



US1A THRU US1M

1.0 Amps. Surface Mount Ultrafast Rectifiers



Voltage Range
50 to 1000 Volts
Current
1.0 Amperes

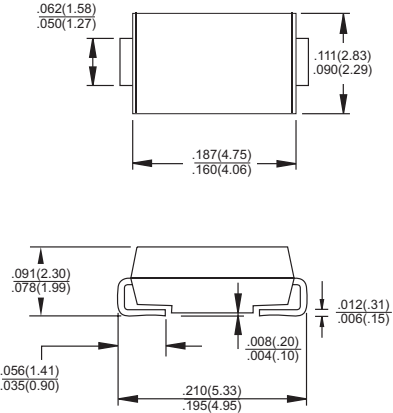
Features

- ✦ Glass passivated junction chip
- ✦ For surface mounted application
- ✦ Low profile package
- ✦ Built-in strain relief
- ✦ Ideal for automated placement
- ✦ Easy pick and place
- ✦ Ultrafast recovery time for high efficiency
- ✦ Low forward voltage, low power loss
- ✦ High temperature soldering guaranteed:
260°C/10 seconds on terminals
- ✦ Plastic material used carries Underwriters
Laboratory Classification 94V-O

Mechanical Data

- ✦ Cases: Molded plastic
- ✦ Terminals: Solder plated, solderable per
MIL-STD-750, Method 2026
- ✦ Polarity: Indicated by cathode band
- ✦ Weight: 0.064 gram

SMA/DO-214AC



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	US1M	Units
Maximum Recurrent 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	00	800	1000	V
Maximum Average Forward Rectified Current @ $T_L=110^\circ\text{C}$	$I_{(AV)}$	1.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30							A
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	1.0			1.7			V	
Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100^\circ\text{C}$	I_R	10				50			uA uA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	50			75			nS	
Typical Junction Capacitance (Note 2)	C_j	15			10			pF	
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	75 27							$^{\circ}\text{C}/\text{W}$
Operating Temperature Range	T_J	-55 to +150							$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to + 150							$^{\circ}\text{C}$

Notes: 1. Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

2. Measured at 1 MHz and Applied $V_R=4.0$ Volts

3. P.C.B. Mounted on 0.2 x 0.2" (5.0 x 5.0mm) Copper Pad Area.

RATINGS AND CHARACTERISTIC CURVES (US1A THRU US1M)

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

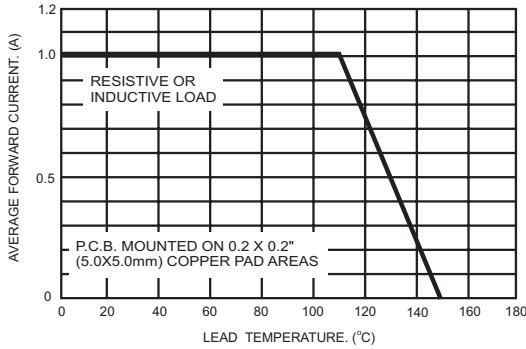


FIG. 2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

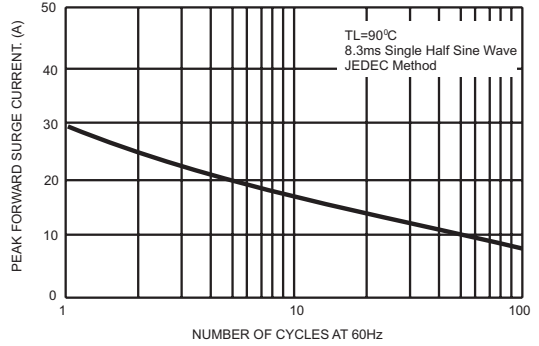


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

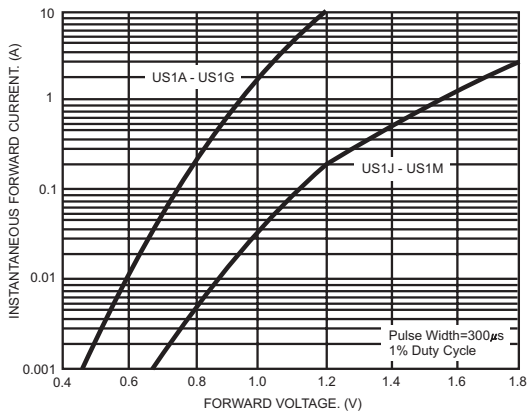


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

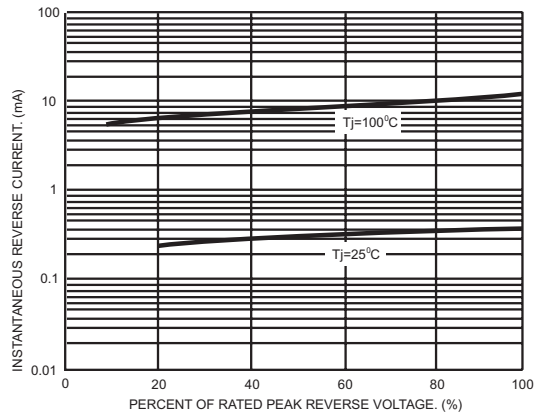


FIG. 5- TYPICAL JUNCTION CAPACITANCE

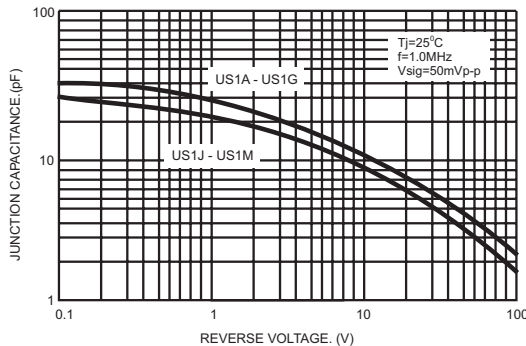


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE

