



# US1A SERIES

## SURFACE MOUNT ULTRAFAST RECTIFIER

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

**SMA / DO-214AC**

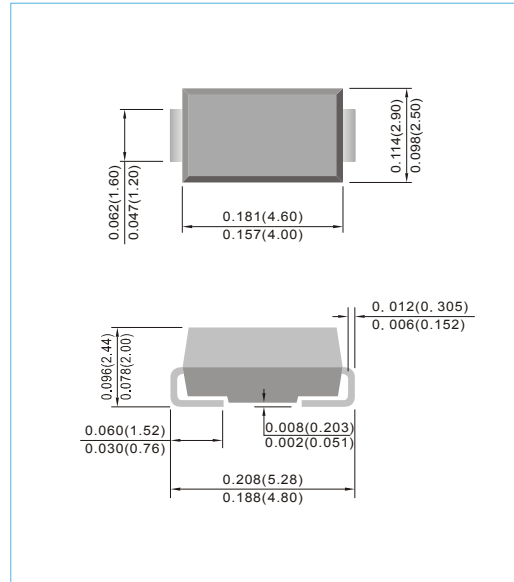
Unit : inch(mm)

### 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%.

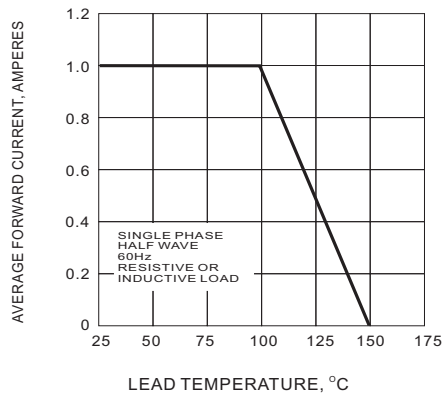
PARAMETER	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Current	$I_{F(AV)}$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

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

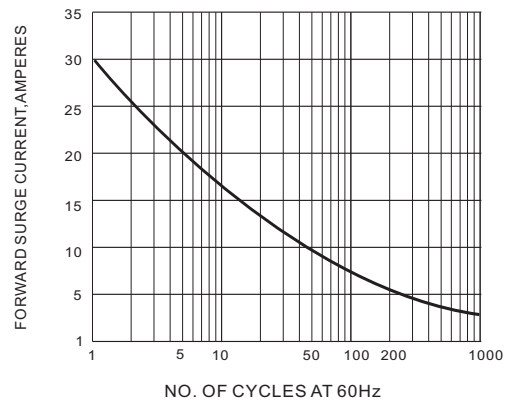


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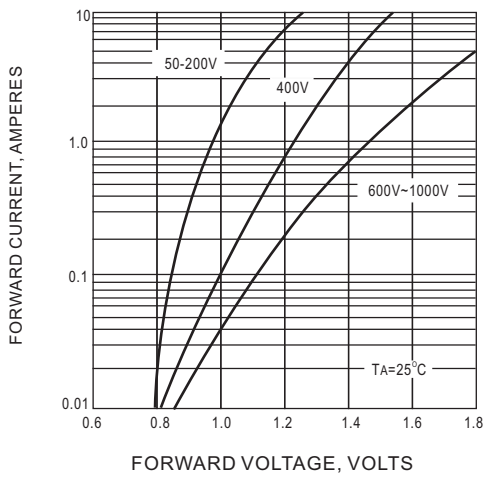
## RATING AND CHARACTERISTIC CURVES



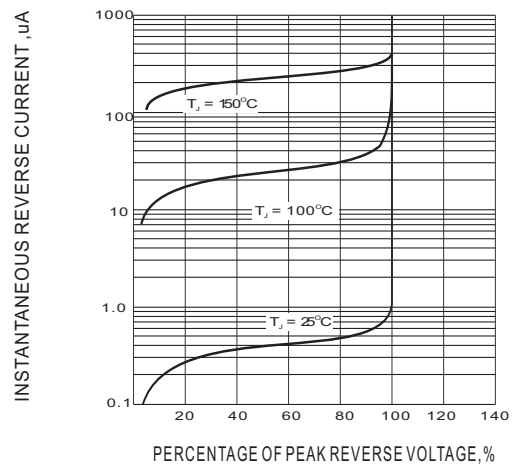
**Fig.1 FORWARD CURRENT DERATING CURVE**



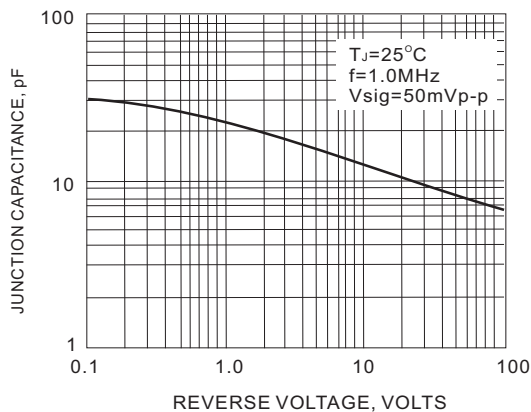
**Fig.2 PEAK FORWARD SURGE CURRENT**



**Fig.3 FORWARD CHARACTERISTICS**



**Fig.4-TYPICAL REVERSE CHARACTERISTIC**



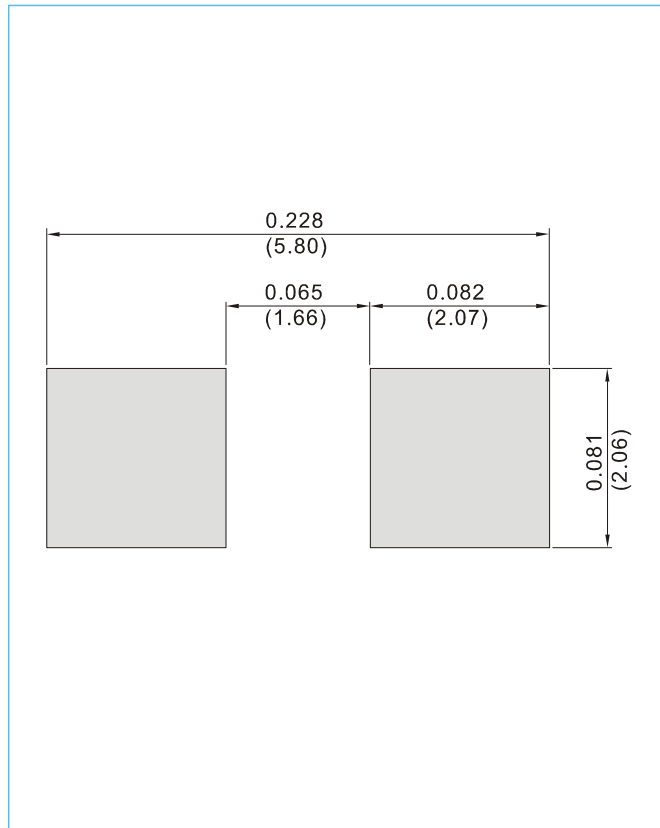
**Fig.5 TYPICAL JUNCTION CAPACITANCE**



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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

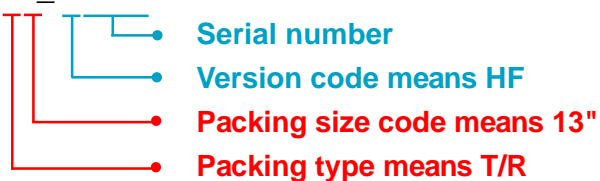
US1A\_R1\_00001

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)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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