

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)	t _{RR} (ns)
1000	1	1.7	5	75

Features

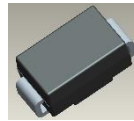
- Glass Passivated Die Construction
- Ultra-Fast Recovery Time for High Efficiency
- Surge Overload Rating to 30A Peak
- High Current Capability
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The US1MQ 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/>

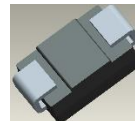
Mechanical Data

- 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 
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.064 grams (Approximate)

SMA



Top View



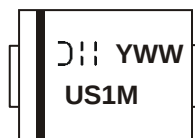
Bottom View

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
US1MQ-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



US1M = Product Type Marking Code
 311 = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 5 for 2025)
 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 Working Peak Reverse Voltage DC Blocking Voltage (Note 5)	V _{RRM} V _{RWM} V _R	1000	V
RMS Reverse Voltage	V _{R(RMS)}	700	V
Average Rectified Output Current @ T _T = +75°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
Maximum Thermal Resistance, Junction to Terminal	R _{θJT}	30	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

Characteristic	Symbol	Value	Unit	Test condition
Forward Voltage Drop	V _F	1.7	V	I _F = 1.0A
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	I _R	5.0 100	μA	V _R = 1000V, T _J = +25°C V _R = 1000V, T _J = +100°C
Reverse-Recovery Time	t _{RR}	75	ns	I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A
Typical Total Capacitance	C _T	8	pF	V _R = 4.0V _{DC} , f = 1MHz

Note: 5. Short duration pulse test used to minimize self-heating effect.

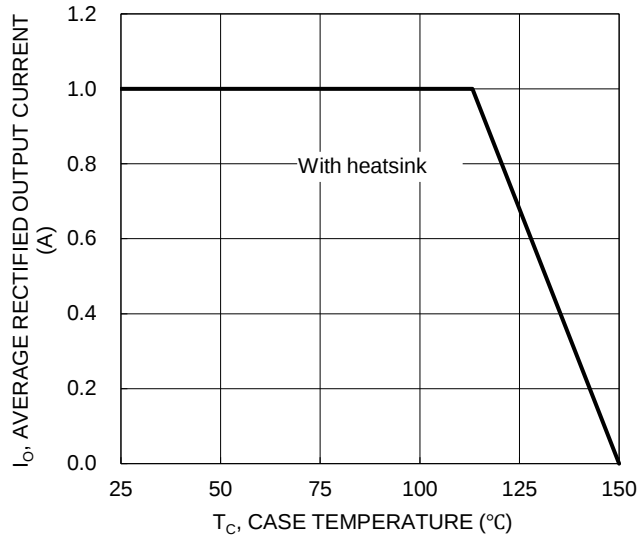


Figure 1. DC Forward Current Derating

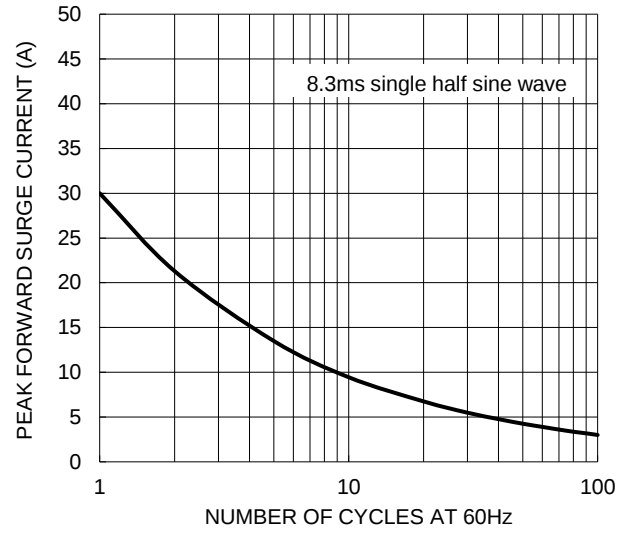


Figure 2. Maximum Non-Repetitive Surge Current

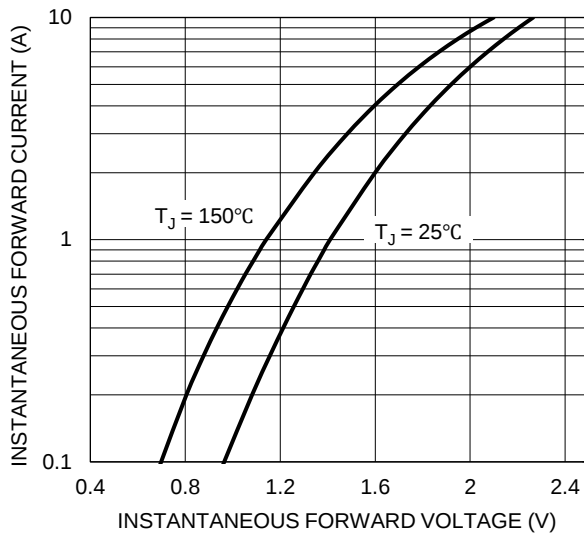


Figure 3. Typical Forward Characteristics

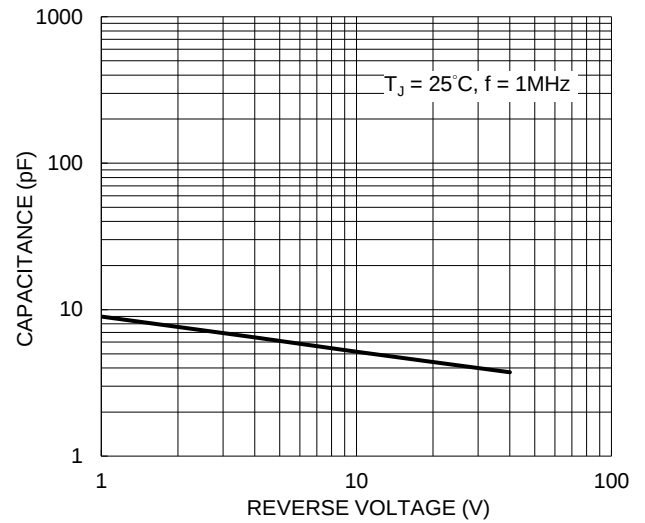


Figure 4. Typical Junction Capacitance

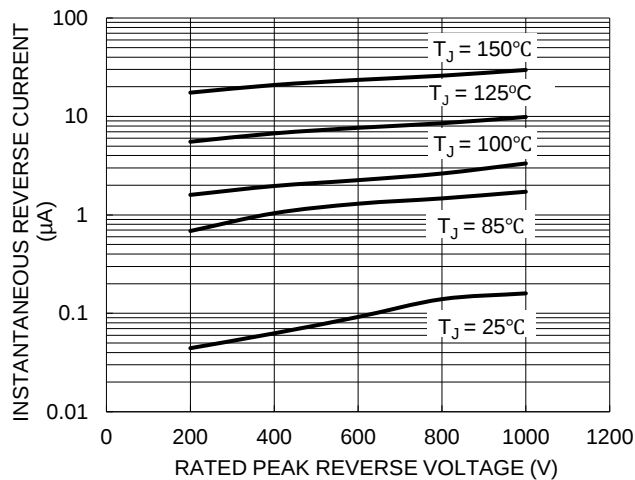
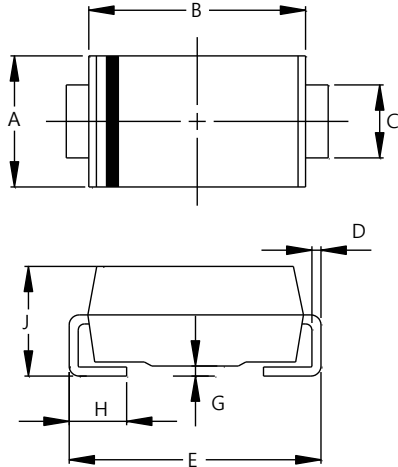


Figure 5. Typical Reverse Characteristics

Package Outline Dimensions

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

SMA

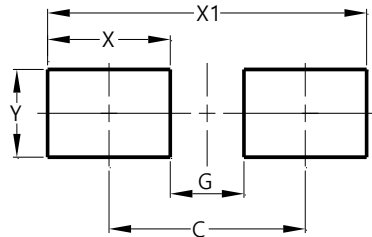


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

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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