

Product Summary @ $T_A = +25^{\circ}\text{C}$

V_{RRM} (V)	I_o (A)	V_F (V)	I_R (μA)
600 to 1000	10	1.1	10

Description and Applications

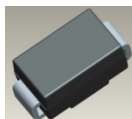
10.0A Surface Mount Glass Passivated Rectifier in SMC package, offers high current capability and low forward voltage drop.

Features and Benefits

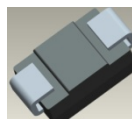
- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 250A Peak
- Ideally Suited for Automated Assembly
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Case: SMC
- Case 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: 0.21 grams (Approximate)



Top View



Bottom View

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
S10xC-13	Commercial	SMC	3,000/Tape & Reel

*x = Device type, e.g. S10MC-13.

- 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


xxxx = Product Type Marking Code (ex: S10M for S10MC; S10K for S10KC; S10J for S10JC)
 YWW = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 0 for 2020)
 WW = Week Code (01 to 52)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

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

Characteristic	Symbol	S10JC	S10KC	S10MC	Unit
Peak Repetitive Reverse Voltage	V_{RRM}				
Working Peak Reverse Voltage	V_{RWM}	600	800	1,000	V
DC Blocking Voltage	V_R				
RMS Reverse Voltage	$V_{R(RMS)}$	426	560	700	V
Average Rectified Output Current	I_O		10.0		A
Non-Repetitive Peak Forward Surge Current, 8.3ms	@ $T_T = +75^\circ\text{C}$				
Single Half Sine-Wave Superimposed on Rated Load	@ $T_J = +25^\circ\text{C}$		250		A
	@ $T_J = +125^\circ\text{C}$		200		A
Non-Repetitive Peak Forward Surge Current, 1.0ms	@ $T_J = +25^\circ\text{C}$			500	A
Single Half Sine-Wave Superimposed on Rated Load	@ $T_J = +125^\circ\text{C}$			400	A
I^2t Rating for Fusing ($t < 8.3\text{ms}$)	I^2t		518.75		A^2S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 6)	$R_{\theta JC}$	3	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Terminal (Note 6)	$R_{\theta JT}$	7	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	12	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Case (Note 7)	$R_{\theta JC}$	8	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Terminal (Note 7)	$R_{\theta JT}$	13	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Ambient (Note 7)	$R_{\theta JA}$	41	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Minimum Reverse Breakdown Voltage	@ $I_R = 1\mu\text{A}$	$V_{(BR)R}$	S10MC: 1,000 S10KC: 800 S10JC: 600	V
Maximum Forward Voltage	@ $I_F = 10.0\text{A}$	V_{FM}	1.1	V
Peak Reverse Current	@ $T_A = +25^\circ\text{C}$ @ $T_A = +125^\circ\text{C}$	I_{RM}	10 250	μA
Typical Total Capacitance (Note 5)	C_T		45	pF

Notes:
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Thermal resistance measured with device mounted on aluminum pad with 100mm x 100mm x 2mm heatsink.
7. Thermal resistance measured without heat sink attached.

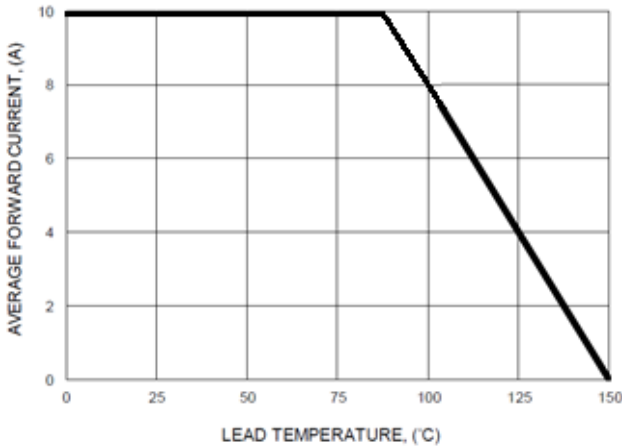


FIG.1- FORWARD CURRENT DERATING CURVE

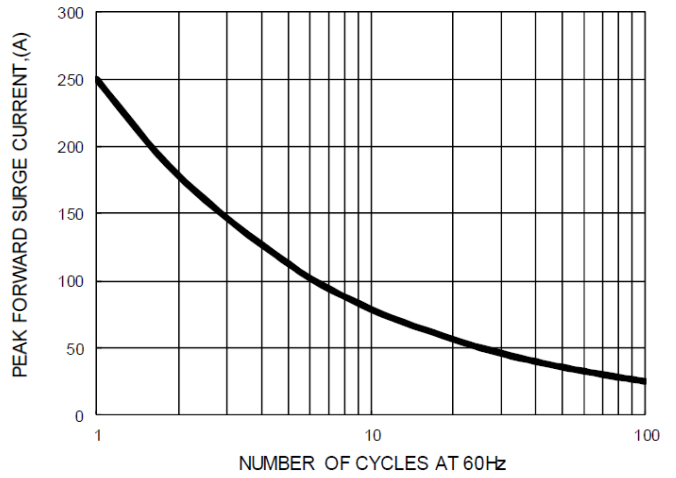


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

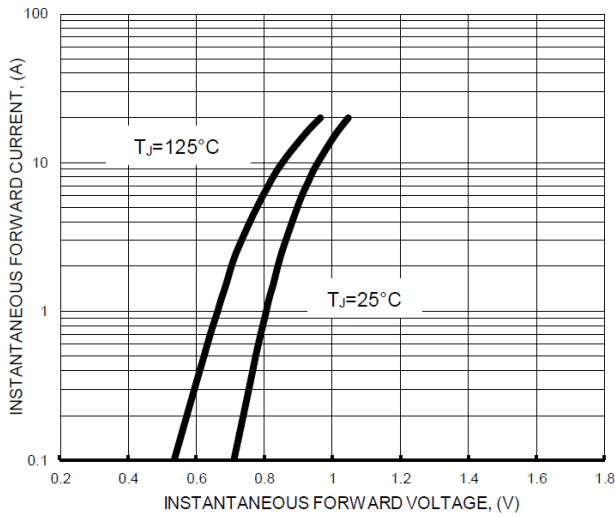


FIG.3- TYPICAL FORWARD CHARACTERISTICS

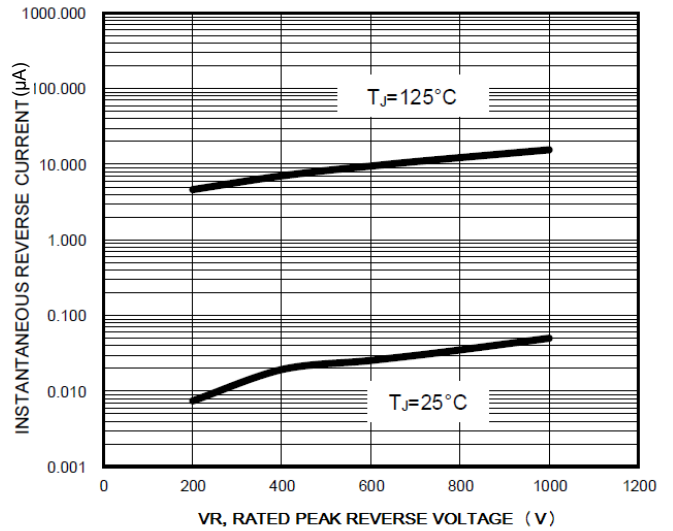
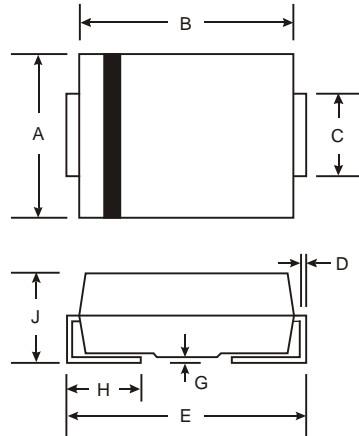


FIG.4- TYPICAL REVERSE CHARACTERISTICS

Package Outline Dimensions

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

SMC

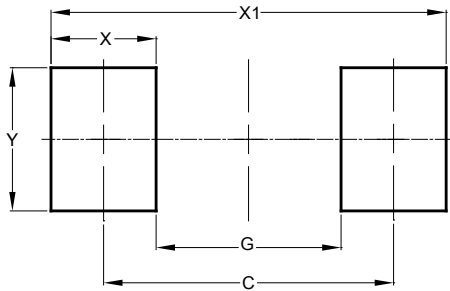


SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

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

SMC



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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