

# SURFACE MOUNT GLASS PASSIVATED RECTIFIER US3A ~ US3J

## Surface Mount Glass Passivated Rectifier

### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Built-in strain relief, ideal for automated placement
- Glass passivated chip junction
- High temperature soldering guaranteed 250°C/ 10 seconds
- Fast switching speed for high efficiency
- RoHS and REACH compliance



**DO214AB  
(SMC)**

**RoHS  
COMPLIANT**

### Mechanical Data

<b>Case:</b>	DO-214AB(SMC), transfer molded plastic
<b>Epoxy:</b>	Meets UL 94V-0 flammability rating
<b>Terminals:</b>	Solder plated, solderable per MIL-STD 750, Method 2026
<b>Polarity:</b>	Cathode indicated by color band
<b>Mounting position:</b>	Any
<b>Weight:</b>	0.21 gram

### Maximum Ratings ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	US3A	US3B	US3C	US3D	US3F	US3G	US3J	Unit	Conditions
<b>V<sub>RRM</sub></b>	Max Recurrent Peak Reverse Voltage	50	100	150	200	300	400	600	V	
<b>V<sub>RMS</sub></b>	Max RMS Voltage	35	70	105	140	210	280	420	V	
<b>V<sub>DC</sub></b>	Max DC Blocking Voltage	50	100	150	200	300	400	600	V	
<b>I<sub>(AV)</sub></b>	Max Average Forward Rectified Current	3.0							A	TA=25°C
<b>I<sub>FSM</sub></b>	Peak Forward Surge Current	150							A	8.3ms single half sine-wave (JEDEC)
<b>t<sub>rr</sub></b>	Maximum Reverse Recovery Time	50						75	nS	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A
<b>T<sub>J</sub>, T<sub>STG</sub></b>	Operating and Storage Temperature Range	-55 to +150							°C	

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## US3A ~ US3J

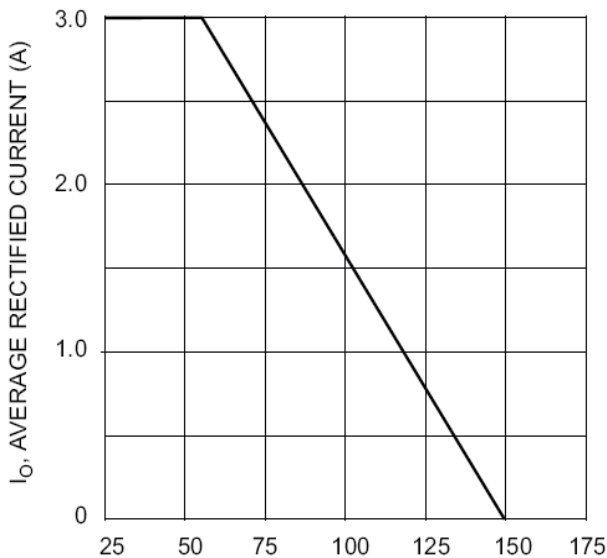
### Electrical Characteristics ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	US3A	US3B	US3C	US3D	US3F	US3G	US3J	Unit	Conditions
$V_F$	Max Instantaneous Forward Voltage	1.0			1.3				V	$I_F(AV)= 3.0A$
$I_R$	Max DC Reverse Current at Rated DC Blocking Voltage	5.0							$\mu A$	$T_A=25^{\circ}C$
		200								$T_A=125^{\circ}C$
$C_J$	Typical Junction Capacitance	80			50				pF	At 1MHz, reversed voltage of 4V
$R_{\theta-JA}$	Typical Thermal Resistance	47							$^{\circ}C/W$	
$R_{\theta-JL}$		17								

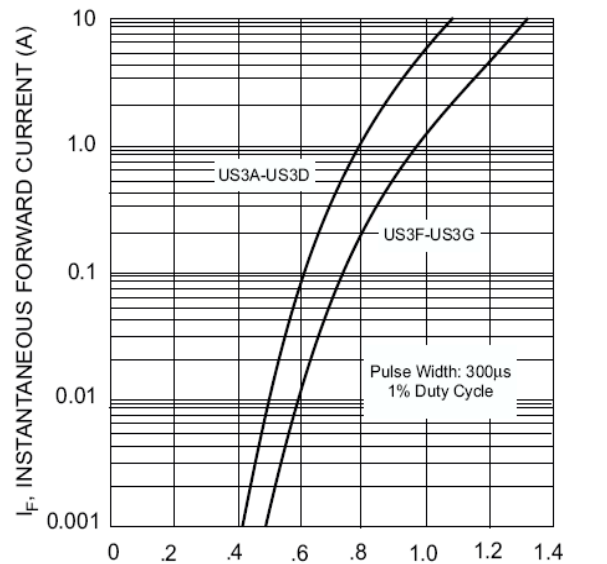
**Note:**

- Unit mounted on PCB with 5.0mm2 (0.013mm thick) copper pads as heat sink.

### Typical Characteristics Curves



$T_T$ , TERMINAL TEMPERATURE ( $^{\circ}C$ )  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics

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## US3A ~ US3J

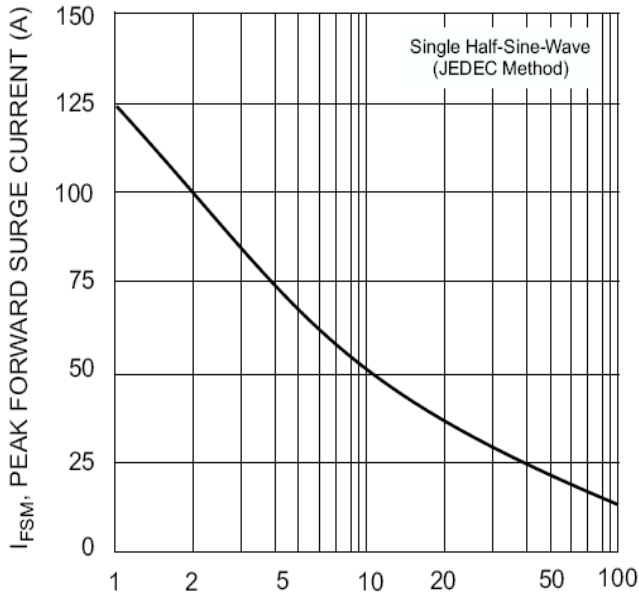


Fig. 3 Surge Current Derating Curve

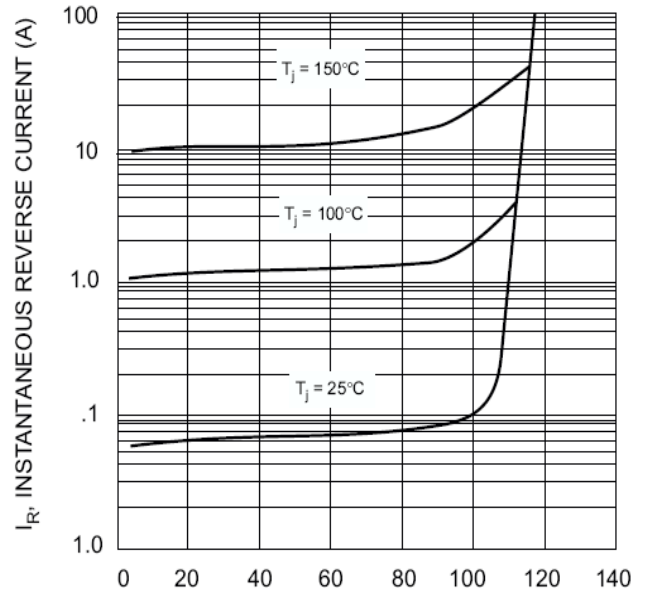
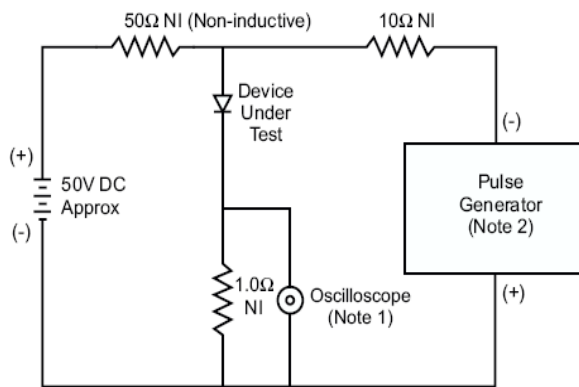
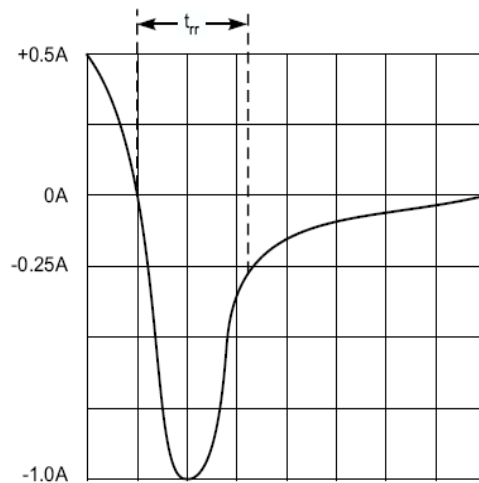


Fig. 4 Typical Reverse Characteristics



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.



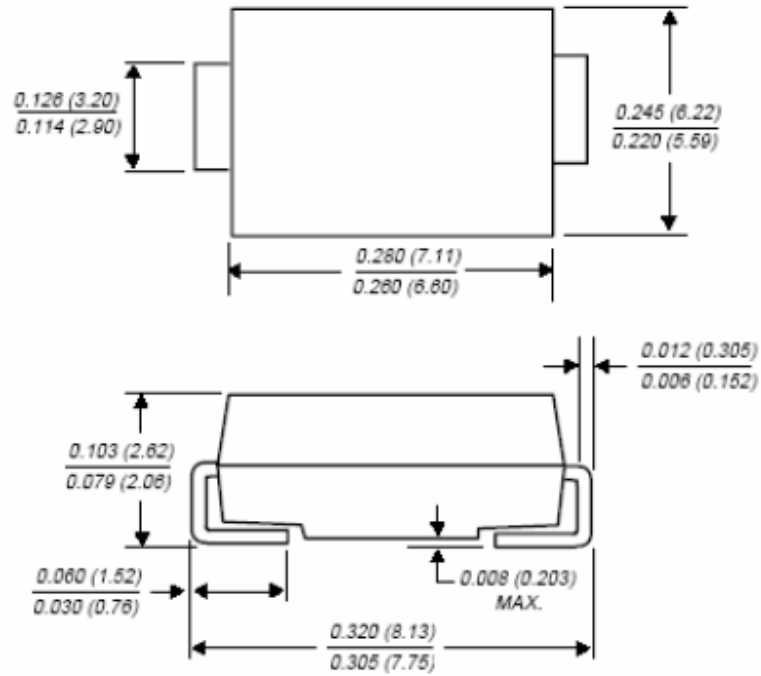
Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

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Dimensions in inch (mm)



DO-214AB(SMC)