US3A THRU US3M

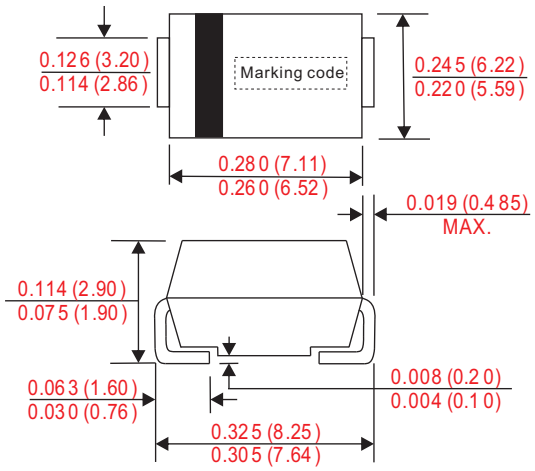
3A Surface Mount Ultra Fast Rectifiers

■ Features

- Low profile surface mounted application in order to optimize board space.
- High current capability.
- High surge capability.
- Ultrafast recovery time for high efficiency.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen free parts, ex. US3AG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Outline

SMC(DO-214AB)



Dimensions in inches and (millimeters)

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.007 ounce, 0.226 gram

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current		I_O			3.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			100	A
Reverse current	$V_R = V_{RRM}$ $T_A = 25°C$	I_R			5.0	uA
	$V_R = V_{RRM}$ $T_A = 125°C$				100	
Storage temperature		T_{STG}	-55		+150	°C

Symbol	Marking code	Max. repetitive peak reverse voltage V_{RRM} (V)	Max. RMS voltage V_{RMS} (V)	Max. DC blocking voltage V_R (V)	Max. forward voltage @3A, $T_A = 25°C$ V_F (V)	Max. reverse recovery time(1) T_{rr} (ns)	Operating temperature T_J (°C)
US3A	US3A	50	35	50	1.0	50	-55 ~ +150
US3B	US3B	100	70	100			
US3D	US3D	200	140	200			
US3G	US3G	400	280	400	1.40		
US3J	US3J	600	420	600	1.70	75	
US3K	US3K	800	560	800			
US3M	US3M	1000	700	1000			

Note : 1. $I_F = 0.5A$, $I_R = 1.0A$, $I_{RR} = 0.25A$

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■ Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

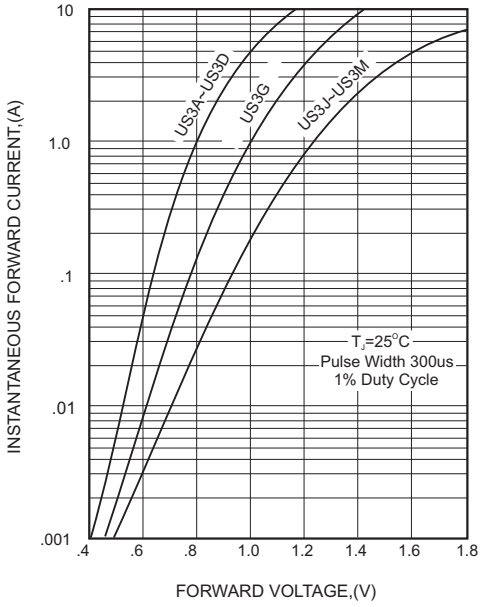


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

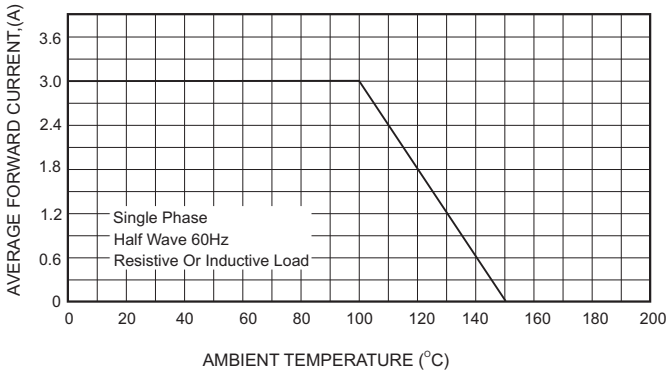
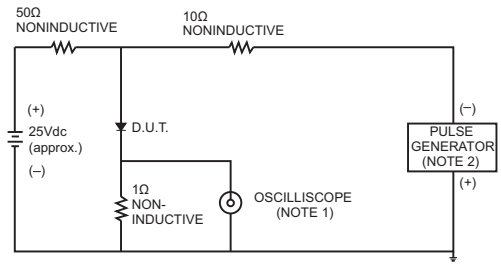


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

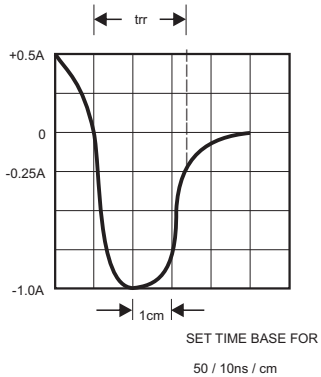


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

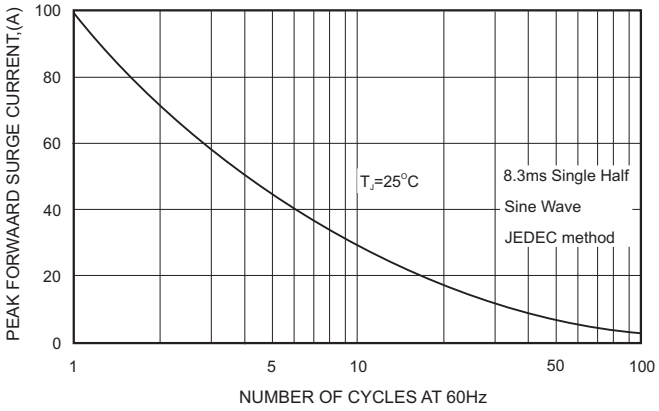
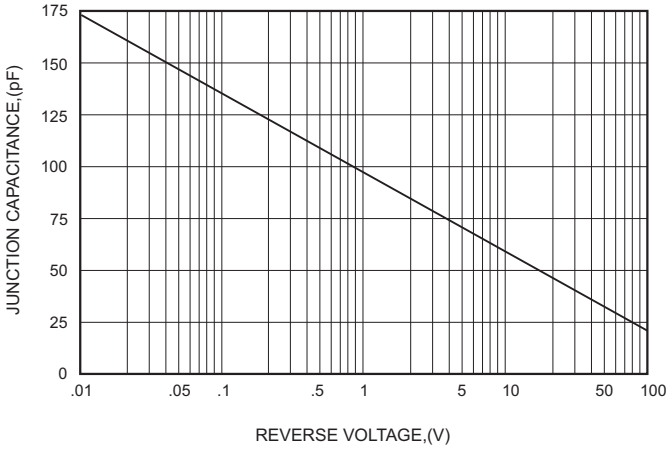


FIG.5-TYPICAL JUNCTION CAPACITANCE



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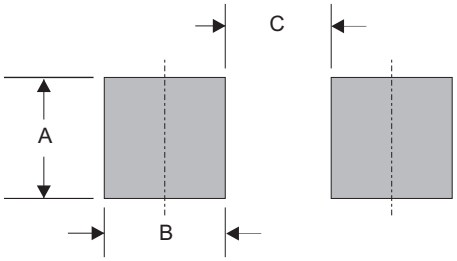
■ SMC foot print



A	B	C
0.132 (3.30)	0.098 (2.50)	0.176 (4.40)

Dimensions in inches and (millimeters)

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