



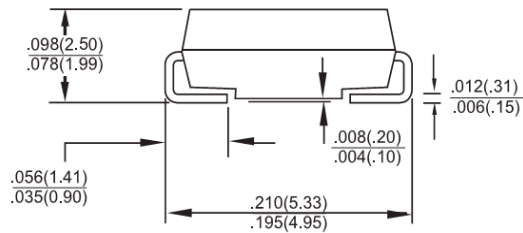
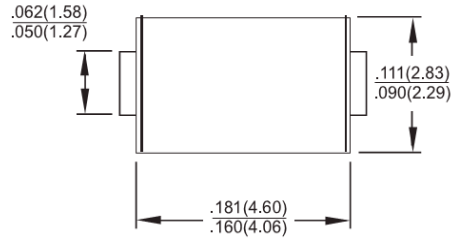
## US1A - US1M

### 1.0AMP. High Efficient Surface Mount Rectifiers

#### SMA/DO-214AC

### Features

- ✧ UL Recognized File # E-326243
- ✧ Glass passivated chip junction
- ✧ 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-0
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



**Dimensions in inches and (millimeters)**

### Mechanical Data

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

### Marking Diagram



- US1X = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

### 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	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 .375 (9.5mm) Lead Length @ $T_L=110^{\circ}C$	$I_{F(AV)}$	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 (Note 1) @ 1.0A	$V_F$	1.0			1.7			V	
Maximum Reverse Current @ Rated VR $T_A=25^{\circ}C$ $T_A=125^{\circ}C$	$I_R$	5			150			$\mu A$	
Maximum Reverse Recovery Time (Note 2)	$T_{rr}$	50			75			nS	
Typical Junction Capacitance (Note 3)	$C_j$	15			10			pF	
Typical Thermal Resistance (Note 4)	$R_{\theta JA}$ $R_{\theta JL}$	75			27			$^{\circ}C/W$	
Operating Temperature Range	$T_J$	- 55 to + 150							$^{\circ}C$
Storage Temperature Range	$T_{STG}$	- 55 to + 150							$^{\circ}C$

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $IRR=0.25A$

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 4: P.C.B Mounted on 0.2" x 0.2" (5mm x 5mm) Copper Pad Area

## RATINGS AND CHARACTERISTIC CURVES (US1A THRU US1M)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

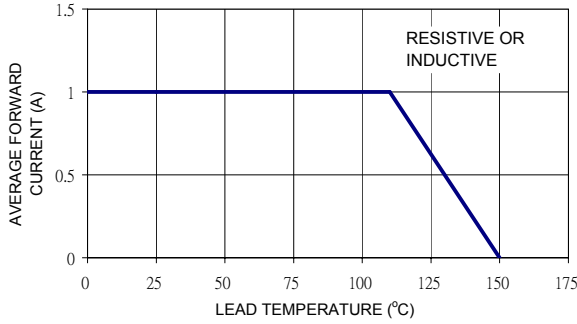


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

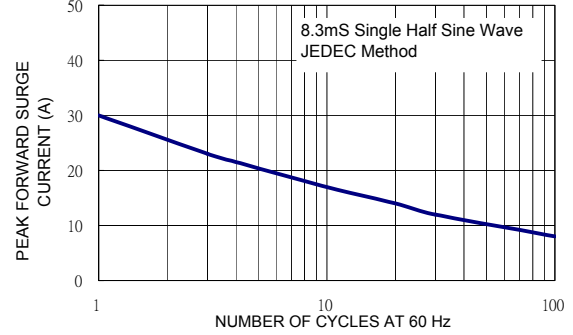


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

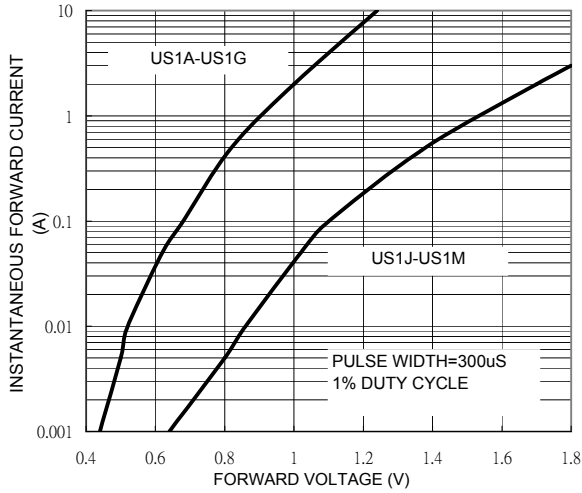


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

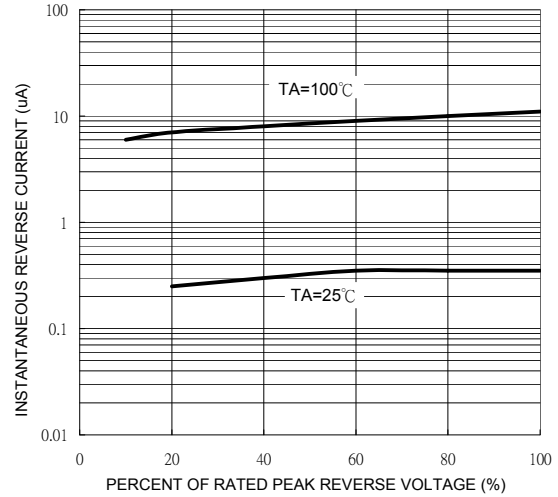


FIG. 5 TYPICAL JUNCTION CAPACITANCE

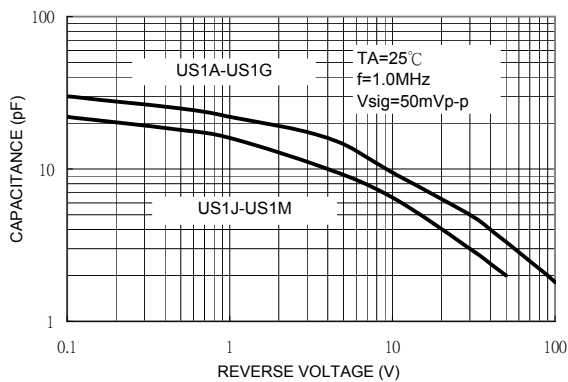


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

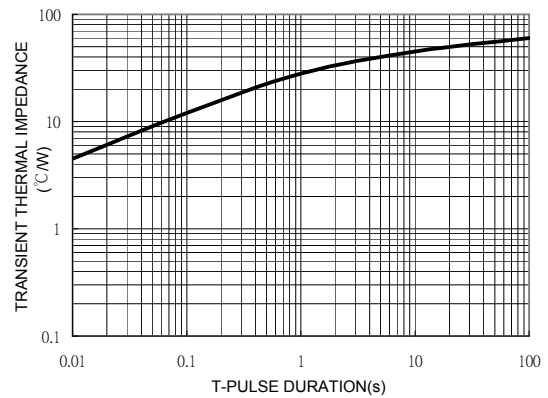
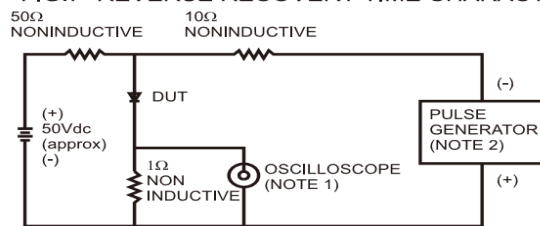


FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



- NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf  
 2. Rise Time=10ns max. Source Impedance= 50 ohms

