



# US1A SERIES

## SURFACE MOUNT ULTRAFAST RECTIFIER

**VOLTAGE** 50 to 1000 Volt **CURRENT** 1 Ampere

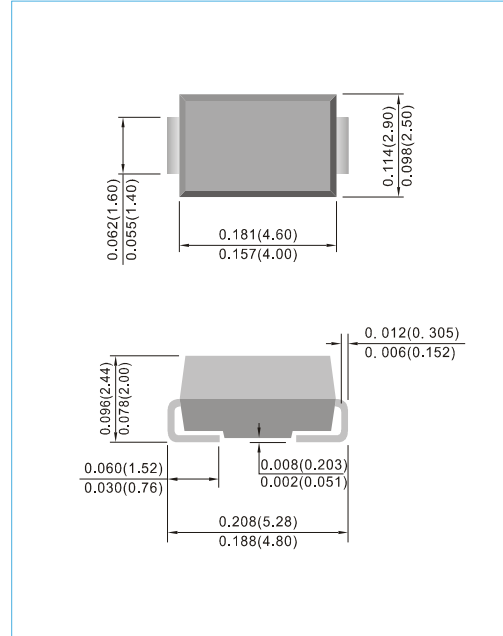
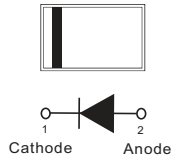
**SMA / DO-214AC** Unit : inch(mm)

### FEATURES

- For surface mounted applications in order to optimize board space
- Easy pick and place
- Ultrafast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### MECHANICAL DATA

- Case: JEDEC DO-214AC molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard packaging: 12mm tape (EIA-481)
- Weight: 0.0023 ounces, 0.0679 grams
- Marking : Part number



## 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%.

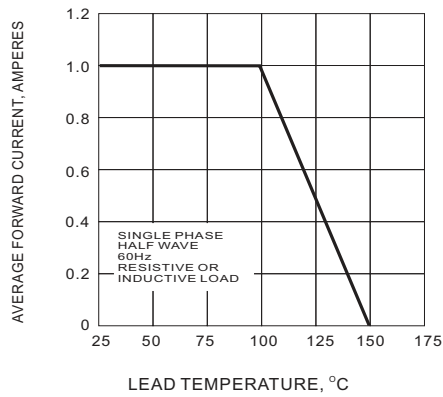
PARAMETER	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Current	$I_{F(AV)}$	1							A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Maximum Forward Voltage at 1A	$V_F$	1	1.3	1.7					V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	$I_R$	1 100							$\mu\text{A}$
Typical Junction Capacitance (Note 2)	$C_J$	17							pF
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$	30							$^\circ\text{C} / \text{W}$
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	28							$^\circ\text{C} / \text{W}$
Maximum Reverse Recovery Time (Note 1)	$T_{RR}$	50				100			ns
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150							$^\circ\text{C}$

NOTES: 1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=-1\text{A}$ ,  $I_{rr}=-0.25\text{A}$   
 2. Measured at 1 MHz and applied  $V_r = 4\text{volts}$ .  
 3.  $8\text{mm}^2$  (0.013mm thick) land areas.  
 4. Mounted on  $100\text{cm}^2$  FR4 PCB.

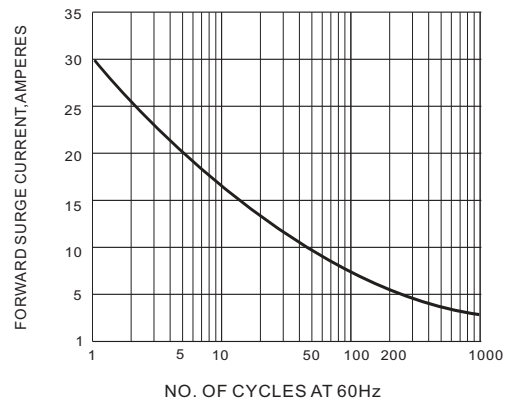


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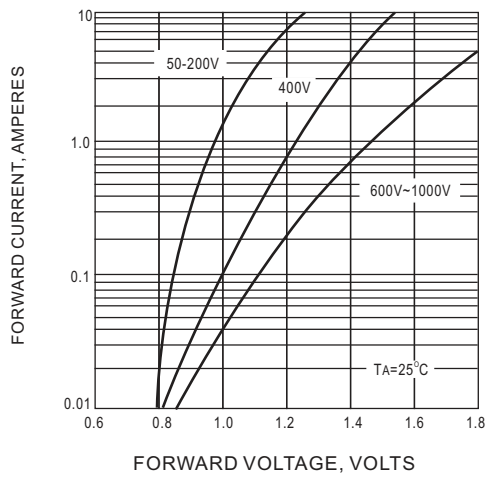
## RATING AND CHARACTERISTIC CURVES



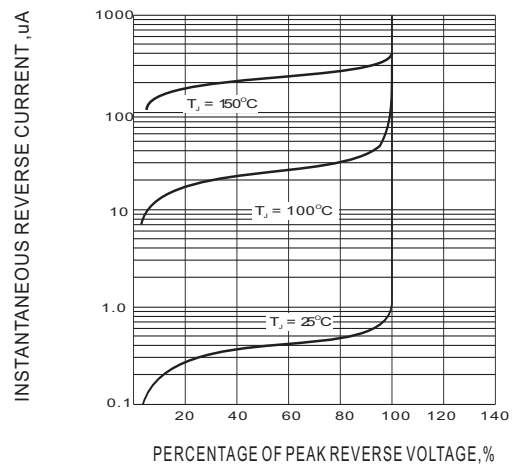
**Fig.1 FORWARD CURRENT DERATING CURVE**



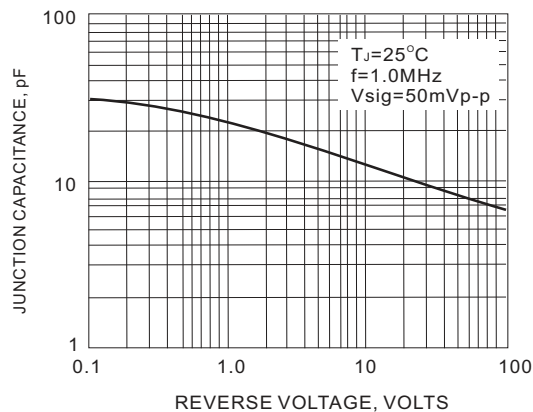
**Fig.2 PEAK FORWARD SURGE CURRENT**



**Fig.3 FORWARD CHARACTERISTICS**



**Fig.4-TYPICAL REVERSE CHARACTERISTIC**



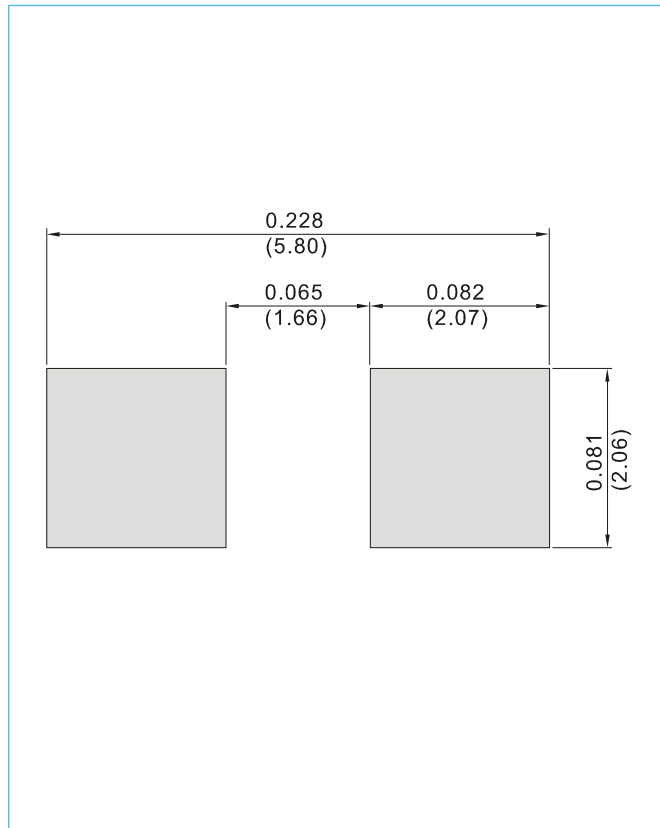
**Fig.5 TYPICAL JUNCTION CAPACITANCE**



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### MOUNTING PAD LAYOUT

SMA / DO-214AC Unit : inch(mm)



### ORDER INFORMATION

- Packing information  
T/R - 7.5K per 13" plastic Reel  
T/R - 1.8K per 7" plastic Reel



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### Part No\_packing code\_Version

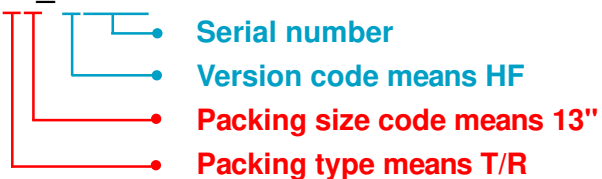
US1A\_R1\_00001

US1A\_R2\_00001

For example :

**RB500V-40\_R2\_00001**

Part No.



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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