

Features

- Designed for High Volume, Low Cost Detector Applications
- Available in Single and Series Pair Configurations
- Small Profile Surface Mount Packages
- Tape and Reel Deliverable
- RoHS* Compliant with 260°C Reflow Capability

Description and Applications

The MA4E2200 series are silicon zero bias P-type detector diodes assembled in low cost surface mount plastic packages. They are designed for usage in a wide variety of detector applications.

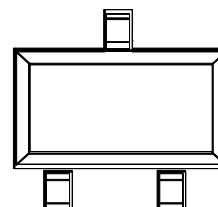
The MA4E2200 series of zero bias detector diodes are available in series pair configurations in the SOT-23 (case style 287) and are also available in a single configuration in the SOD-323 (case style 1141) and the SC-79 (1279).

The part number consists of the base number MA4E2200, followed by the wiring configuration (A, B, D), the package style (287, 1141) and a "T" for tape and reel. The SC-79 part number is MADS-002200-12790T.

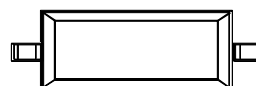
The small diode package size and moderate parasitics make these parts ideal for low leakage limiters and RF temperature compensated envelope detectors for RF ID tags applications up to 4 GHz.

Package Outlines

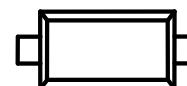
SOT-23 (287)



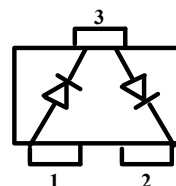
SOD-323 (1141)



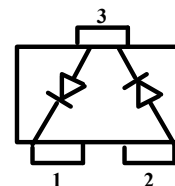
SC-79 (1279)



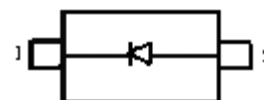
Configurations (Top View)



Series Pair
MA4E2200B1-287T



Reverse Series Pair
MA4E2200D1-287T



Single
MA4E2200A1-1141T
MADS-002200-12790T

Ordering Information

Part Number	Package Style
MA4E2200A1-1141T	SOD-323
MA4E2200B1-287T	SOT-23
MA4E2200D1-287T	SOT-23
MADS-002200-12790T	SC-79

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Electrical Specifications @ +25°C

Parameter	Condition	Specification
Reverse Voltage Breakdown (V_B)	$I_R = 100 \mu A$	1.5 V min.
Forward Voltage (V_F)	$I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$	60 - 120 mV max. 150 - 220 mV max.
Delta Forward Voltage (ΔV_F)	$I_F = 1 \text{ mA}$	10 mV max.
Total Capacitance (C_T)	$V_R = 0.15 \text{ V}$	0.25 pF typ.
Video Resistance (R_V)	—	7000 Ω typ.

Maximum Ratings @ 25°C (unless otherwise specified)^{1,2}

Parameter	Values
CW RF Incident Power	75 mW
Reverse Voltage	1.5 V
Junction Temperature	+175°C
Operating Temperature	-65°C to +125°C
Storage Temperature	-65°C to +150°C

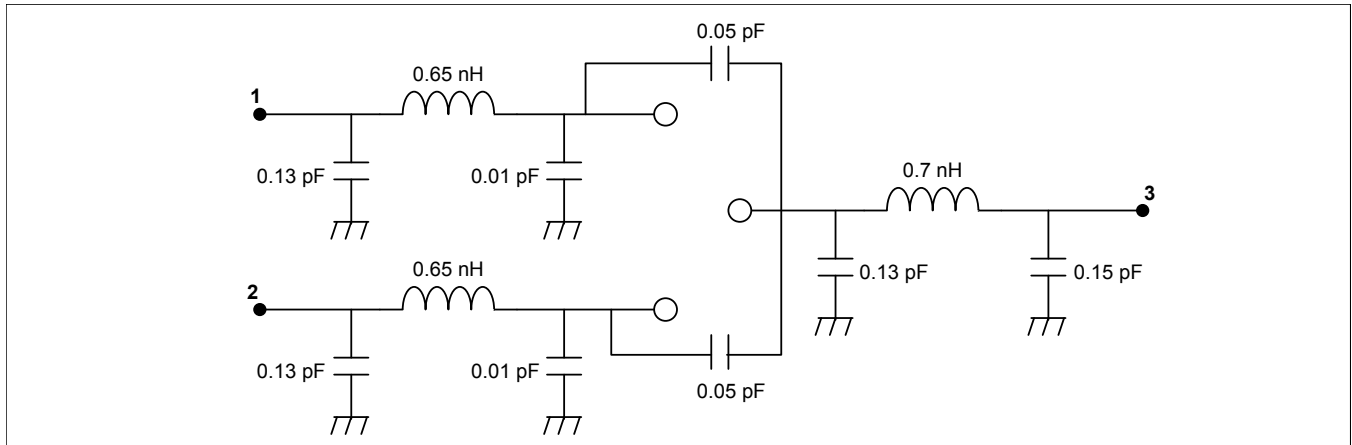
1. Operation of this device above any one of the Maximum Rated parameters may cause permanent damage.
2. Please refer to Application Note M538 for surface mounting instructions.

Surface Mount Zero Bias Schottky Diodes

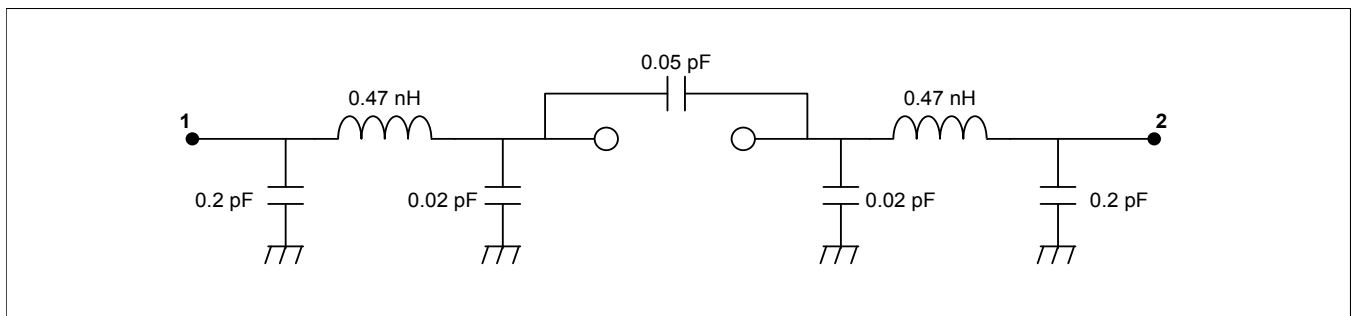
Rev. V8

Circuit Models

SOT-23

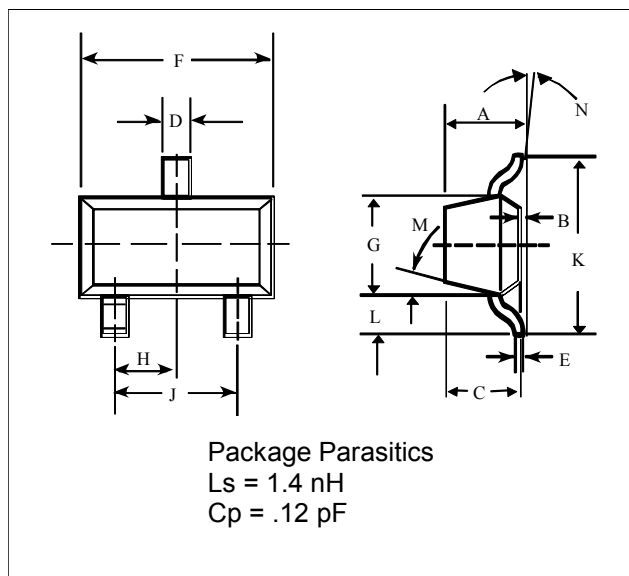


SOD-323



Case Styles

SOT-23

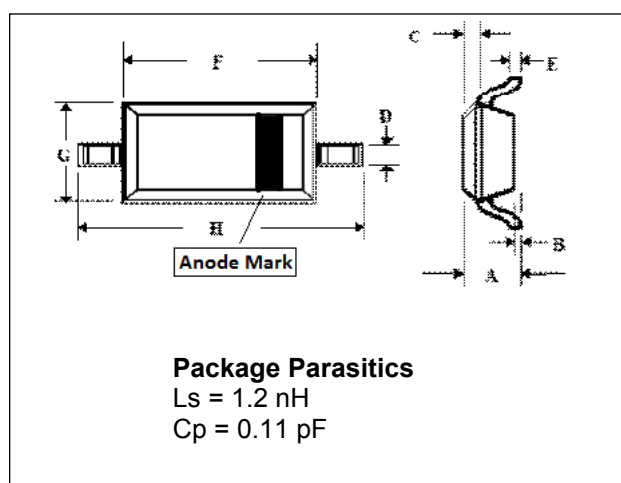


SOT-23 (Case Style 287)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	—	0.048	—	1.22
B	—	0.008	—	0.20
C	—	0.040	—	1.00
D	0.013	0.020	0.35	0.50
E	0.003	0.006	0.08	0.15
F	0.110	0.119	2.80	3.00
G	0.047	0.056	1.20	1.40
H	0.037 typical		0.95 typical	
J	0.075 typical		1.90 typical	
K	—	0.103	—	2.60
L	—	0.024	—	0.60
DIM.	GRADIENT			
M	10° max. ³			
N	2° . . .30°			

3. Applicable on all sides

SOD-323

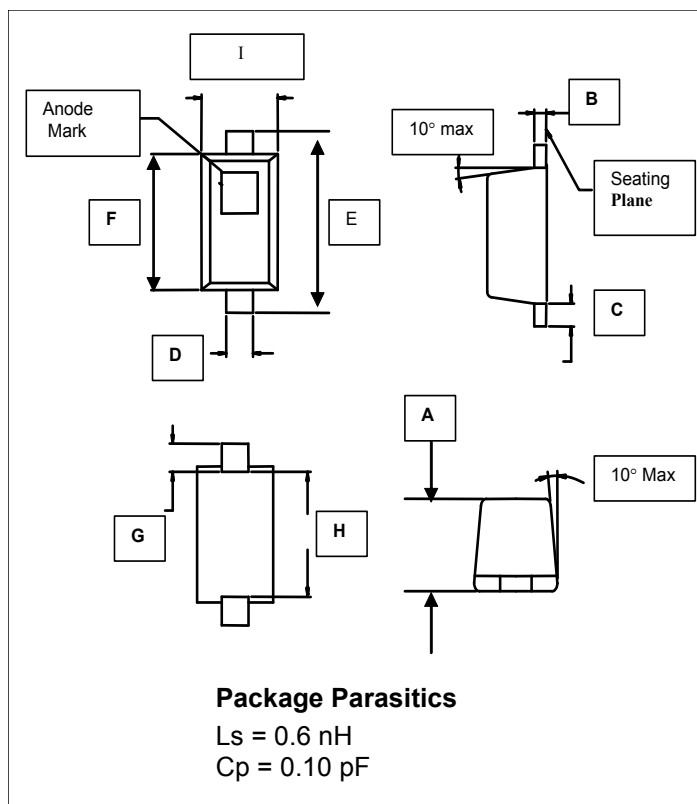


SOD-323 (Case Style 1141)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	—	0.043	—	1.1
B	—	0.004	—	0.1
C	—	0.008	—	0.2
D	0.010	0.016	0.25	0.4
E	0.003	0.006	0.08	0.15
F	0.063	0.075	1.6	1.9
G	0.045	0.057	1.15	1.45
H	0.091	0.106	2.3	2.7

Case Styles (Cont'd)

SC-79



SC-79 (Case Style 1279)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.020	0.028	0.50	0.71
B	0.003	0.008	0.08	0.20
C	0.006	0.010	0.15	0.25
D	0.010	0.014	0.25	0.36
E	0.059	0.067	0.08	0.15
F	0.043	0.051	1.10	1.30
G	0.011	0.012	0.28	0.30
H	0.037	0.043	0.94	1.09
I	0.027	0.035	0.68	0.96

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