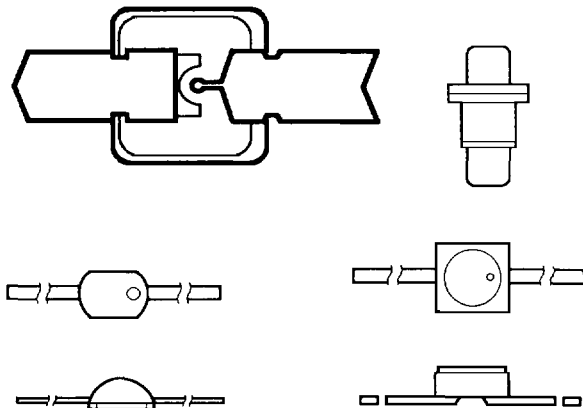


MSS 20,000 SERIES ZERO BIAS SCHOTTKY DETECTOR DIODES



FEATURES

- No DC Bias Required
- Low I/F Noise
- Detectors to 40 GHz
- Packages, Chips, or Beam Leads Available



MAXIMUM RATINGS

Operating Temperature -65°C to +150°C
 Storage Temperature -65°C to +150°C
 CW Power Dissipation 100 mW
 (derated to zero at +150°C)
 Soldering Temperature +230°C for 5 sec.

CHIP & PACKAGE: ELECTRICAL SPECIFICATIONS AT 25°C

Model-Case Style*	Ct (pF) MAX	Tangential Sensitivity T _{ss} (dBm) TYP	Video Impedance R _v (Ohms) MIN - MAX	Sensitivity γ (mV/mW) TYP	Operating Frequency (GHz) MAX
MSS20, 046-C15	0.10	-58	1000 - 2000	5000	18
MSS20, 046-H27	0.22	-58	1000 - 2000	5000	18
MSS20, 046-E26	0.18	-58	1000 - 2000	5000	18
MSS20, 046-T86	0.28	-58	1000 - 2000	5000	18
MSS20, 047-C15	0.10	-59	2000 - 6000	8000	18
MSS20, 047-H27	0.22	-59	2000 - 6000	8000	18
MSS20, 047-E26	0.18	-59	2000 - 6000	8000	18
MSS20, 047-T86	0.28	-59	2000 - 6000	8000	18
MSS20, 050-C15	0.15	-58	1000 - 2000	5000	12
MSS20, 050-H27	0.27	-58	1000 - 2000	5000	12
MSS20, 050-E26	0.23	-58	1000 - 2000	5000	12
MSS20, 050-T86	0.33	-58	1000 - 2000	5000	12
MSS20, 051-C15	0.15	-59	2000 - 6000	8000	12
MSS20, 051-H27	0.27	-59	2000 - 6000	8000	12
MSS20, 051-E26	0.23	-59	2000 - 6000	8000	12
MSS20, 051-T86	0.33	-59	2000 - 6000	8000	12
MSS20, 054-C15	0.20	-58	1000 - 2000	5000	8
MSS20, 054-H27	0.32	-58	1000 - 2000	5000	8
MSS20, 054-E26	0.28	-58	1000 - 2000	5000	8
MSS20, 054-T86	0.38	-58	1000 - 2000	5000	8
MSS20, 055-C15	0.20	-59	2000 - 6000	8000	8
MSS20, 055-H27	0.32	-59	2000 - 6000	8000	8
MSS20, 055-E26	0.28	-59	2000 - 6000	8000	8
MSS20, 055-T86	0.38	-59	2000 - 6000	8000	8

Test Conditions f = 1 MHz f = 10 GHz P_{IN} = -30 dBm Video BW = 500 KHz RL = 1 Mohm
 V_R at G = 0s NF = 3 dB

*See Outline Drawings. Other Packages Available.

MTLXS029

DESCRIPTION

The Metelics MSS20, 000 Series zero bias Schottky detector diodes are P-Type with silicon oxide passivation. They are intended for use as zero-bias detector devices from 0.1 GHz to as high as 40 GHz. Packages are available for coax, waveguide,

microstrip, or hybrid usage.

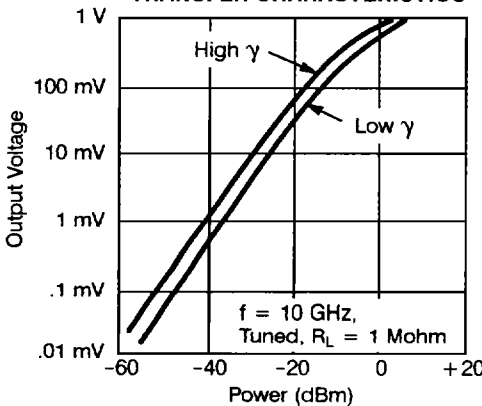
The beam-lead types are provided with short beams for low inductance and tuning nearer the junction.

BEAM LEAD DIODES: ELECTRICAL SPECIFICATIONS AT 25°C

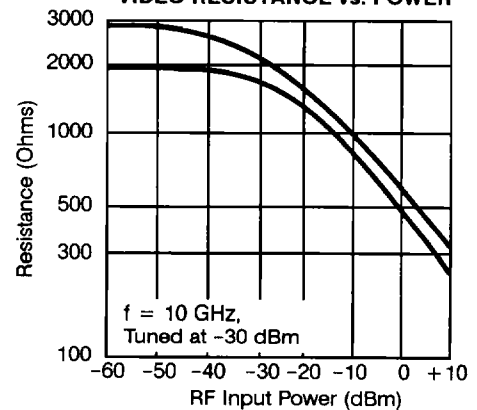
Model-Case Style	Ct (pF) MAX	Tangential Sensitivity Tss (dBm) TYP	Video Impedance Rv (Ohms) MIN - MAX	Sensitivity γ (mV/mW) TYP	Operating Frequency (GHz) MAX
MSS20, 140-B10D	0.08	-58	1000 - 2000	5000	40
MSS20, 141-B10D	0.08	-59	2000 - 6000	8000	40
MSS20, 142-B10D	0.10	-58	1000 - 2000	5000	26
MSS20, 143-B10D	0.10	-59	2000 - 6000	8000	26
MSS20, 145-B10D	0.12	-58	1000 - 2000	5000	18
MSS20, 146-B10D	0.12	-59	2000 - 6000	8000	18

Test Conditions: $f = 1 \text{ MHz}$, $V_R \text{ at } G = 0s$; $f = 10 \text{ GHz}$, $NF = 3 \text{ dB}$; $P_{IN} = -30 \text{ dBm}$, $\text{Video BW} = 500 \text{ KHz}$; $RL = 1 \text{ Mohm}$

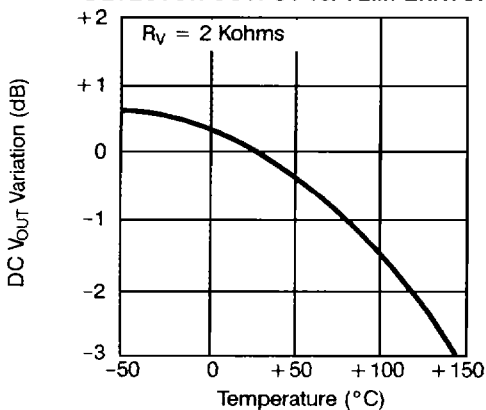
ZERO BIAS SCHOTTKY DETECTOR TRANSFER CHARACTERISTICS



ZERO BIAS SCHOTTKY DETECTOR VIDEO RESISTANCE vs. POWER

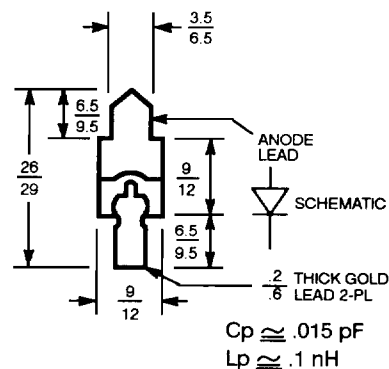


TYPICAL ZERO BIAS SCHOTTKY DETECTOR OUTPUT vs. TEMPERATURE

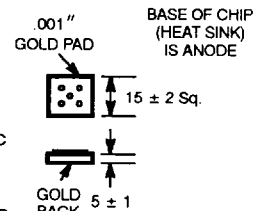


OUTLINE DRAWINGS

PACKAGE OUTLINE B10D



PACKAGE OUTLINE C15



Dimension in mils