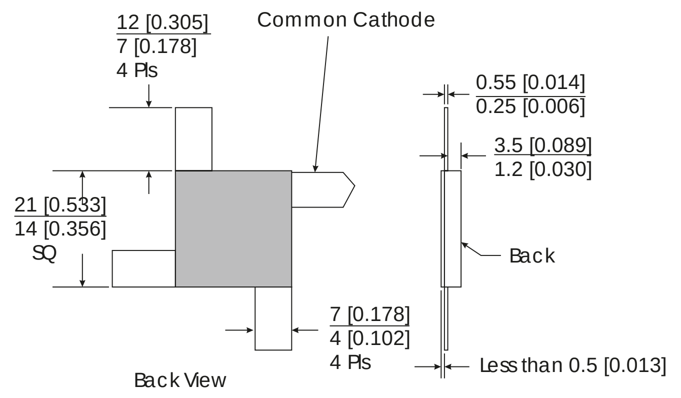
Beam Lead

B42



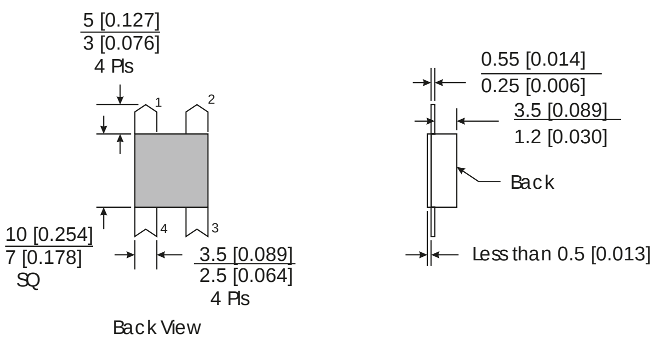
mils (mm)

B45



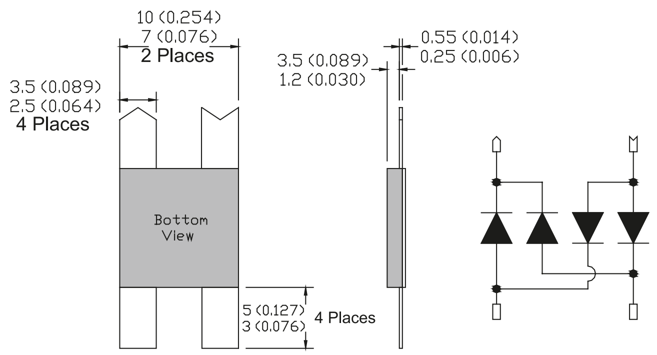
mils (mm)

B47



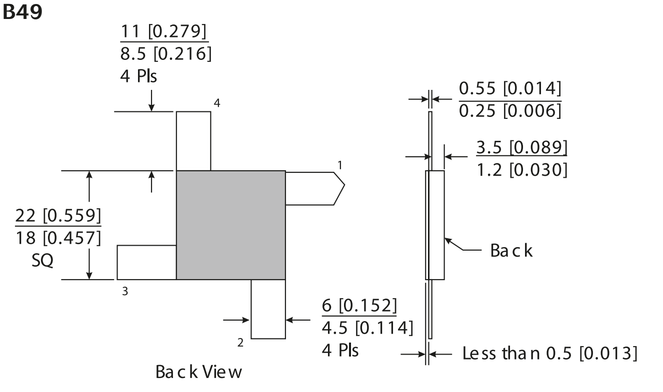
mils (mm)

B48



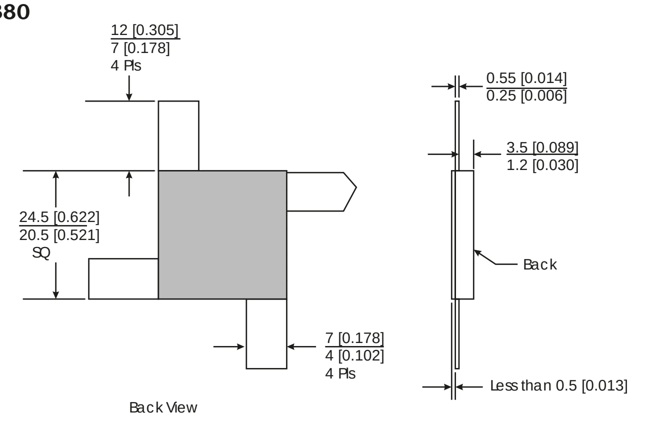
mils (mm)

B49



mils (mm)

B80

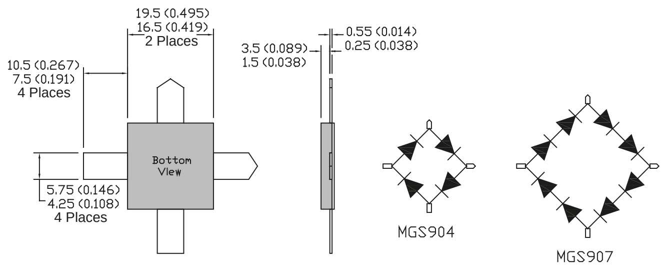


mils (mm)

Outline Drawings

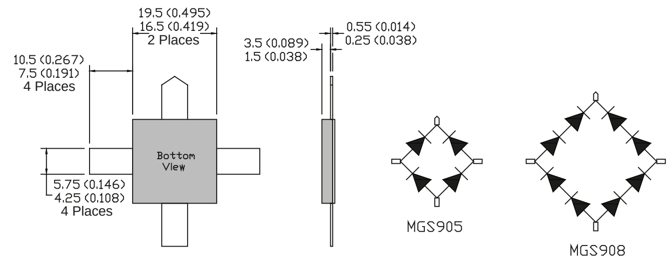
Beam Lead

B85



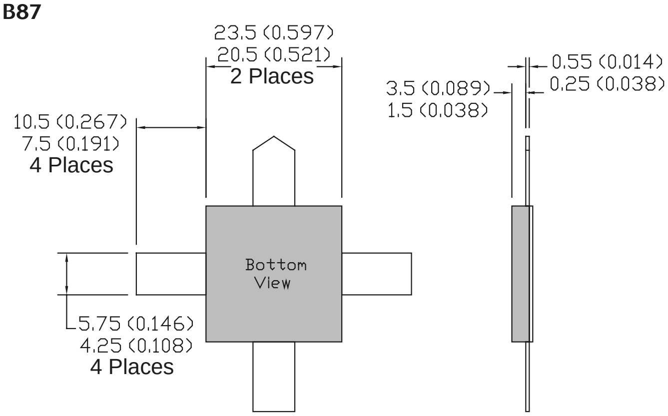
mils (mm)

B86



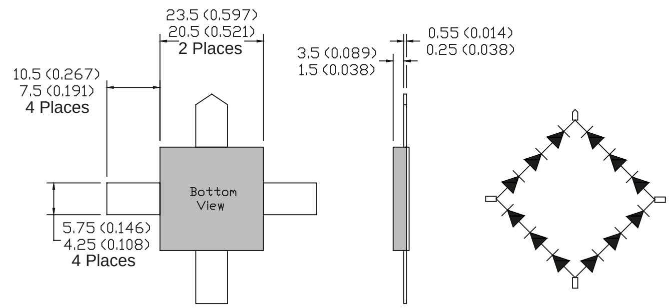
mils (mm)

B87



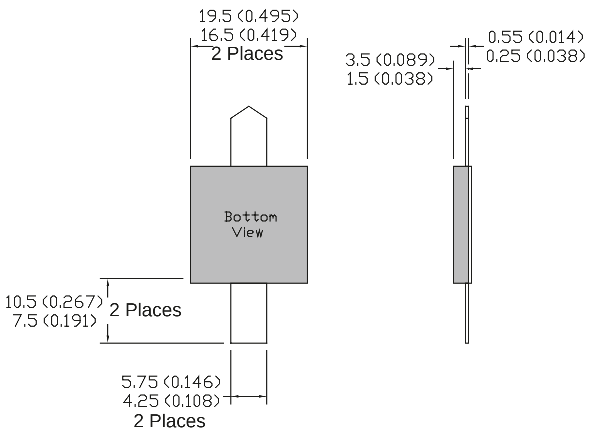
mils (mm)

B88



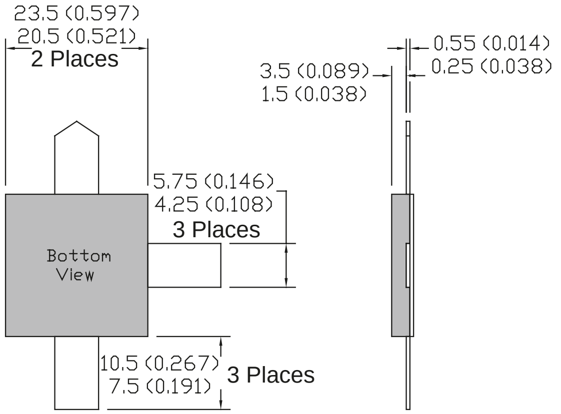
mils (mm)

B89



mils (mm)

B90

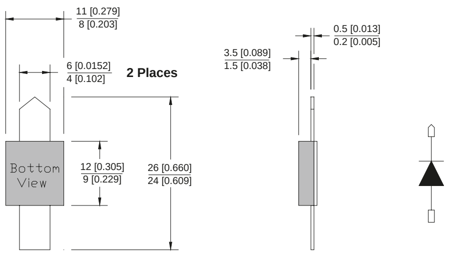


mils (mm)

Outline Drawings

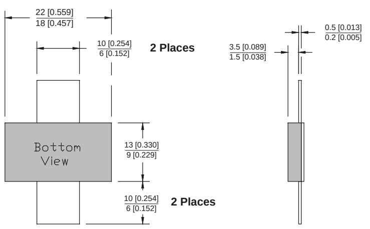
Beam Lead

GB110



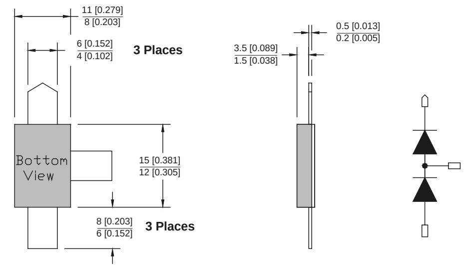
mils (mm)

GB210



mils (mm)

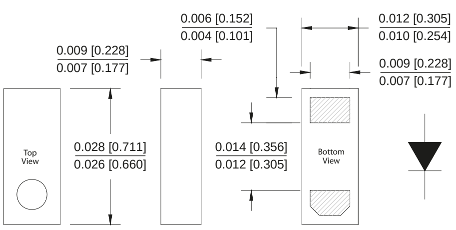
GB310



mils (mm)

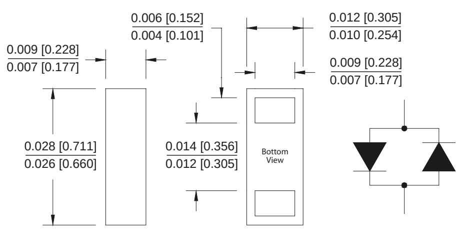
Flip Chip

GC110



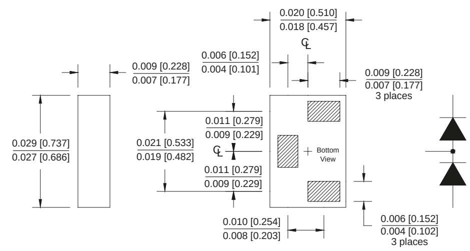
mils (mm)

GC210



mils (mm)

GC310

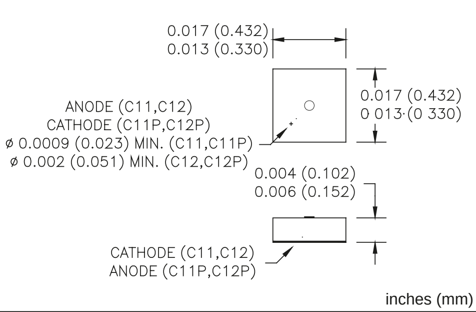


mils (mm)

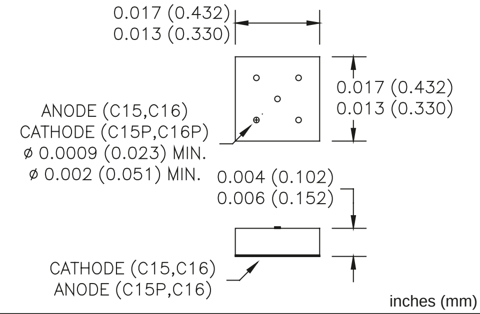
Outline Drawings

Chip

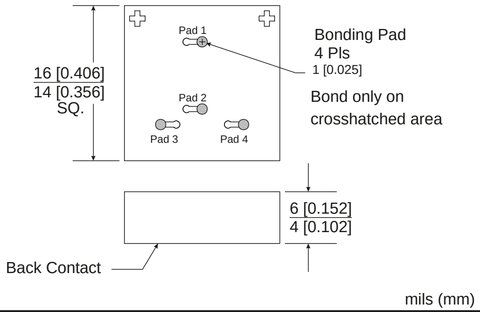
C11 / C12



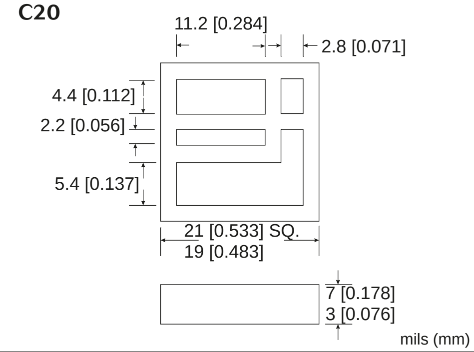
C15 / C16



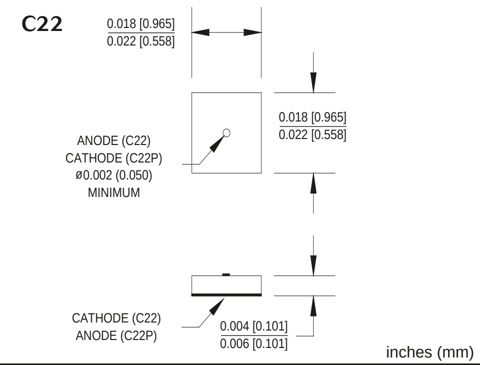
C18



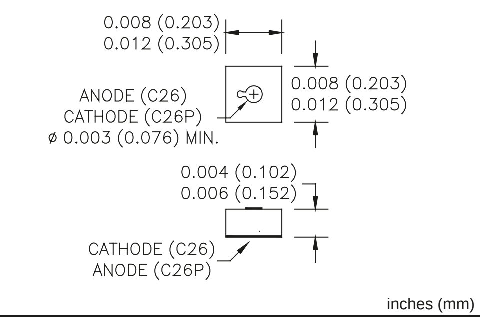
C20



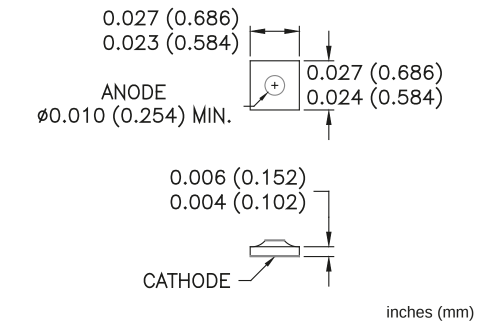
C22



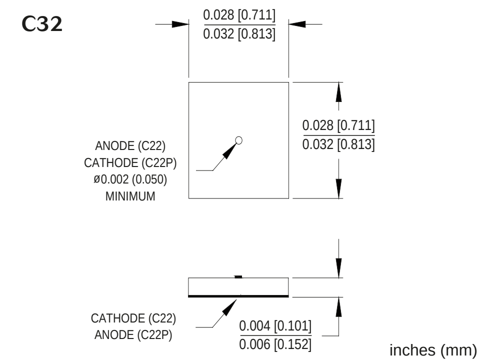
C26



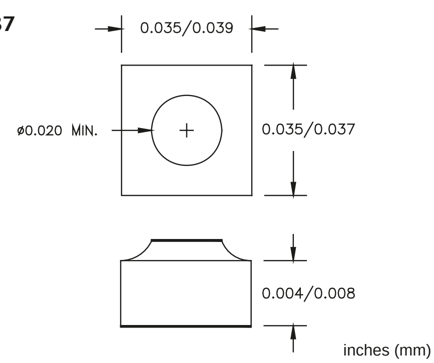
C40



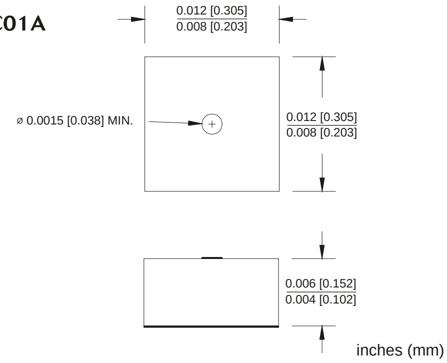
C32



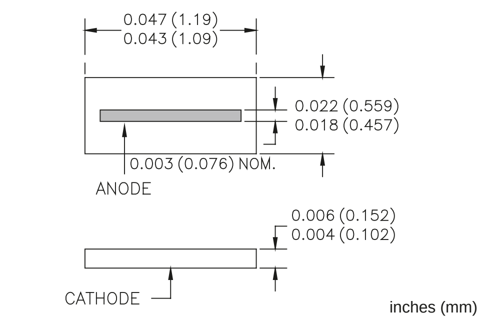
C37



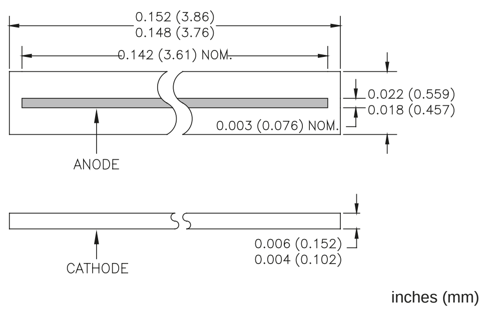
C01A



C50



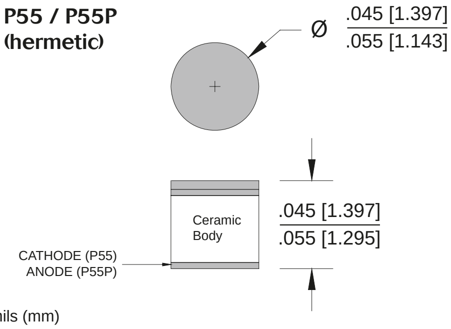
C51



Outline Drawings

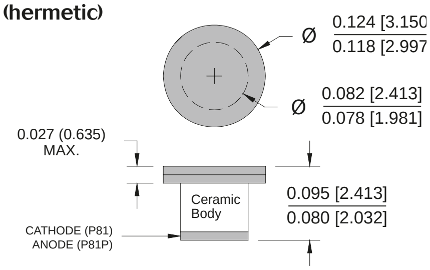
Coaxial

P55 / P55P
(hermetic)



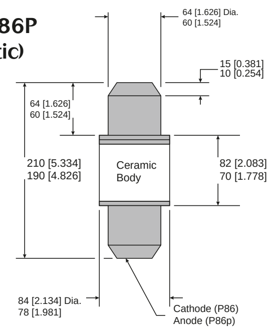
mils (mm)

P81
(hermetic)



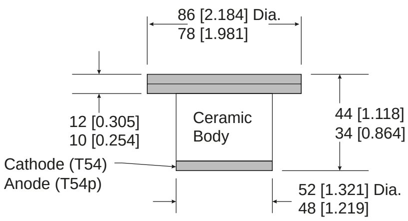
mils (mm)

P86 / P86P
(hermetic)



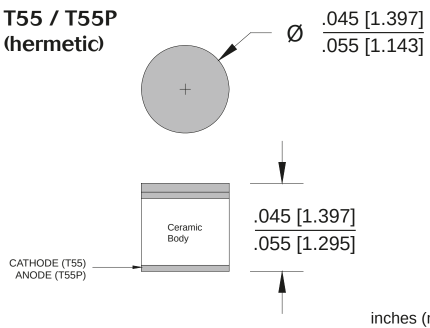
mils (mm)

T54 / T54P
(hermetic)



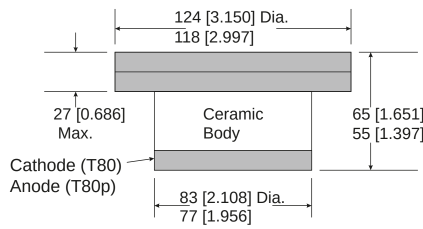
mils (mm)

T55 / T55P
(hermetic)



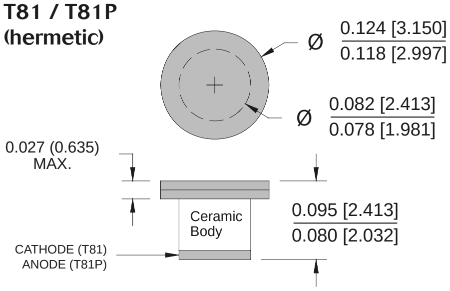
inches (mm)

T80 / T80P
(hermetic)



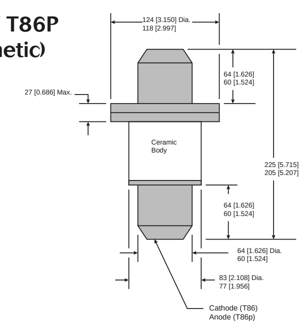
mils (mm)

T81 / T81P
(hermetic)



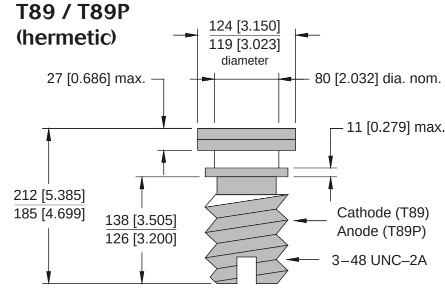
inches (mm)

T86 / T86P
(hermetic)



mils (mm)

T89 / T89P
(hermetic)

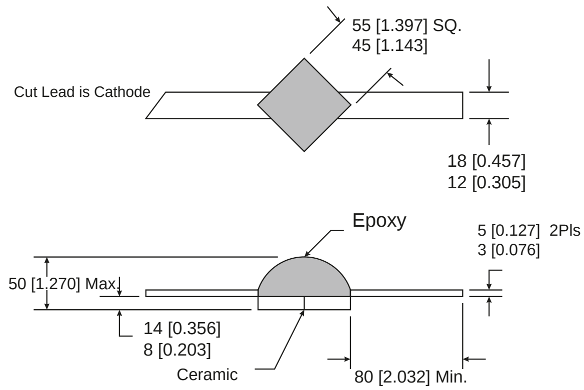


mils (mm)

Outline Drawings

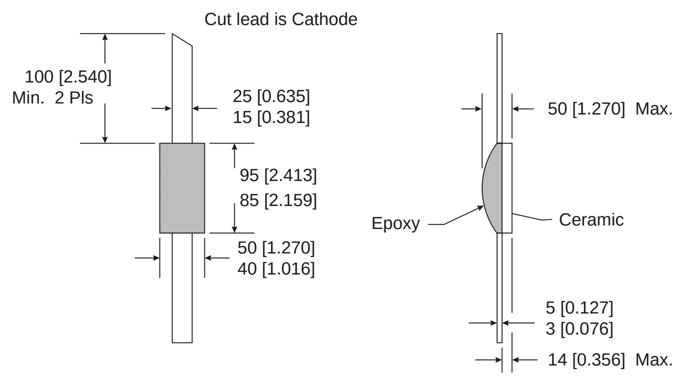
Epoxy

E25



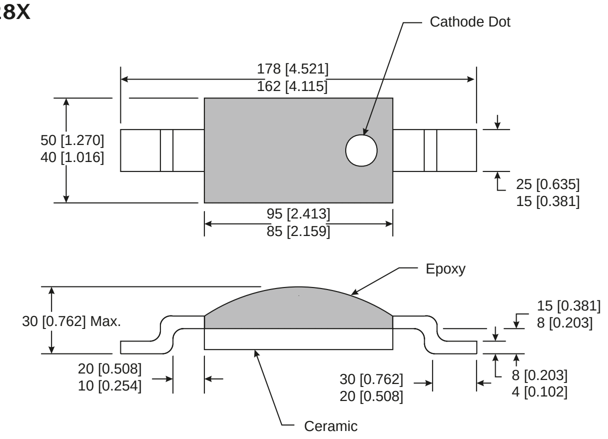
mils (mm)

E28



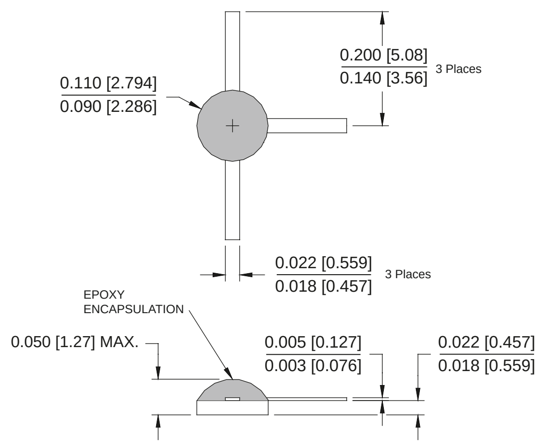
mils (mm)

E28X



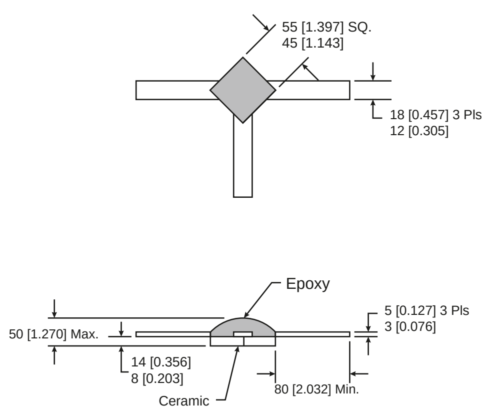
mils (mm)

E30



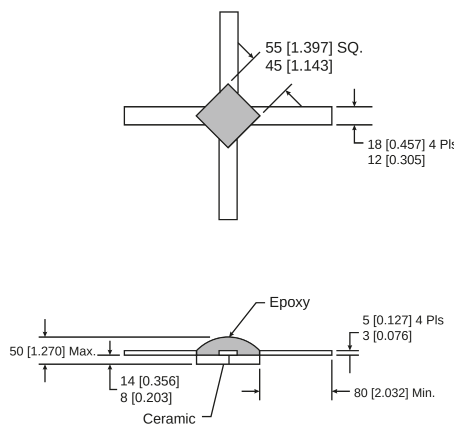
inches (mm)

E35



mils (mm)

E45

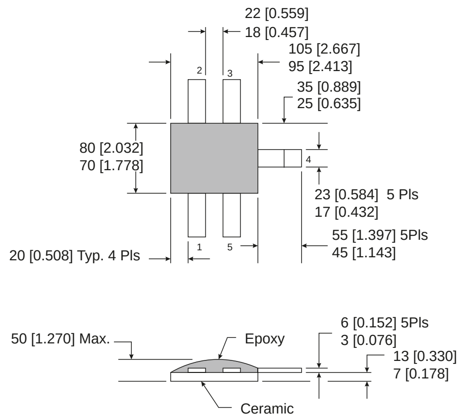


mils (mm)

Outline Drawings

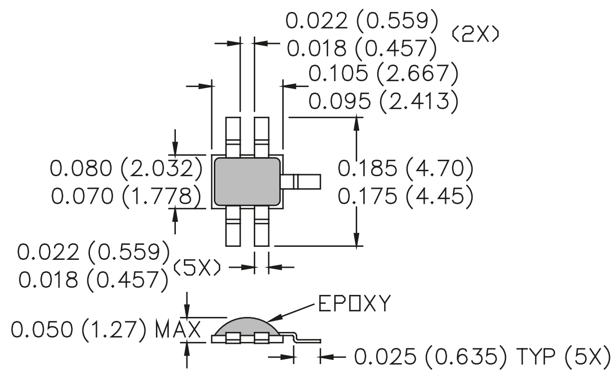
Epoxy

E50



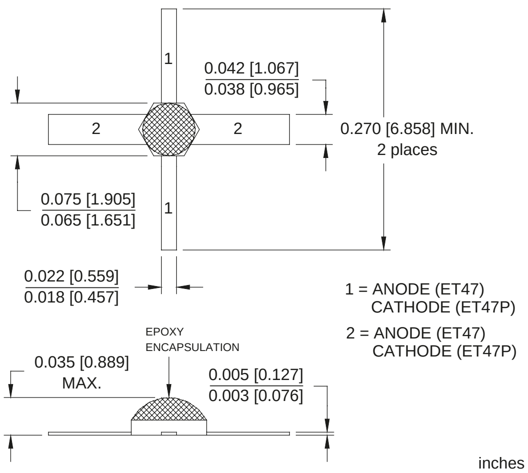
mils (mm)

E50SM



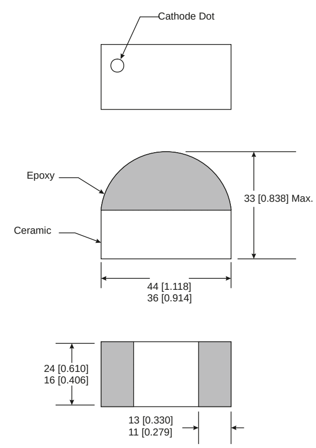
inches (mm)

ET47



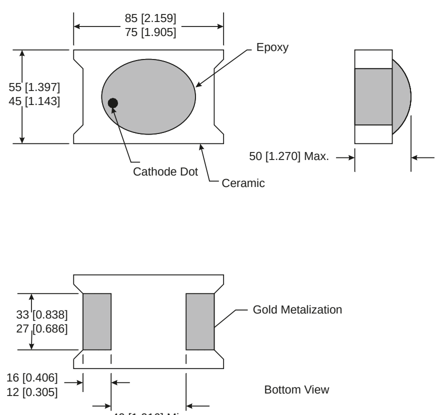
inches (mm)

0402



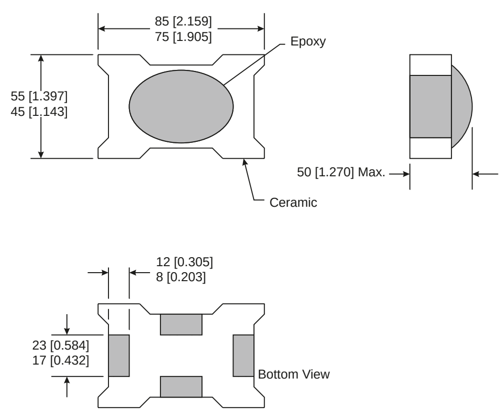
mils (mm)

0805-2



mils (mm)

0805-4

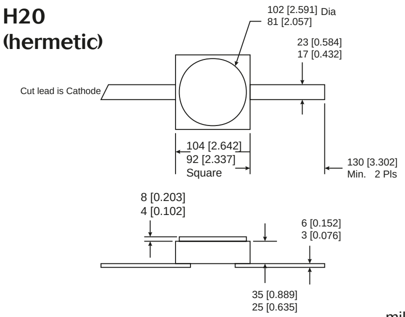


mils (mm)

Outline Drawings

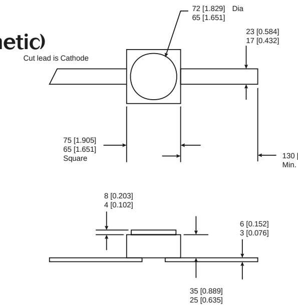
Hermatic

H20 (hermetic)



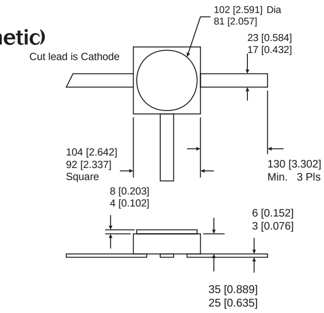
mils (mm)

H27 (hermetic)



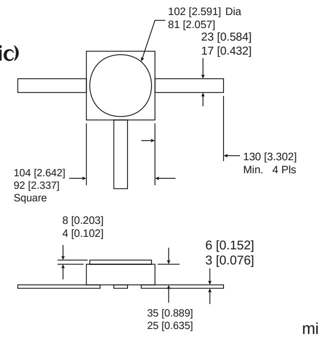
mils (mm)

H30 (hermetic)



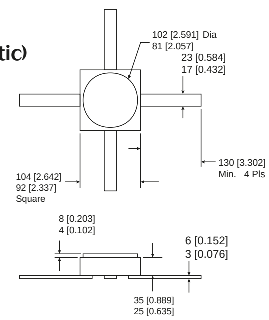
mils (mm)

H30X (hermetic)



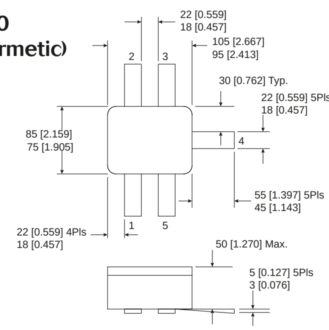
mils (mm)

H40 (hermetic)



mils (mm)

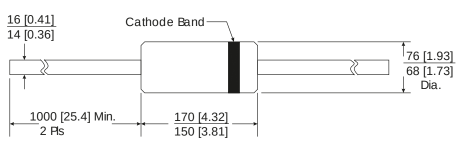
H50 (hermetic)



mils (mm)

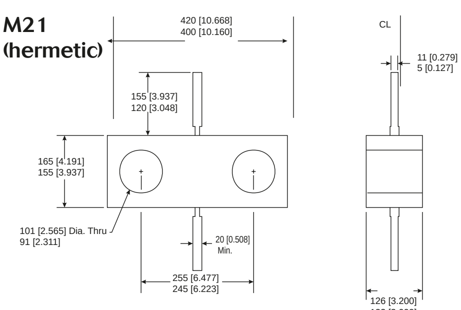
Misc

A15 (hermetic)



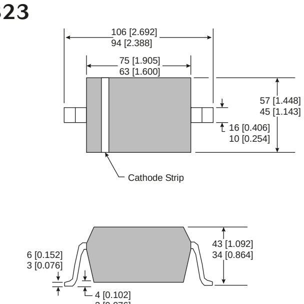
mils (mm)

M21 (hermetic)



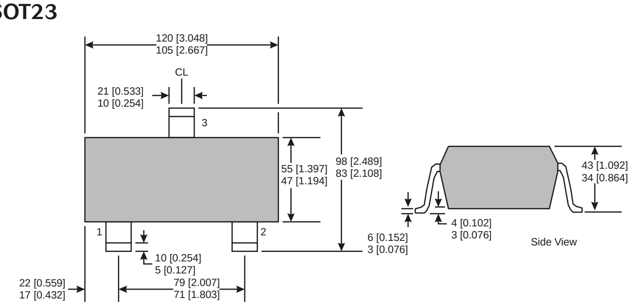
mils (mm)

SOD323



mils (mm)

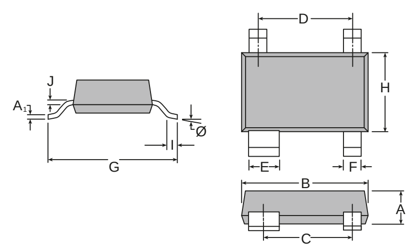
SOT23



mils (mm)

SOT143

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.79	1.02	0.031	0.040
A_1	0.02	0.10	0.001	0.004
B	2.67	3.05	0.105	0.120
C	1.78	2.03	0.070	0.080
D	1.80	2.00	0.071	0.079
E	0.77	0.94	0.030	0.037
F	0.38	0.54	0.015	0.021
G	2.10	2.50	0.083	0.098
H	1.20	1.40	0.047	0.065
I	0.13	0.25	0.005	0.010
J	0.89	0.15	0.0035	0.0059
Ø	0.0	8.0	0.0	0.8



Index

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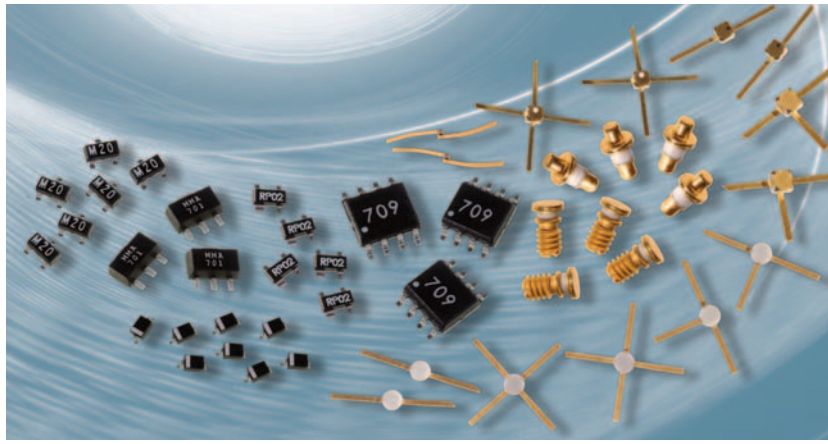

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