



SM Technology Co., Limited

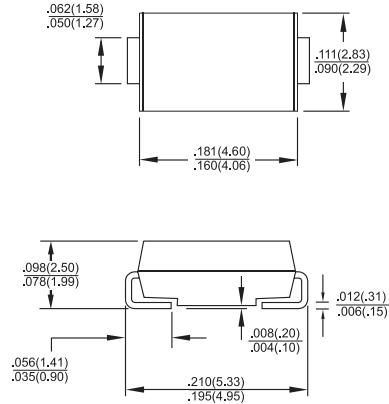
US1A - US1M

1.0 Amps. Surface Mount High Efficient Rectifiers

SMA/DO-214AC

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 94V0



Mechanical Data

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

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 @ $T_A=125^\circ\text{C}$	I_R				5.0 150			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			$^\circ\text{C/W}$	
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

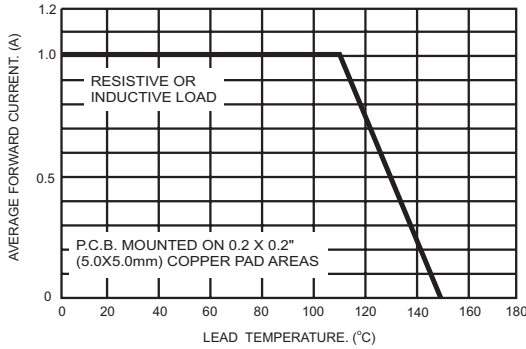


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

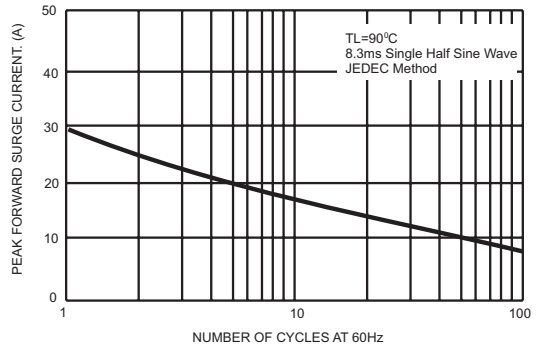


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

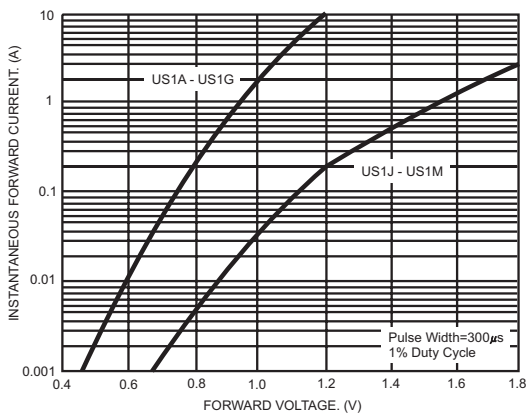


FIG.4- TYPICAL REVERSE CHARACTERISTICS

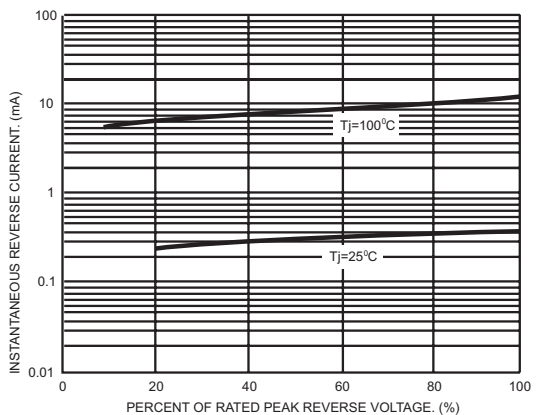


FIG.5- TYPICAL JUNCTION CAPACITANCE

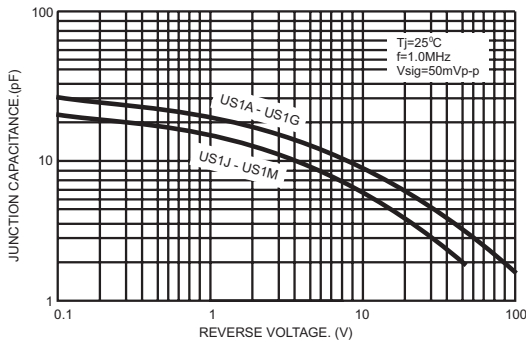


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE

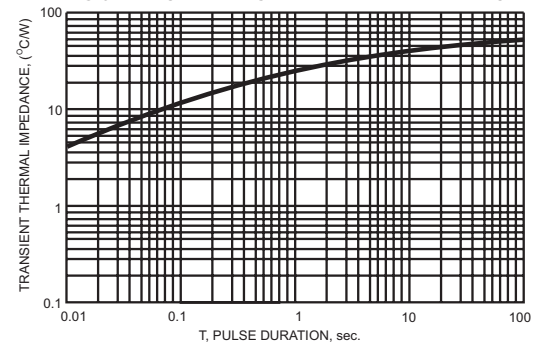


FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

