

MA4E1340 Series



Silicon Medium Barrier Schottky Diodes

M/A-COM Products
Rev. V8

Features

- RF & Microwave Medium Barrier Silicon 70 V Schottky Diode
- Available as Single Diode, Series Pair or Unconnected Pair Configurations.
- Low Profile Surface Mount Plastic Package
- Lead Free (RoHS Compliant) Equivalents Available With 260 Deg. C Reflow Capability

Description and Applications

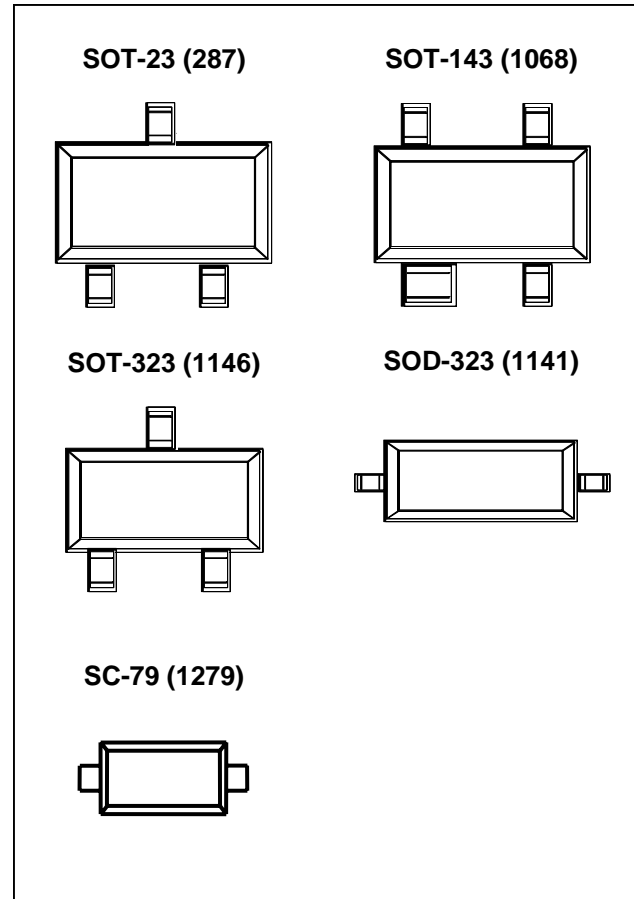
The MA4E1340 series is a silicon medium barrier schottky diode suitable for use in mixer, detector and limiter circuits. These diodes are also suitable for usage in anti-parallel, shunt power surge protection circuits for 50 Ω and 75 Ω systems.

These parts are offered with Sn/Pb plating, as well as with 100 % matte Sn plating on the RoHS compliant part numbers.

The MA4E1340 Series of Schottky diodes is available in the SOT-23 (case style 287), SOT-143 (case style 1068), SOT-323 (case style 1146) and the SOD 323, (case style 1141) plastic package. These packages are supplied on tape and reel for automatic pick and place assembly and for surface mount placement to circuit boards, as indicated by a "T" to the P/N suffix.

These Silicon Medium Barrier, 70 V Schottky Diodes are Useful in Detector, Limiter, Mixer, and Surge Protection Applications for Operating Frequency Bands from DC through 6 GHz.

Package Outlines



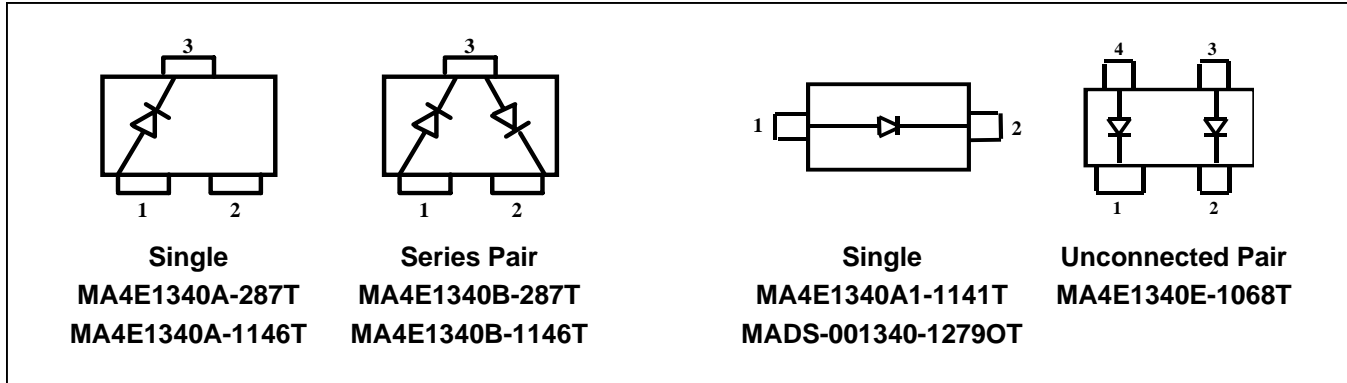
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Configurations (Top View)



Standard Part Numbers and RoHS Equivalentents

Standard Part Number	RoHS Compliant Part Number	Package Style
MA4E1340A-287T	MA4E1340A1-287T	SOT-23
MA4E1340A-1146T	MA4E1340A1-1146T	SOT-323
MA4E1340B-287T	MA4E1340B1-287T	SOT-23
MA4E1340B-1146T	MA4E1340B1-1146T	SOT-323
N/A	MA4E1340A1-1141T	SOD-323
N/A	MADS-001340-12790T	SC-79
MA4E1340E-1068T	MA4E1340E1-1068T	SOT-143

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Maximum Ratings @ 25 °C (unless otherwise specified) ¹

Parameter	Unit	Values
Operating Temperature	°C	-55 to +125
Storage Temperature	°C	-55 to +125
Total Power Dissipation (RF and D.C.)	mW	250
Continuous Forward Current	mA	15
Surge Forward Current, @ t < 10 millisecc	mA	100
Reverse Voltage	Vb	70
Soldering Temperature (Standard Part #)	°C	+235
Soldering Temperature (RoHS Compliant Part #)	°C	+260

1. Please refer to Application Note M538 for surface mounting instructions

Electrical Specifications @ T_A = +25 °C

Parameter	Condition	Symbol	Specification
Forward Voltage	I _F = 1 mA	V _F	410 mV max.
Delta Forward Voltage	I _F = 1 mA	Δ V _F	20 mV max. For series pair and unconnected pair configurations
Forward Voltage	I _F = 15 mA	V _F	1.0 V max.
Total Capacitance	V _R = 0 V F = 1 MHz	C _T	1.5 pF max.
Reverse Leakage Current	V _R = 50 V	I _R	200 nA max.
Reverse Voltage Breakdown	I _R = 10 μA	Vb	70 V min.

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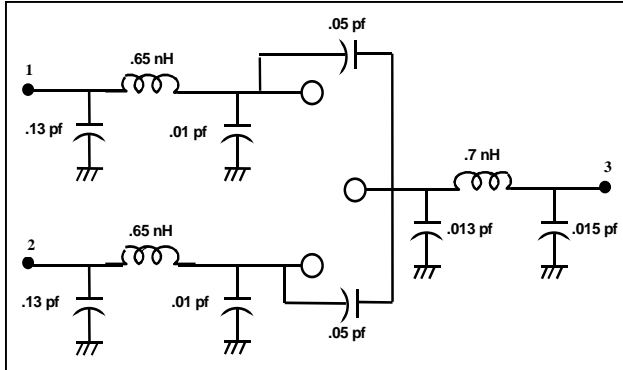
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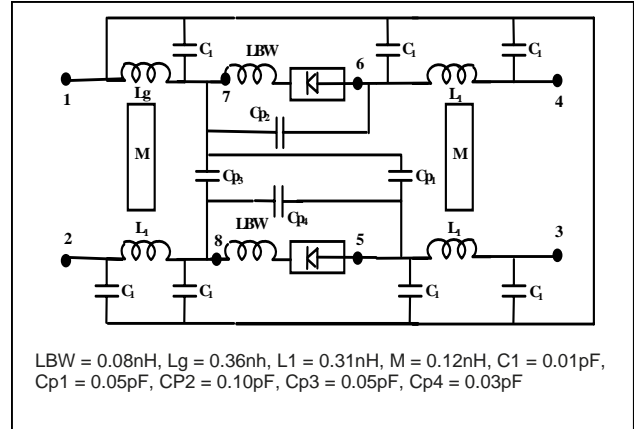
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Circuit Models

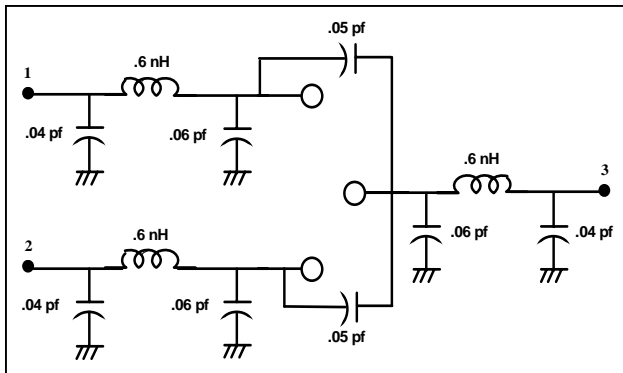
SOT-23



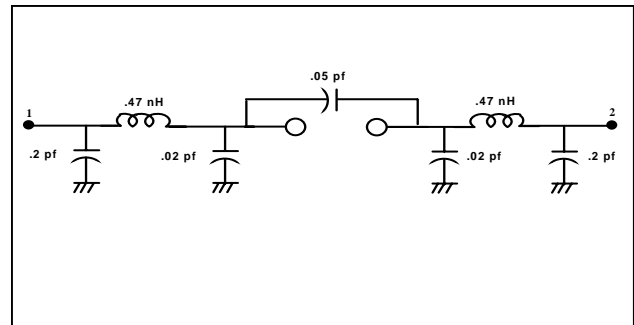
SOT-143



SOT-323

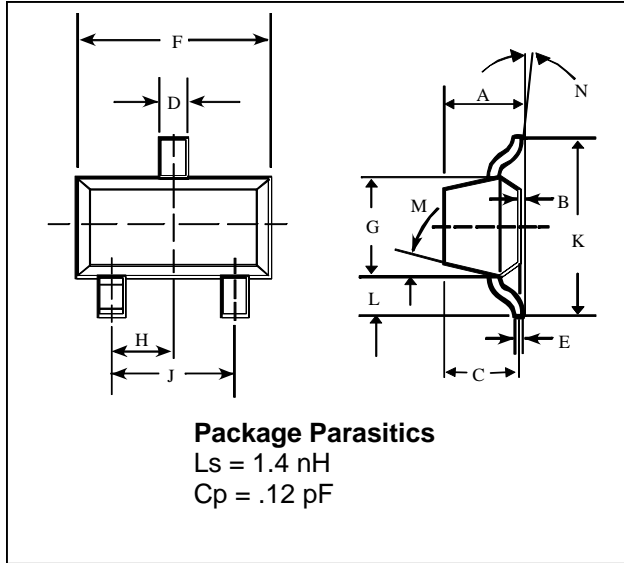


SOD-323



Case Styles

SOT-23

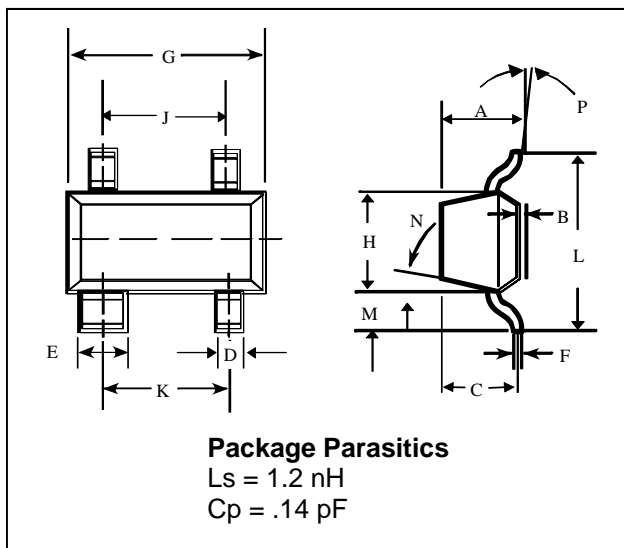


SOT-23 (Case Style 287)

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. ²			
N	2° . . . 30°			

2. Applicable on all sides

SOT-143



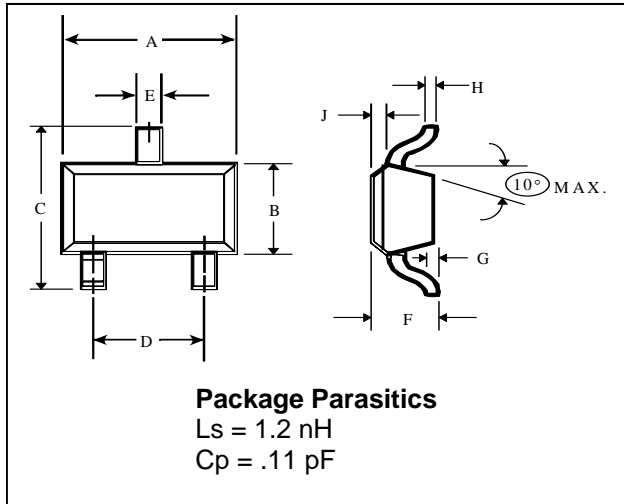
SOT-143 (Case Style 1068)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	–	0.044	–	1.10
B	–	0.004	–	0.10
C	–	0.040	–	1.00
D	0.013	0.020	0.35	0.50
E	0.030	0.035	0.75	0.90
F	0.003	0.006	0.08	0.15
G	0.110	0.119	2.80	3.00
H	0.047	0.056	1.20	1.40
J	0.075 typical		1.90 typical	
K	0.075 typical		1.90 typical	
L	–	0.103	–	2.6
M	–	0.024	–	0.6
DIM.	GRADIENT			
N	10° max. ³			
P	2° . . . 30°			

3. Applicable on all sides

Case Styles (Cont'd)

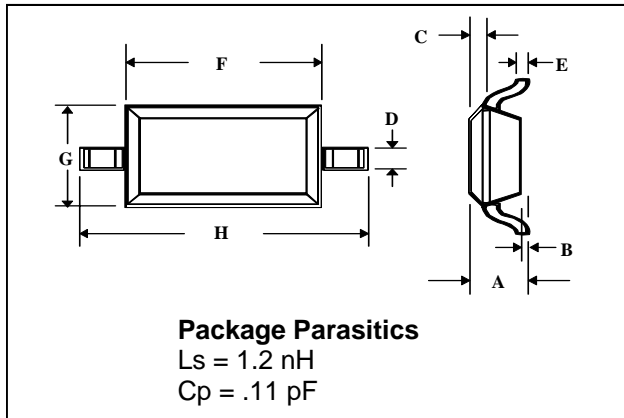
SOT-323



SOT-323 (Case Style 1146)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.063	0.087	1.6	2.2
B	0.045	0.053	1.15	1.35
C	0.079	0.087	2.0	2.2
D	0.047	0.055	1.2	1.4
E	0.008	0.016	0.2	0.4
F	0.031	0.039	0.8	1.0
G	-	0.004	-	0.1
H	0.003	0.006	0.08	0.15
J	0.004	0.010	0.1	0.25

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

MA4E1340 Series

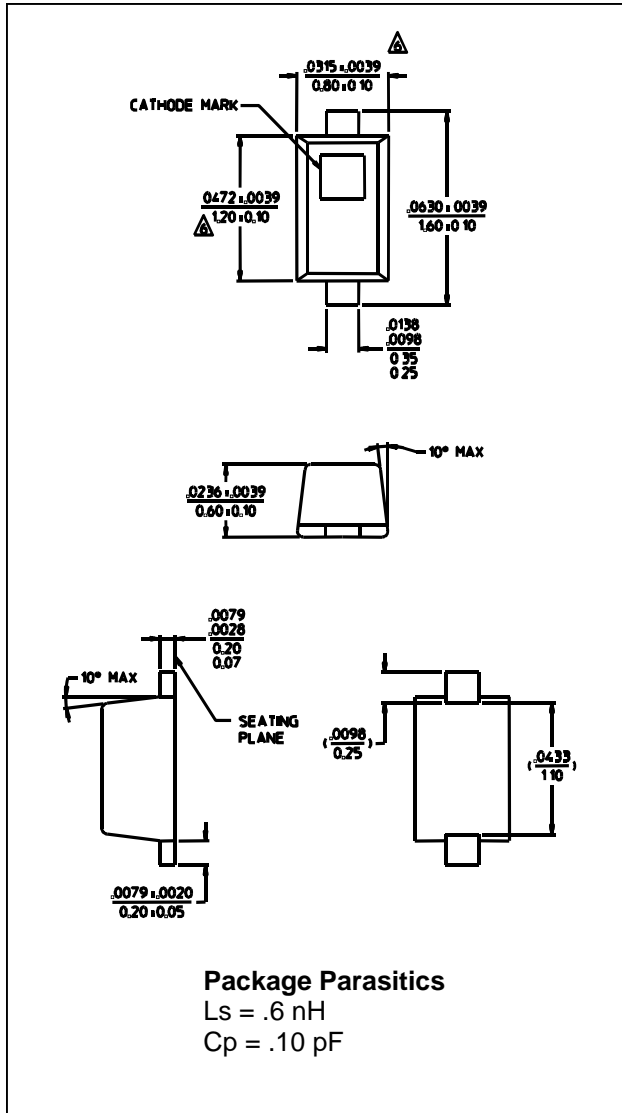


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Case Styles (Cont'd)

ODS-1279



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