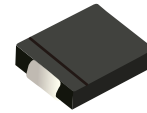


## FEATURES

- | Ultrafast reverse recovery time
- | Low leakage current
- | Low switching losses, high efficiency
- | High forward surge capability



DO-214AB(SMC)



Schematic Symbol

## APPLICATIONS

- | For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer 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	ES 3AC	ES 3BC	ES 3CC	ES 3DC	ES 3FC	ES 3GC	ES 3HC	ES 3JC	ES 3KC	Unit	
Marking		ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3H	ES3J	ES3K		
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	800	V	
Reverse Voltage, Total RMS Value	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	560		
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	800		
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)	I <sub>O</sub>						3.0					A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave, 1 Cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>						100					A
Forward Surge Current (Non-repetitive) @1ms, Square Wave, 1 Cycle, T <sub>J</sub> =25°C							200					
Maximum Instantaneous Forward Voltage I <sub>FM</sub> =3.0A	V <sub>F</sub>	0.95			1.3		1.7		1.85		V	
Maximum DC Reverse Current at Rated DC Blocking Voltage	I <sub>R</sub>						5					μA
							100					
Maximum Reverse Recovery Time I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>FF</sub> =0.25A	T <sub>rr</sub>						35					ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage Of 4.0 V.D.C	C <sub>J</sub>	60			35		29		21		pF	
Current Squared Time @1ms ≤ t ≤ 8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t						41.5					A <sup>2</sup> s
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>						-55 to +150					°C

## THERMAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	ES 3AC	ES 3BC	ES 3CC	ES 3DC	ES 3FC	ES 3GC	ES 3HC	ES 3JC	ES 3KC	Unit	
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	50										$^{\circ}\text{C}/\text{W}$
	$R_{\theta J-L}^{(1)}$	16										
	$R_{\theta J-C}^{(1)}$	12										

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-Io - TL Curve

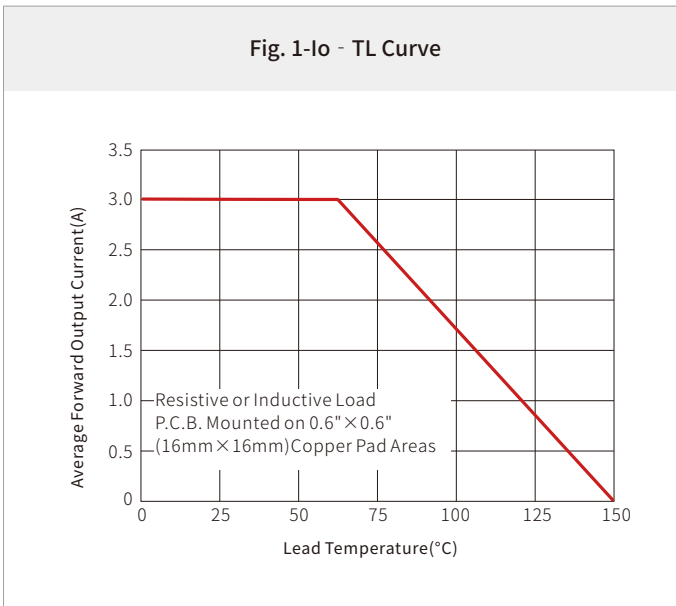
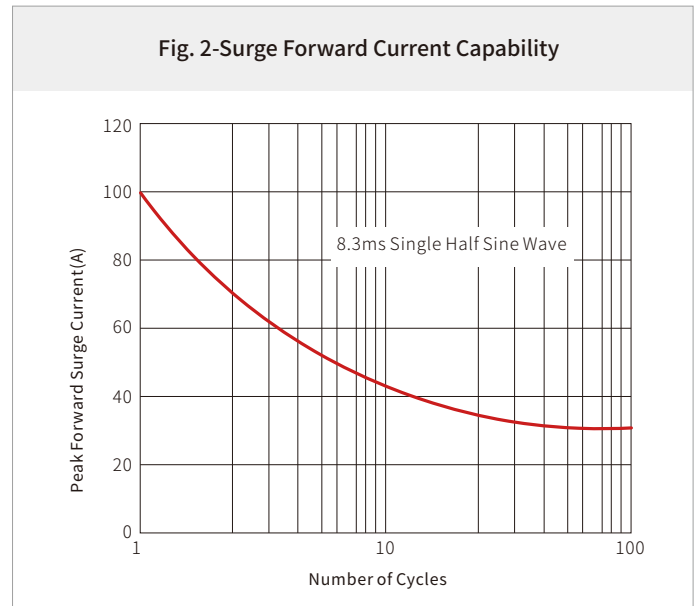
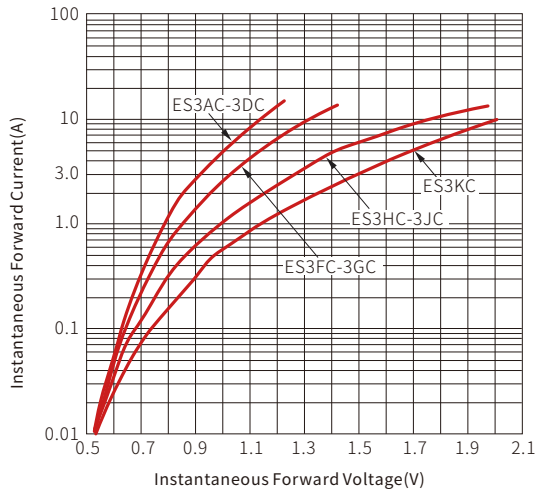
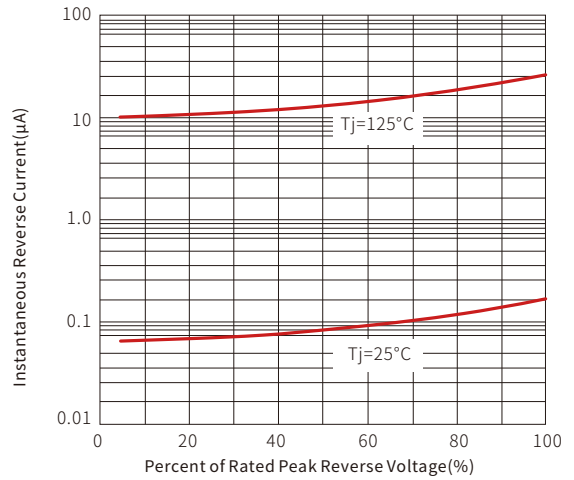


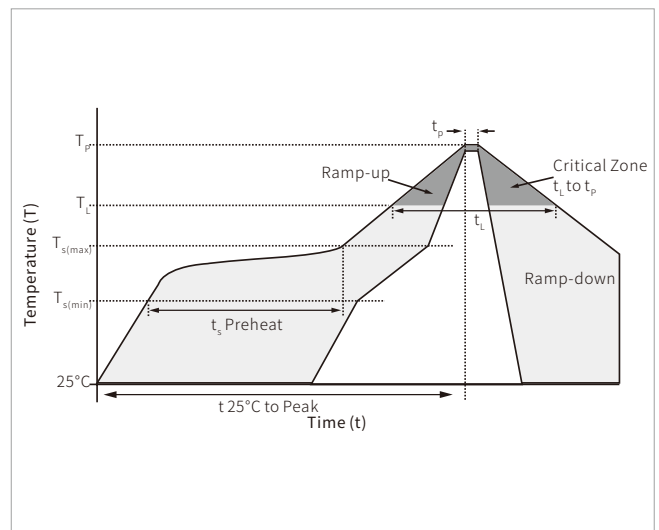
Fig. 2-Surge Forward Current Capability



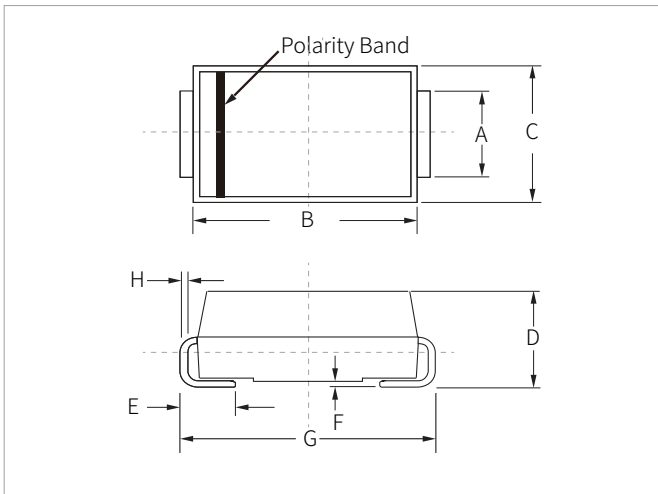
**Fig. 3-Typical Forward Voltage**

**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

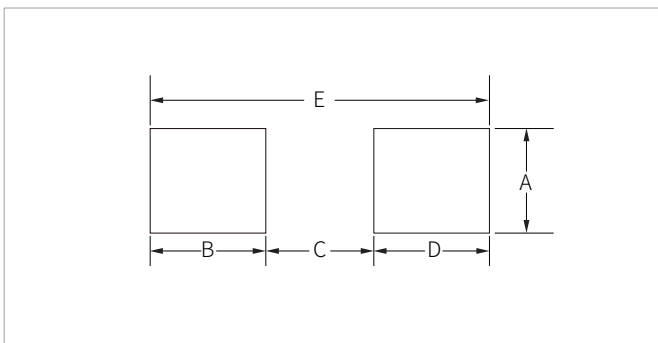


## DO-214AB(SMC) PACKAGE INFORMATION



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
ES3AC-ES3KC	DO-214AB(SMC)	3000PCS	13"

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