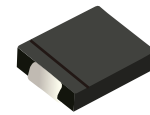


## FEATURES

- | Glass Passivated Chip Junction
- | Ideal For Automated Placement
- | High Surge Current Capability
- | Super fast reverse recovery time



DO-214AB(SMC)



Schematic Symbol

## APPLICATIONS

- | For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS AND CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	US5A	US5B	US5D	US5F	US5G	US5J	US5K	US5M	Unit	
Marking		US5A	US5B	US5D	US5F	US5G	US5J	US5K	US5M		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	300	400	600	800	1000	V	
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	210	280	420	560	700		
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	300	400	600	800	1000		
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)	I <sub>O</sub>	5.0									A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	150									
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>J</sub> =25°C		300									
Maximum instantaneous forward voltage I <sub>FM</sub> =5.0A	V <sub>F</sub>	1.0			1.3		1.7			V	
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5									μA
		100									
Typical junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C <sub>J</sub>	72			46		52			pF	
Maximum reverse recovery time I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A	t <sub>rr</sub>	50					75				ns
Current squared time @1ms ≤ t ≤ 8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t	94									A <sup>2</sup> s
Typical Thermal Resistance <sup>(1)</sup>	R <sub>θJ-A</sub>	48									°C/W
	R <sub>θJ-L</sub>	15									
	R <sub>θJ-C</sub>	12									
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150									°C

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas

# CHARACTERISTIC CURVES

Fig. 1- I<sub>o</sub>-TL Curve

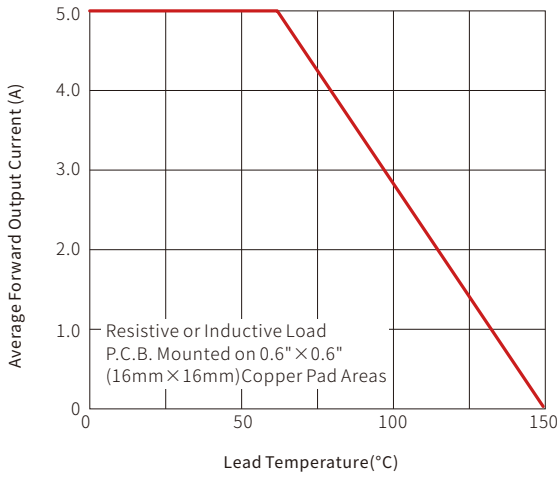


Fig. 2-Forward Surge Current Capability

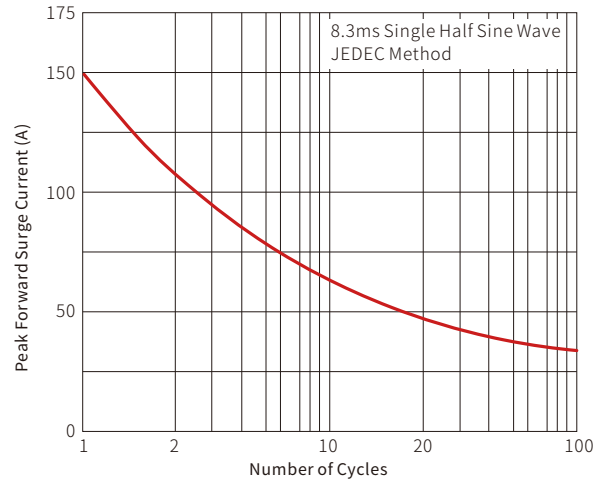


Fig. 3-Typical Forward Voltage

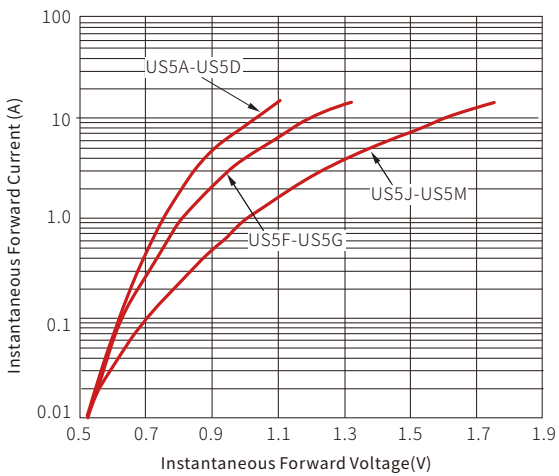
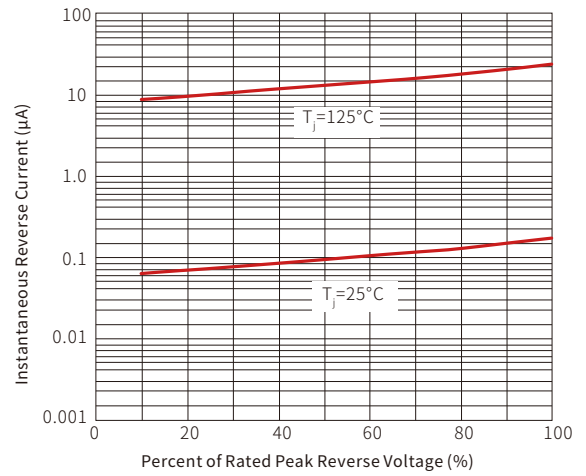
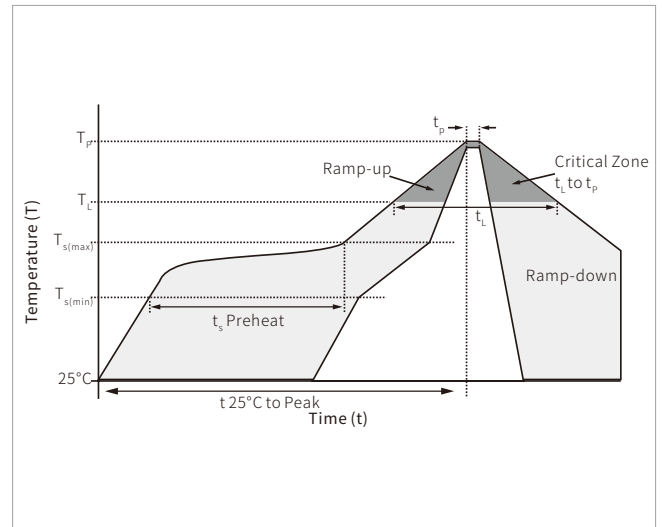


Fig. 4-Typical Reverse Characteristics

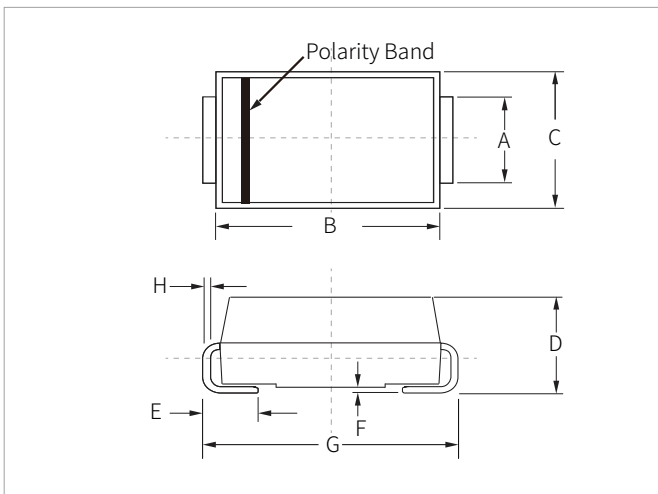


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

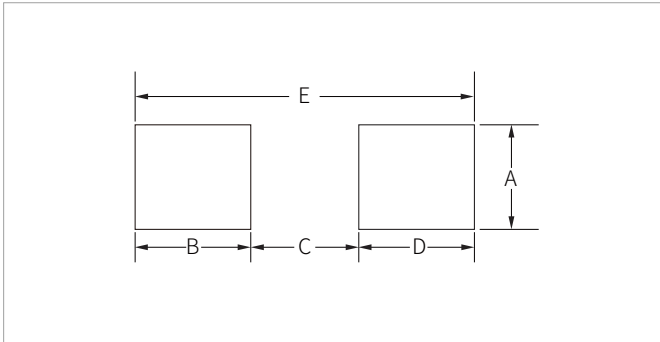


## DO-214AB(SMC) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.20	0.110	0.126
B	6.60	7.20	0.260	0.283
C	5.70	6.10	0.224	0.240
D	2.15	2.75	0.085	0.108
E	1.00	1.60	0.039	0.063
F	0.02	0.20	0.000	0.008
G	7.60	8.00	0.299	0.315
H	0.15	0.30	0.006	0.012

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	-	0.129	-
B	2.40	-	0.094	-
C	-	4.20	-	0.165
D	2.40	-	0.094	-
E	8.20REF		0.323REF	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
US5A-US5M	DO-214AB(SMC)	3000PCS	13"

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