

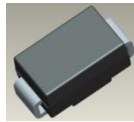
Features

- Glass Passivated Die Construction for High Reliability
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The S1MHQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

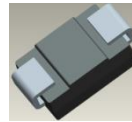
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SMA
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead-Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 ③
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.064 grams (Approximate)



Top View



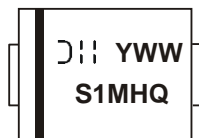
Bottom View

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
S1MHQ-13	SMA	5000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



S1MHQ = Product Type Marking Code
 D = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 4 for 2024)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _R RM	1000	V
Working Peak Reverse Voltage	V _R WM		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	700	V
Average Rectified Output Current @ T _T = +100°C	I _O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	30	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 5)	R _{θJT}	30	°C/W
Typical Thermal Resistance, Junction to Case	R _{θJC}	27	°C/W
Typical Thermal Resistance, Junction to Air	R _{θJA}	75	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit
Forward Voltage @ I _F = 1.0A	V _{FM}	—	—	1.1	V
Peak Reverse Leakage Current at Rated DC Blocking Voltage @ T _A = +25°C @ T _A = +125°C	I _{RM}	—	—	5.0 100	μA
Reverse-Recovery Time (Note 6)	t _{rr}	—	1.8	3.0	μs
Typical Total Capacitance (Note 7)	C _T	—	10	—	pF

Notes: 5. Thermal resistance junction to terminal, unit mounted on PC board with 5.0mm² (0.013mm thick) copper pads as heat sink.
6. Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

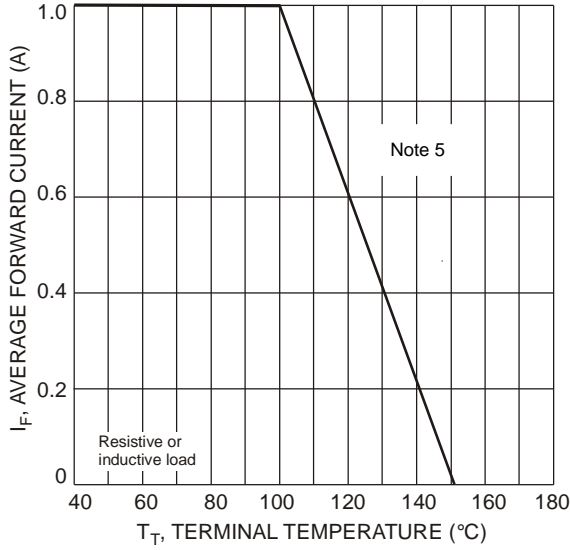


Figure 1. Forward Current Derating Curve

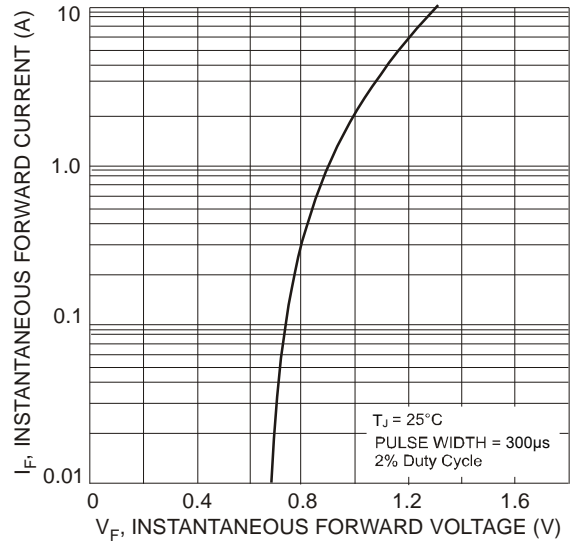


Figure 2. Typical Forward Characteristics

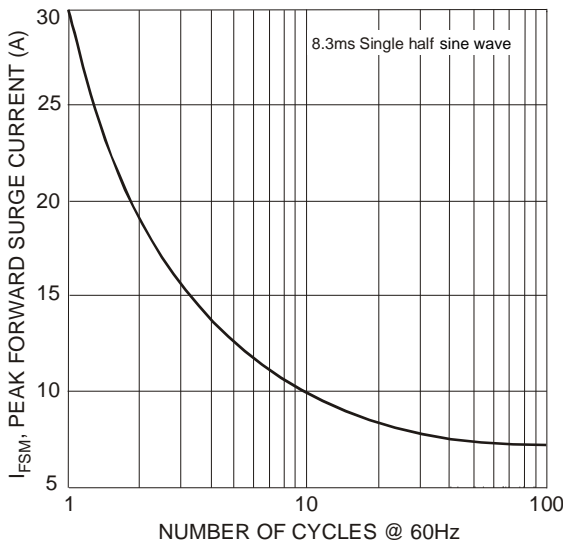


Figure 3. Typical Forward Characteristics

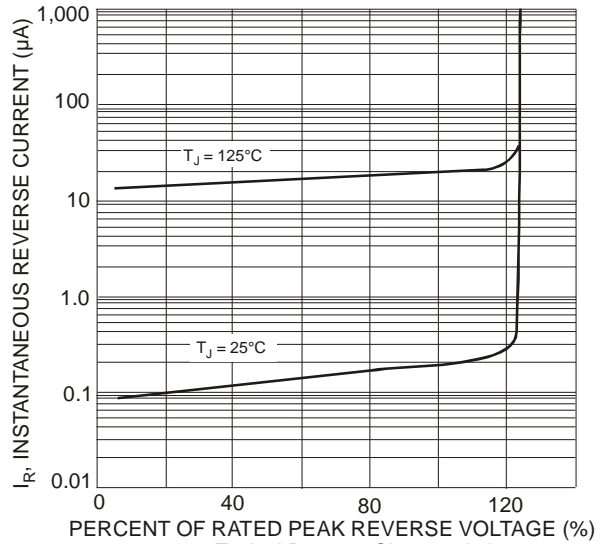


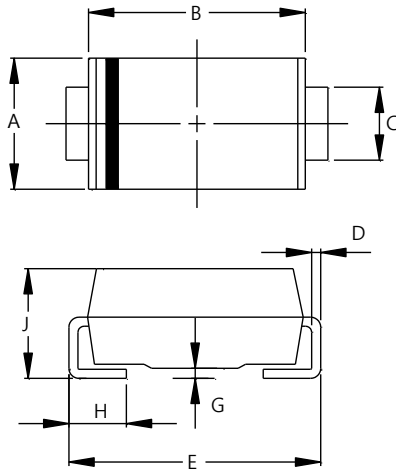
Figure 4. Typical Reverse Characteristics

Note: 5. Thermal resistance junction to terminal, unit mounted on PC board with 5.0mm² (0.013mm thick) copper pads as heat sink.

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMA

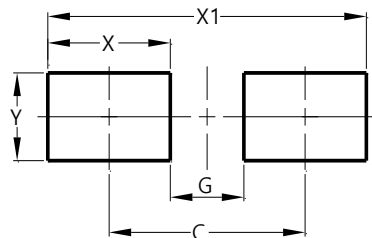


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version

SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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