

### Features

- Very Low 1/f Noise
- Detector Applications up to 40 GHz
- Chip Beam Lead and Packaged Devices

### Description

The MSS20-xxx-x Series of Schottky diodes is fabricated on P-Type epitaxial substrates for superior 1/f noise performance in microwave 0-bias detector applications up to 40 GHz.



### Chip

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

Model	$C_J$ Max. pF	$T_{SS}$ Typ. dBm	$R_V$ Min. $\Omega$	$R_V$ Max. $\Omega$	$\gamma$ Typ. mV / mW	Frequency Max. GHz	Outline
MSS20-046-C15	0.10	-58	1000	2000	5000	18	C15
MSS20-047-C15	0.10	-59	2000	6000	8000	18	C15
MSS20-050-C15	0.15	-58	1000	2000	5000	12	C15
MSS20-051-C15	0.15	-59	2000	6000	8000	12	C15
MSS20-054-C15	0.20	-58	1000	2000	5000	8	C15
MSS20-055-C15	0.20	-59	2000	6000	8000	8	C15
Test Conditions	$f = 1 \text{ MHz}$ , $V_R = 0 \text{ V}$	$f = 10 \text{ GHz}$ , NF = 3 dB	$P_{IN} = -30 \text{ dBm}$ Video BW = 500 KHz		$R_L = 1 \text{ M}\Omega$		

### Beam Lead

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

Model	$C_J$ Max. pF	$T_{SS}$ Typ. dBm	$R_V$ Min. $\Omega$	$R_V$ Max. $\Omega$	$\gamma$ Typ. mV / mW	Frequency Max. GHz	Outline
MSS20-140-B10D	0.08	-58	1000	2000	5000	40	B10D
MSS20-141-B10D	0.08	-59	2000	6000	8000	40	B10D
MSS20-142-B10D	0.10	-58	1000	2000	5000	26	B10D
MSS20-143-B10D	0.10	-59	2000	6000	8000	26	B10D
MSS20-145-B10D	0.12	-58	1000	2000	5000	18	B10D
MSS20-146-B10D	0.12	-59	2000	6000	8000	18	B10D
Test Conditions	$f = 1 \text{ MHz}$ , $V_R = 0 \text{ V}$	$f = 10 \text{ GHz}$ , NF = 3 dB	$P_{IN} = -30 \text{ dBm}$ Video BW = 500 KHz		$R_L = 1 \text{ M}\Omega$		

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### Packaged

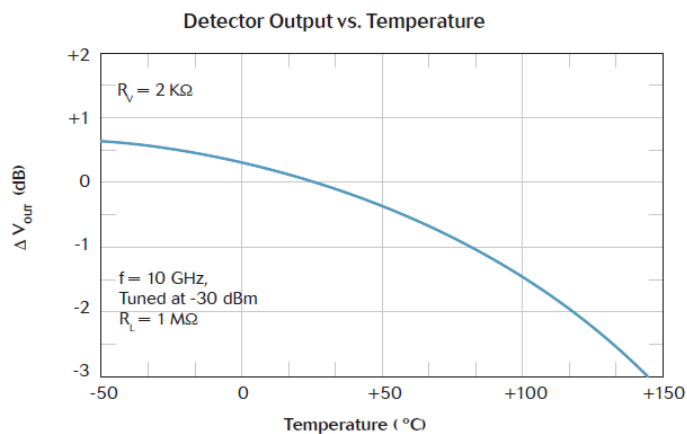
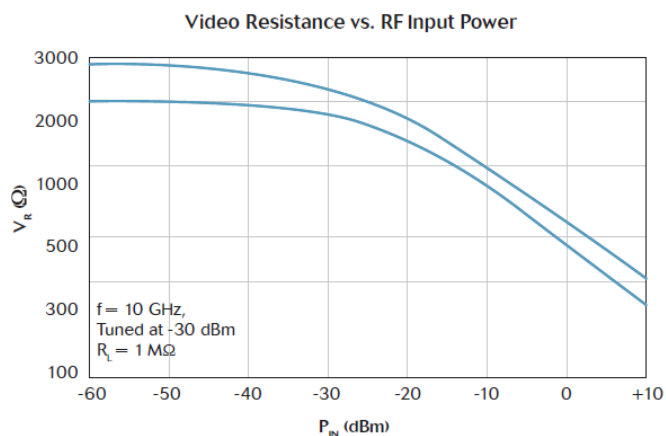
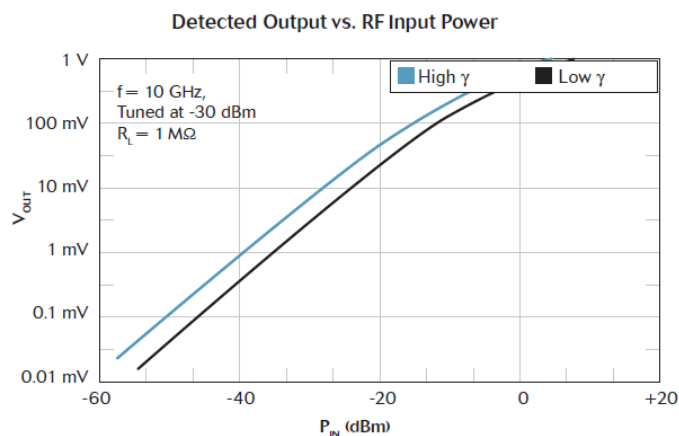
### Electrical Specifications: $T_A = 25^\circ\text{C}$

Model	$C_J$ Max. pF	$T_{SS}$ Typ. dBm	$R_V$ Min. $\Omega$	$R_V$ Max. $\Omega$	$\gamma$ Typ. mV / mW	Frequency Max. GHz	Outline
MSS20-046-H27	0.22	-58	1000	2000	5000	18	H27
MSS20-046-E25	0.18	-58	1000	2000	5000	18	E25
MSS20-046-T86	0.28	-58	1000	2000	5000	18	T86
MSS20-047-H27	0.22	-59	2000	6000	8000	18	H27
MSS20-047-E25	0.18	-59	2000	6000	8000	18	E25
MSS20-047-T86	0.28	-59	2000	6000	8000	18	T86
MSS20-050-H27	0.27	-58	1000	2000	5000	12	H27
MSS20-050-E25	0.23	-58	1000	2000	5000	12	E25
MSS20-050-T86	0.33	-58	1000	2000	5000	12	T86
MSS20-051-H27	0.27	-59	2000	6000	8000	12	H27
MSS20-051-E25	0.23	-59	2000	6000	8000	12	E25
MSS20-051-T86	0.33	-59	2000	6000	8000	12	T86
MSS20-054-H27	0.32	-58	1000	2000	5000	8	H27
MSS20-054-E25	0.28	-58	1000	2000	5000	8	E25
MSS20-054-T86	0.38	-58	1000	2000	5000	8	T86
MSS20-055-H27	0.32	-59	2000	6000	8000	8	H27
MSS20-055-E25	0.28	-59	2000	6000	8000	8	E25
MSS20-055-T86	0.38	-59	2000	6000	8000	8	T86
Test Conditions	$f = 1 \text{ MHz}$ , $V_R = 0 \text{ V}$	$f = 10 \text{ GHz}$ , $NF = 3 \text{ dB}$	$P_{IN} = -30 \text{ dBm}$ Video BW = 500 KHz		$R_L = 1 \text{ M}\Omega$		

### Absolute Maximum Ratings

Parameters	Rating
Reverse Voltage	1 V
Forward Current	35 mA
CW Power Dissipation	100 mW, derated linearly to 0 @ $T_A = +150^\circ\text{C}$
Operating Temperature	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Storage Temperature	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Soldering Temperature (packaged)	$+230^\circ\text{C}$ for 5 seconds

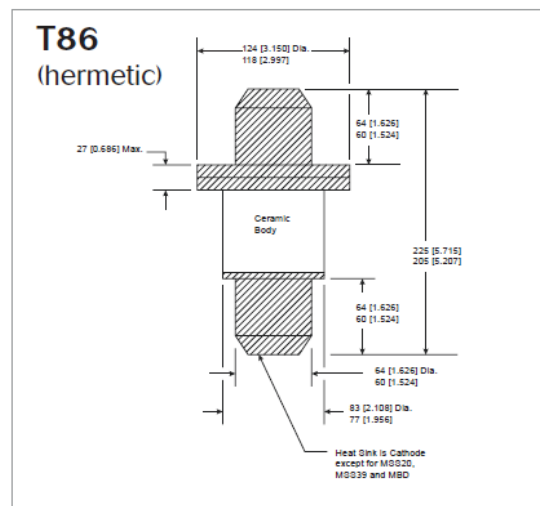
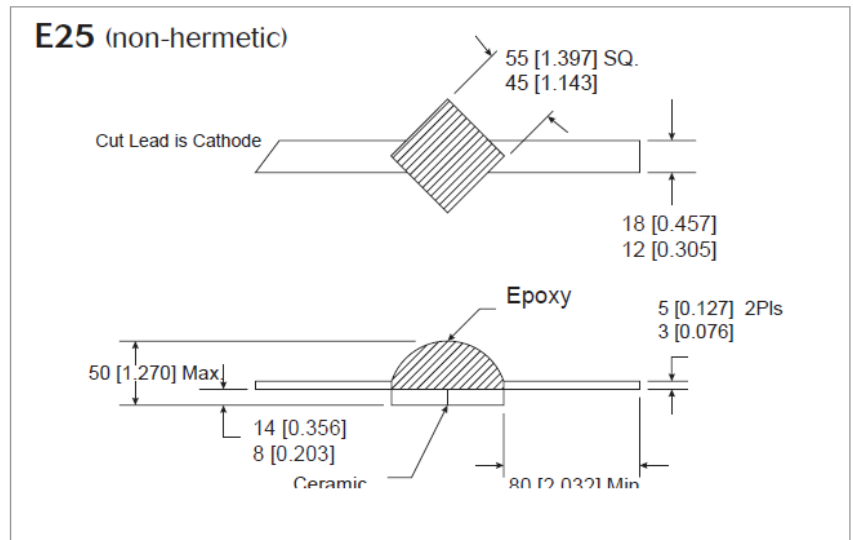
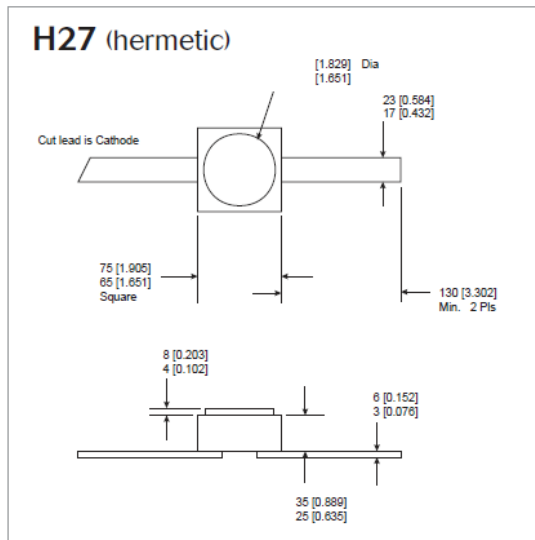
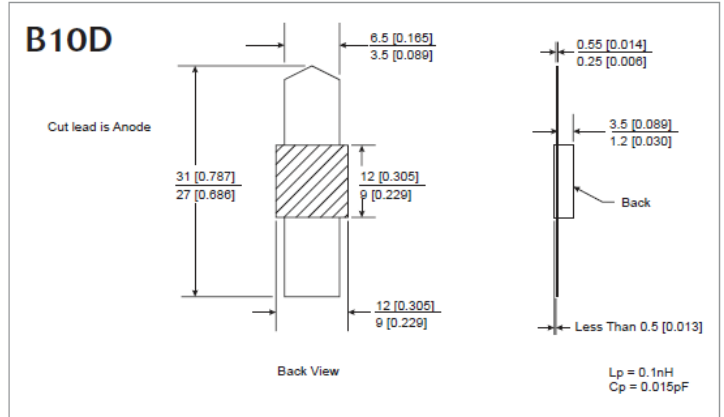
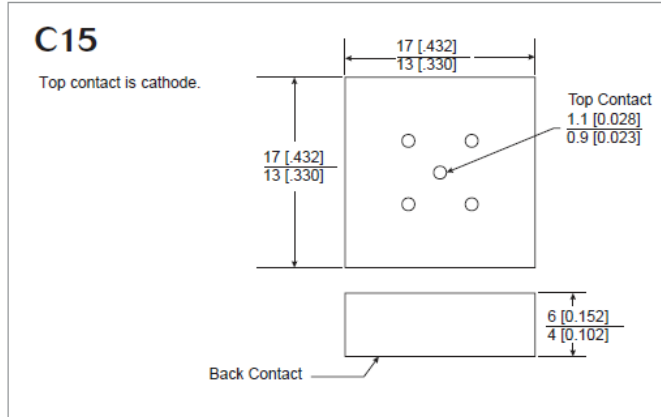
### Typical Performance Curves: $T_A = 25^\circ\text{C}$



## Zero Bias Schottky Diodes

Rev. V2

### Outline Drawings



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