

# US1A THRU US1M

## Surface Mount Ultrafast Recovery Rectifiers

Reverse Voltage – 50 to 1000 V

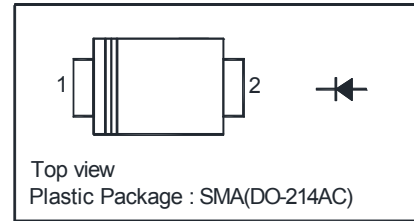
Forward Current – 1 A

### Features

- For surface mount applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Ultrafast recovery times for high efficiency
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### Mechanical Data

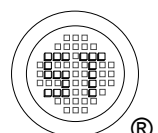
- **Case:** SMA (DO-214AC) molded plastic
- **Terminals:** Solder plated, solderable per MIL-STD-750, method 2026 guaranteed
- **Polarity:** Color band denotes cathode end

### Maximum Ratings and Electrical Characteristics

Ratings 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%.

Parameter	Symbols	US1A	US1B	US1D	US1G	US1J	US1K	US1M	Units
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 $T_C = 125^\circ\text{C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	30							A
Maximum Forward Voltage at 1 A	$V_F$	1		1.3		1.65		V	
Maximum DC Reverse Current $T_J = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_J = 125^\circ\text{C}$	$I_R$	5 100							$\mu\text{A}$
Typical Junction Capacitance at 4 V, 1 MHz	$C_J$	15							pF
Maximum Reverse Recovery Time at $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	50				75			ns
Typical Thermal Resistance <sup>1)</sup>	$R_{\theta JA}$	75							$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{Stg}$	- 55 to + 150							$^\circ\text{C}$

<sup>1)</sup> Mounted on P.C.B. with 2" X 2" (5 X 5 mm) copper pad areas.



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## Electrical Characteristics Curves

Fig.1 Forward Current Derating Curve

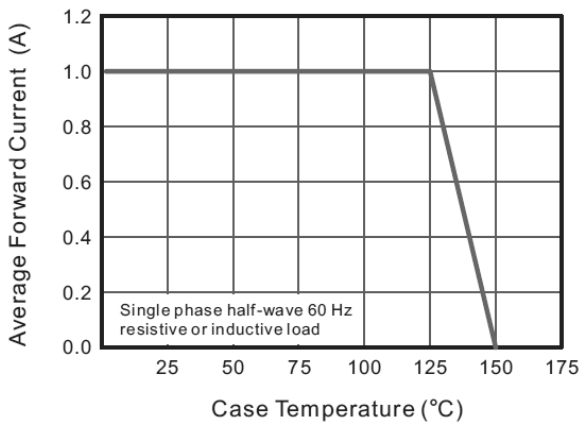


Fig.2 Typical Reverse Characteristics

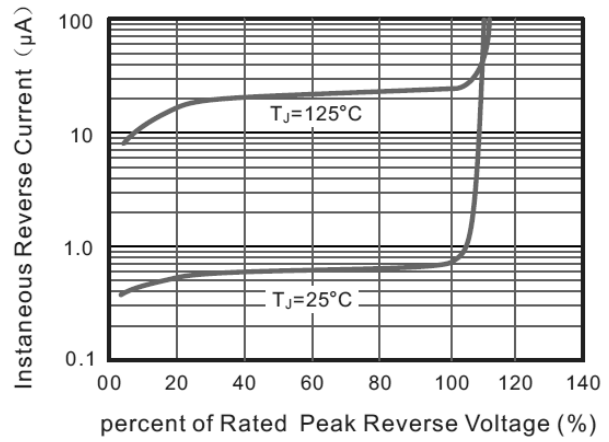


Fig.3 Typical Forward Characteristics

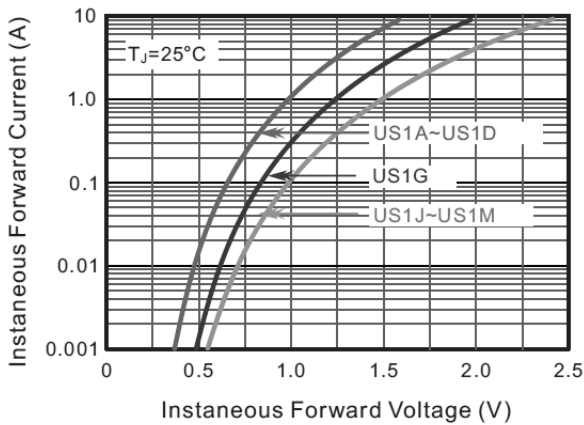


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

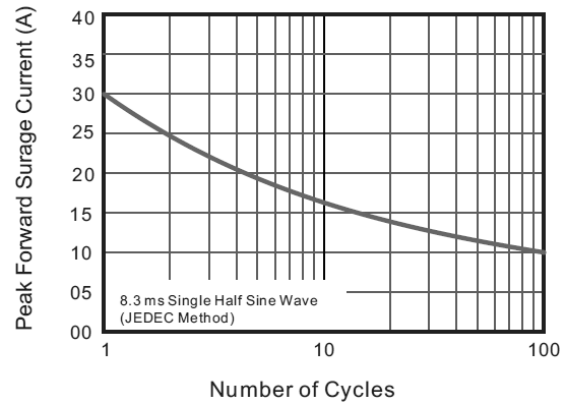


Fig.5- Typical Transient Thermal Impedance

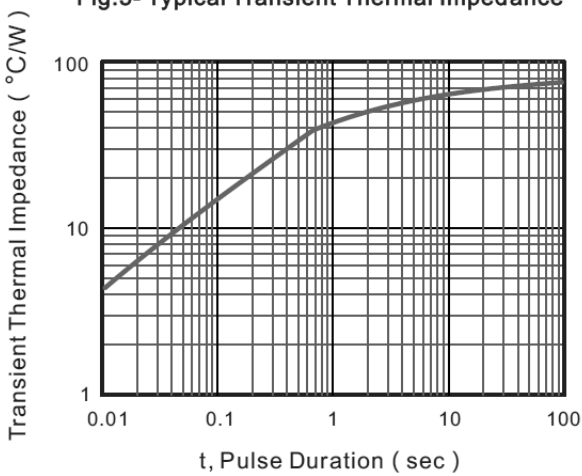
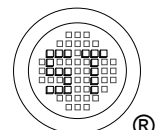
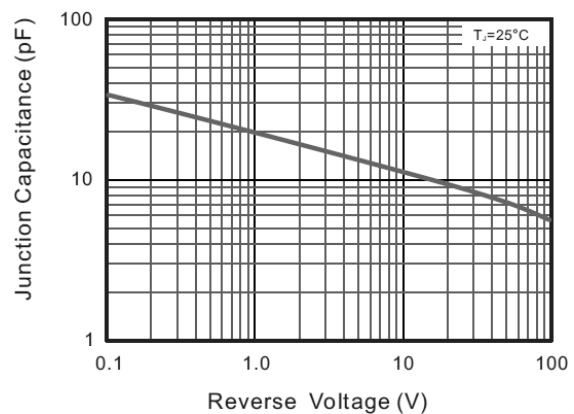


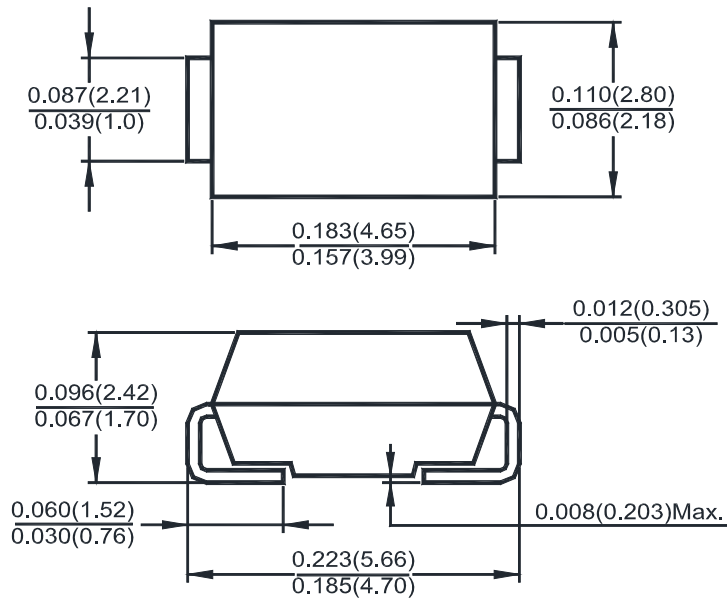
Fig.6 Typical Junction Capacitance



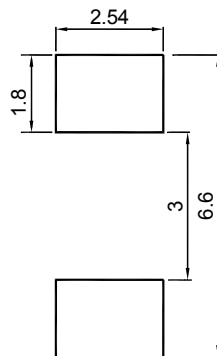
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Package Outline Dimensions in inches (millimeters)

SMA(DO-214AC)



## Recommended Soldering Footprint



## Marking information

" US1\* " = Part No.

Type	Marking	Type	Marking	Type	Marking	Type	Marking
US1A	US1A	US1B	US1B	US1D	US1D	US1G	US1G
US1J	US1J	US1K	US1K	US1M	US1M		

" III " = Cathode line

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