

1.0Amp Ultra Fast Recovery Surface Mounted Rectifiers

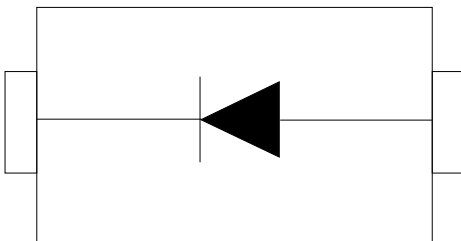
Description

General Application Super Fast Recovery Surface Mounted rectifier, encapsulated in a SMA Surface-Mounted Device (SMD) plastic package.

Features

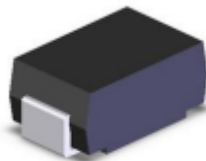
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Idea for printed circuit board
- Glass passivated junction chip
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed 260 °C/10 seconds at terminals

Dimensions and Pin Configuration



Graphic symbol

Package



SMA (Top View)

Mechanical Characteristics

- Case: JEDEC DO-214AC molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Case Material: “Green” Molding Compound

Applications

- For use in high frequency rectification of power Supplies, inverters, converters, and freewheeling Diodes for consumer and telecommunication

Ordering Informatio

Part Number	Shipping	Reel Size
US1AA	5000/Tape & Reel	11 inch
US1BA	5000/Tape & Reel	11 inch
US1DA	5000/Tape & Reel	11 inch
US1GA	5000/Tape & Reel	11 inch
US1JA	5000/Tape & Reel	11 inch
US1KA	5000/Tape & Reel	11 inch
US1MA	5000/Tape & Reel	11 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%

Items	Symbol	US1AA	US1BA	US1DA	US1GA	US1JA	US1KA	US1MA	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_L=100^{\circ}\text{C}$	$I_{(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30.0							A
Typical thermal resistance	R_{QJA}	80.0							$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	$-55 \sim +150$							$^{\circ}\text{C}$
Storage temperature range	T_{STG}	$-55 \sim +150$							$^{\circ}\text{C}$

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

Items	Test conditions	Symbol	US1AA~US1DA	US1GA	US1JA~GS1MA	UNIT
Maximum instantaneous forward voltage	I _F =1.0A	V _F	1.0	1.4	1.7	V
Maximum DC reverse current	T _A =25℃	I _R	2			uA
at rated DC blocking voltage	T _A =125℃		200			
Maxinum reverse recovery time(Note1)		T _{rr}	50		75	ns
Typical junction capacitance(Note 2)		C _j	20			pF

Note:

- Reverse recovery time test condition: $I_F=0.5\text{A}$ $I_R=1.0\text{A}$ $I_{rr}=0.25\text{A}$
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)

FIG.1-DERATING CURVE OUTPUT RECTIFIED CURRENT

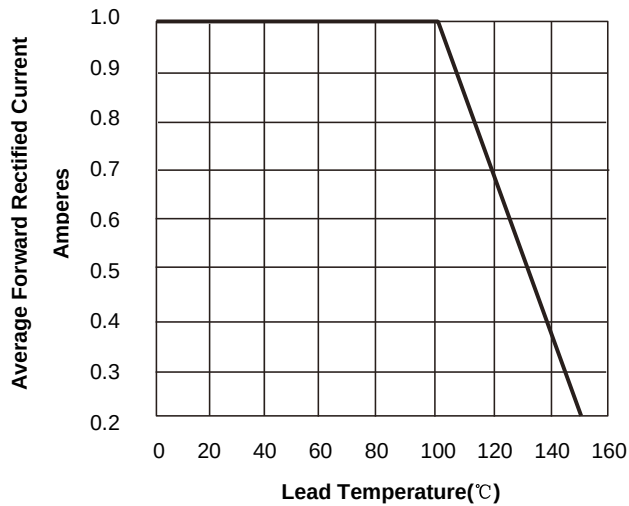


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

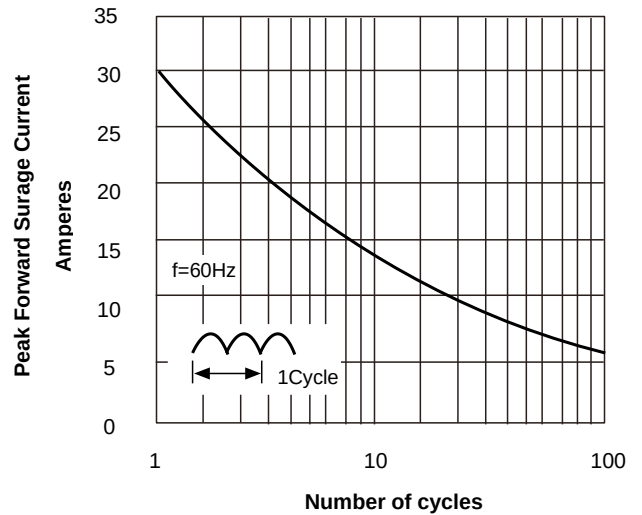


FIG.3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS

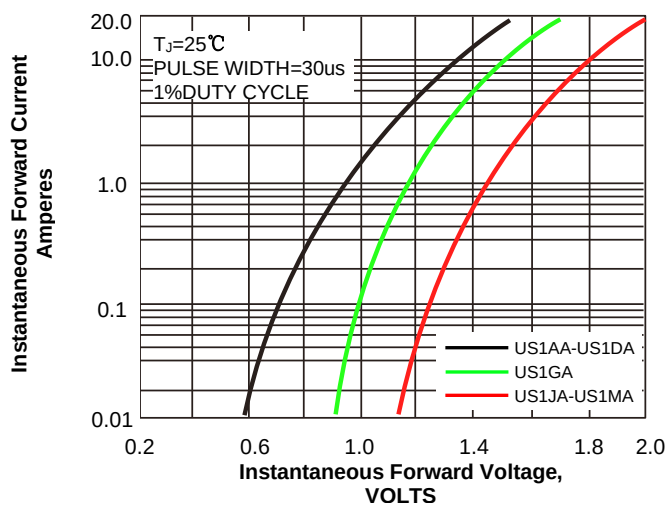
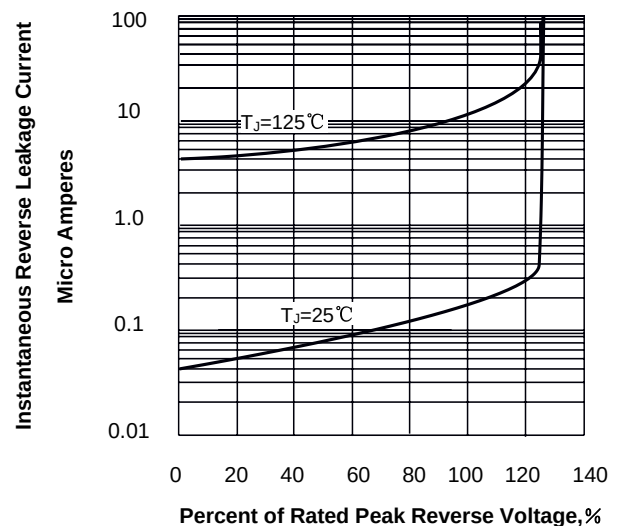
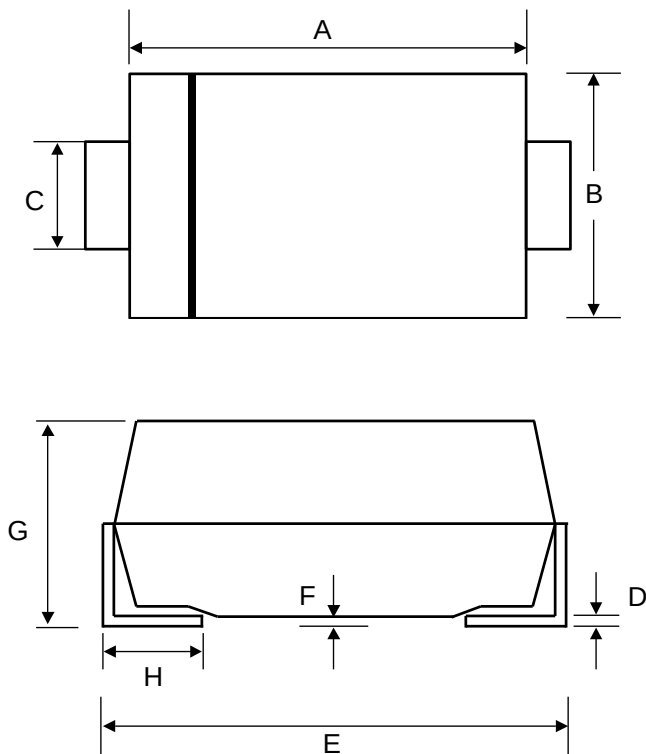


FIG.4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

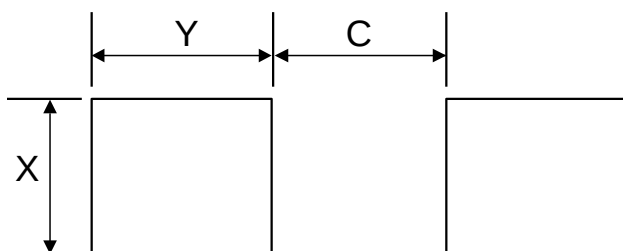


SMA Package Outline Drawing



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.90	4.50	0.153	0.177
B	2.40	2.80	0.094	0.110
C	1.30	1.70	0.051	0.067
D	0.152	0.305	0.006	0.012
E	4.80	5.30	0.188	0.208
F	----	0.203	----	0.008
G	2.00	2.50	0.078	0.098
H	0.76	1.52	0.030	0.060

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.68	0.066
Y	1.52	0.060
C	2.41	0.095

IMPORTANT NOTICE

The information given in this document is believed to be accurate and reliable but shall in no event be regarded as a guarantee of conditions or characteristics. PN-Silicon assumes no responsibility for any errors in this document, or for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of PN-Silicon.

The product listed in this document are designed to be used with ordinary electronic equipment or devices and are not authorized to used with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, automotive and other safety device.)

The  logo is a registered trademark of PN-Silicon co., ltd which reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. PN-Silicon makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.