

## US1A THRU US1K SURFACE MOUNT ULTRA FAST RECTIFIER



### Features

- Ideally Suited for Automatic Assembly
- Low Forward Overload Drop, High Efficiency
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Material has UL Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.06 grams(approx)

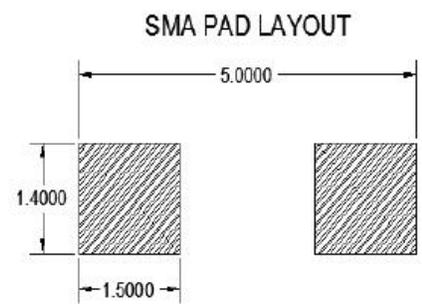
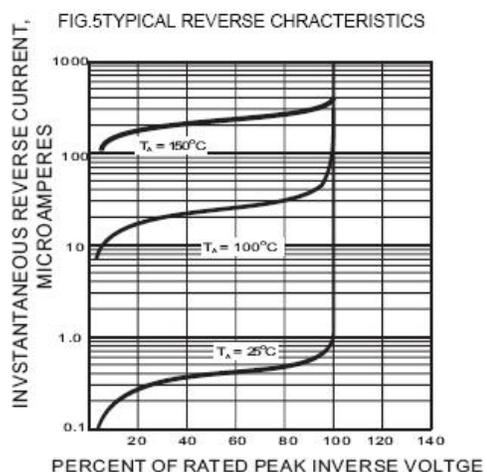
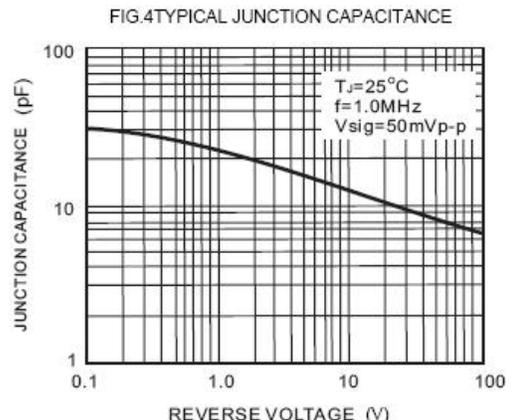
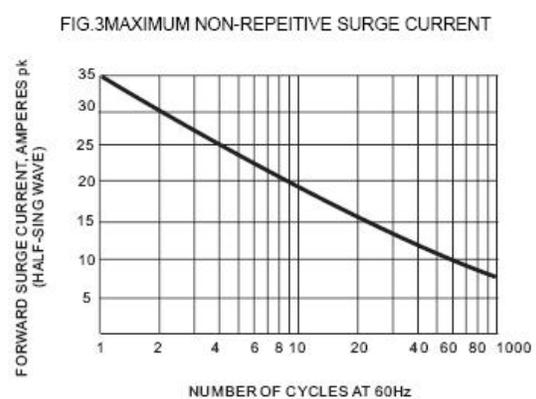
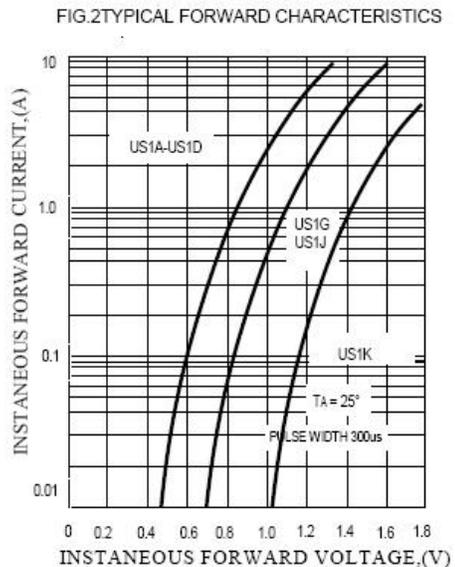
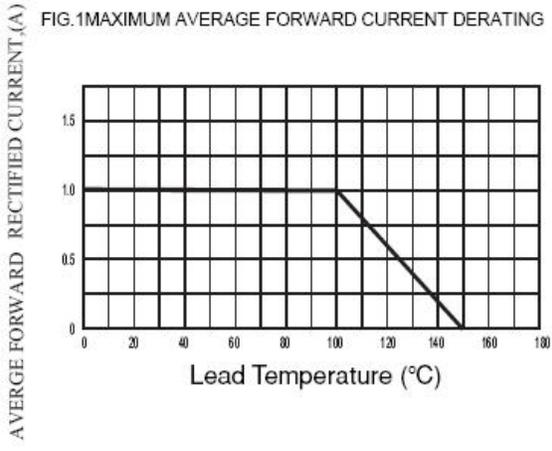
### Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Characteristic	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	
Average Rectified Output Current @ $T_L = 100^{\circ}\text{C}$	$I_O$	1.0						A
Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	35						A
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	5.08						$\text{A}^2\text{s}$
Forward voltage @ $I_F = 1.0\text{A}$	$V_F$	1.0		1.3		1.7		V
Peak Reverse Current @ $T_A = 25^{\circ}\text{C}$ At Rated DC Blocking Voltage @ $T_A = 125^{\circ}\text{C}$	$I_R$	5 200						$\mu\text{A}$
Typical junction capacitance (Note 1)	$C_J$	45.0						pF
Reverse Recovery Time (Note 2)	$T_{rr}$	50				75		ns
Typical thermal resistance (Note 3)	$R_{\theta JA}$	30						$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150						$^{\circ}\text{C}$

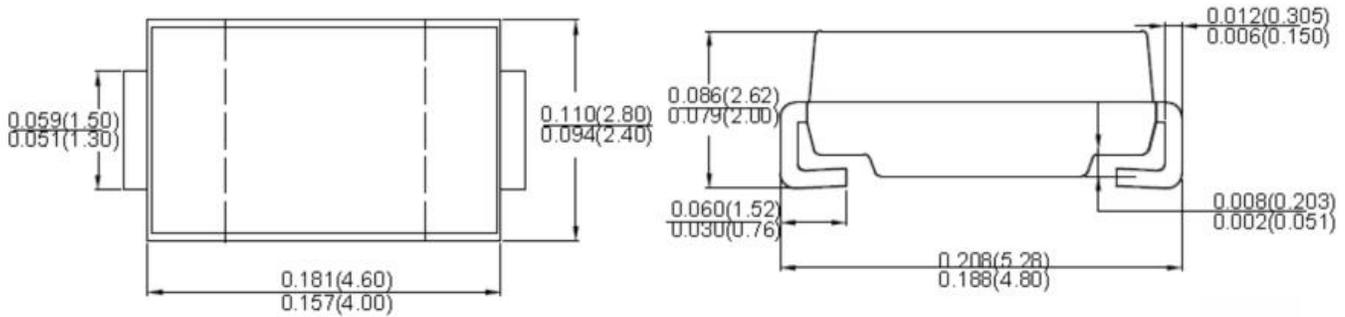
Note: 1. Reverse Recovery Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .  
 2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C  
 3.  $8.0\text{mm}^2$  (.13mm Thick) Land Areas.

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**Ratings and Characteristics Curves**



## Mechanical Dimensions SMA (Inches/Millimeters)



## Ordering Information

Device	Package	Shipping
US1A THRU US1K	SMA (Pb-Free)	5000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## Marking Diagram

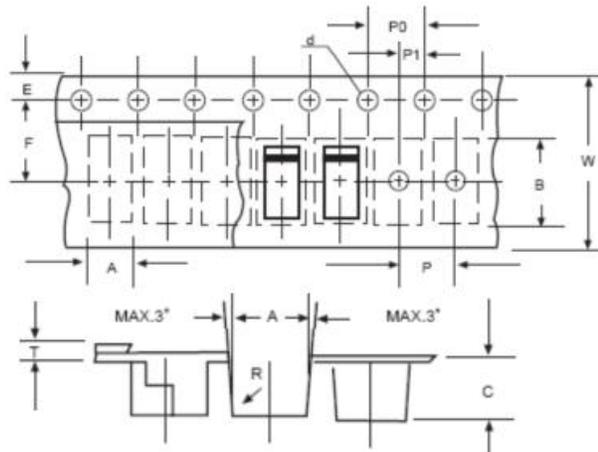


Where XXXXX is YYWWL

US = Device Type  
1 = Forward Current (1A)  
A = Reverse Voltage (50V)  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Carrier Tape Specification SMA



SYMBOL	Millimeters	
	Min.	Max.
A	2.97	3.17
B	5.70	5.90
C	2.32	2.52
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
T	0.25	0.35
W	11.80	12.20

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