

# Silicon Medium Barrier Schottky Diode

## MA4E1340 Series

### 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 Packages

### Description

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  $\Omega$  and 75  $\Omega$  systems.

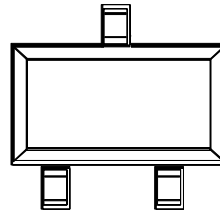
The MA4E1340 Series of Schottky diodes is available in the SOT-23 ( case style 287 ), SOT-143 ( case style 1068 ), SOT-323 ( case style 1146 ) and the SOD 323, ( case style 1141 ) plastic package. These packages are supplied on tape and reel for automatic pick and place assembly and for surface mount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

### Applications

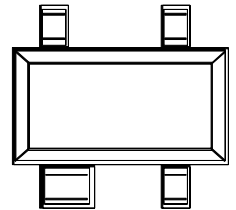
These Silicon Medium Barrier, 70 V Schottky Diodes are Useful in Detector, Limiter, Mixer, and Surge Protection Applications for Operating Frequency Bands from DC through 6 GHz.

### Package Outlines

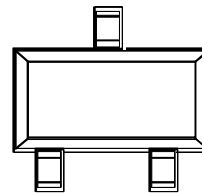
SOT-23 (287)



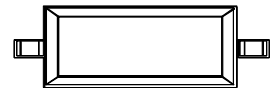
SOT-143 (1068)



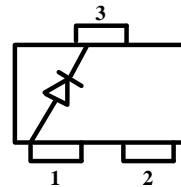
SOT-323 (1146)



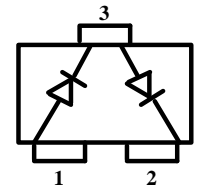
SOD-323 (1141)



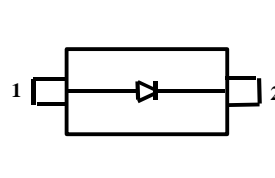
### Configurations — Top View



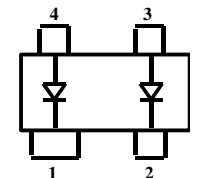
Single  
MA4E1340A-287T  
MA4E1340A-1146T



Series Pair  
MA4E1340B-287T  
MA4E1340B-1146T



Single  
MA4E1340-1141T



Unconnected Pair  
MA4E1340E-1068T

## Absolute Maximum Ratings

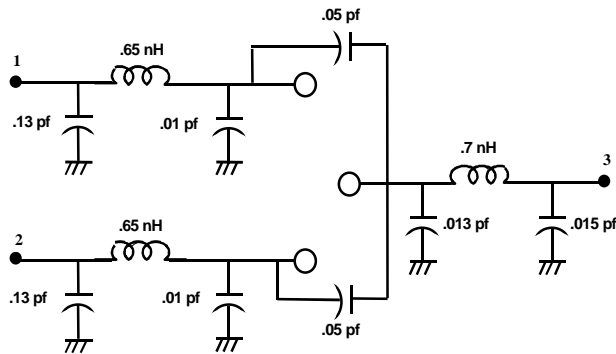
Parameter	Unit	Values
Operating Temperature	°C	-55 to +125
Storage Temperature	°C	-55 to +125
Total Power Dissipation (Tc = 25 °C)	mW	250
Continuous Forward Current	mA	15
Surge Forward Current, @ t < 10 ms	mA	100
Reverse Voltage	V	70

## Electrical Specifications @ T<sub>A</sub> = +25 °C

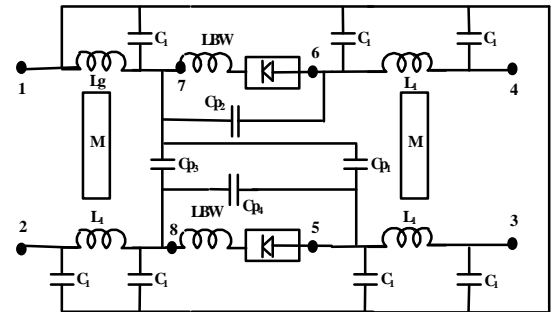
Parameter	Condition	Symbol	Specification
Forward Voltage	I <sub>F</sub> = 1 mA	V <sub>F</sub>	410 mV max.
Delta Forward Voltage	I <sub>F</sub> = 1 mA	Δ V <sub>F</sub>	20 mV max. (for series pair and unconnected pair configurations)
Forward Voltage	I <sub>F</sub> = 15 mA	V <sub>F</sub>	1.0 V max.
Total Capacitance	V <sub>R</sub> = 0 V and f = 1 MHz	C <sub>T</sub>	2.0 pF max.
Reverse Leakage Current	V <sub>R</sub> = 50 V	I <sub>R</sub>	200 nA max.
Reverse Voltage Breakdown	I <sub>R</sub> = 10 μA	V <sub>b</sub>	70 V min.

Circuit Models

SOT-23

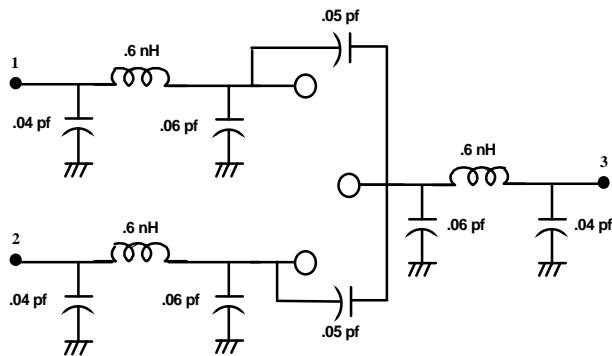


SOT-143

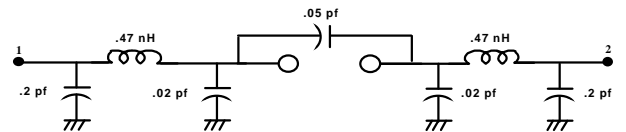


LBW = 0.08nH,  $L_g$  = 0.36nH,  $L_i$  = 0.31nH,  $M$  = 0.12nH,  $C_1$  = 0.01pF,  $C_{p1}$  = 0.05pF,  $C_{p2}$  = 0.10pF,  $C_{p3}$  = 0.05pF,  $C_{p4}$  = 0.03pF

SOT-323

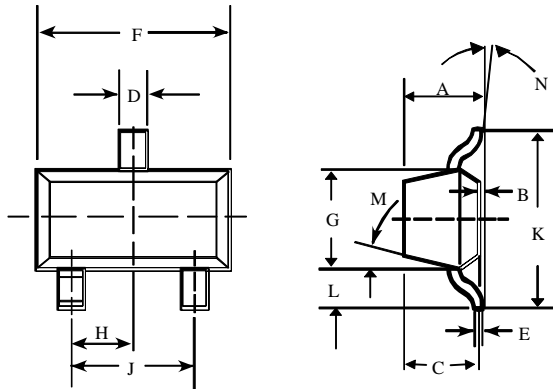


SOD-323



Case Styles

SOT-23

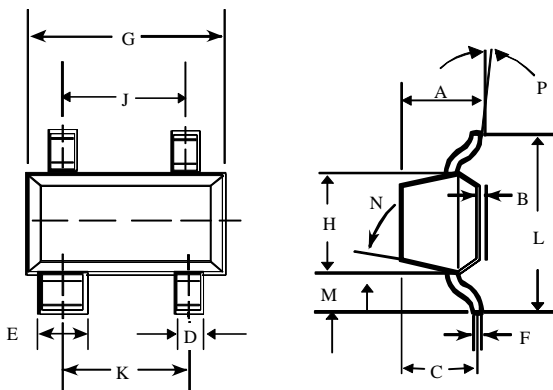


SOT-23 (Case Style 287)

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. <sup>1</sup>			
N	2° . . . 30°			

Note: 1. Applicable on all sides

SOT-143



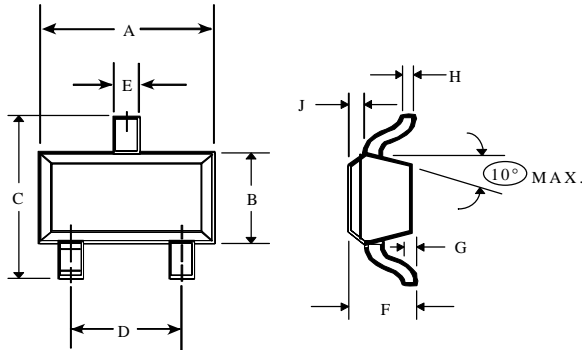
SOT-143 (Case Style 1068)

DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	-	0.044	-	1.10
B	-	0.044	-	1.10
C	-	0.040	-	1.00
D	0.030	0.035	0.75	0.90
E	0.013	0.020	0.35	0.50
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. <sup>1</sup>			
P	2° . . . 30°			

Note: 1. Applicable on all sides

Case Styles (Cont'd)

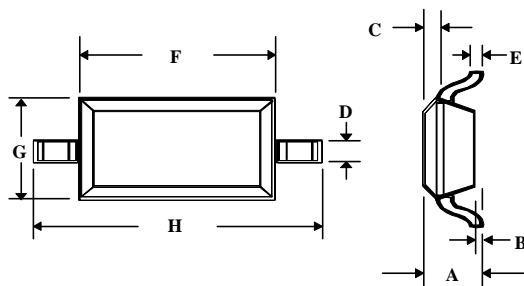
SOT-323



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