

## FEATURES

- | Glass passivated chip junction
- | Ideal for automated placement
- | Low forward voltage drop
- | Meet AEC-Q101 Requirements



DO-214AC(SMA)



Schematic Symbol

## MECHANICAL DATA

- | Case: SMA Molded plastic
- | Epoxy: UL 94V-0 rate flame retardant

## 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)

Symbol	Parameter	M1Q	M2Q	M3Q	M4Q	M5Q	M6Q	M7Q	Unit
	Marking	M1	M2	M3	M4	M5	M6	M7	
V <sub>RRM</sub>	Maximum repetitive peak reverse voltage	50	100	200	400	600	800	1000	V
V <sub>RMS</sub>	Maximum RMS voltage	35	70	140	280	420	560	700	
V <sub>DC</sub>	Maximum DC blocking voltage	50	100	200	400	600	800	1000	
I <sub>F(AV)</sub>	Maximum average forward rectified current				1.0				A
I <sub>FSM</sub>	Non-repetitive peak forward surge current 8.3 ms singlehalf sine-wave				30				
V <sub>F</sub>	Maximum forward voltage I <sub>F</sub> =1A				1.1				V
I <sub>R</sub>	Maximum reverse current @ rated V <sub>R</sub>				5				μA
					50				
t <sub>rr</sub>	Typical reverse recovery time (Note 2)				2.0				μs
C <sub>J</sub>	Typical junction capacitance (Note 3)				12				pF
E <sub>RSM</sub>	Non-repetitive peak reverse avalanche energy at 25°C, I <sub>AS</sub> =1A, L=10mH				5				mJ
R <sub>θJL</sub>	Typical thermal resistance				27			30	°C/W
R <sub>θJA</sub>	Typical thermal resistance				75			85	°C/W
T <sub>J</sub>	Operating junction temperature range				-55~+150				°C
T <sub>STG</sub>	Storage temperature range				-55~+150				°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

 Note 2: Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

# CHARACTERISTIC CURVES

Fig. 1- Forward Current Derating Curve

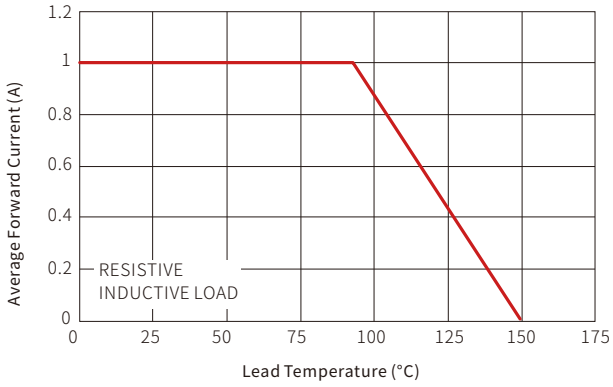


Fig. 2-Typical Reverse Characteristics

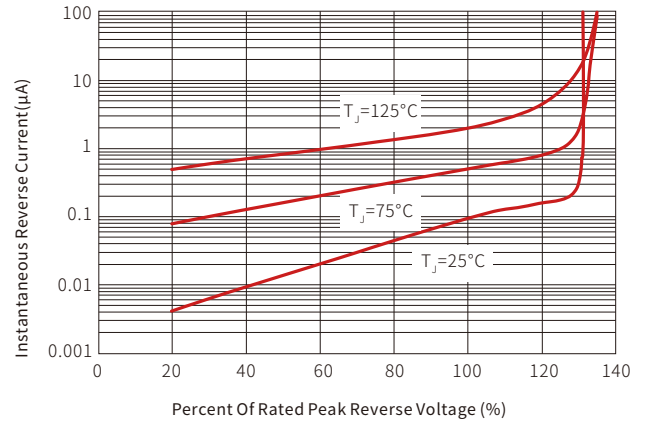


Fig. 3-Maximum Non-repetitive Forward Surge Current

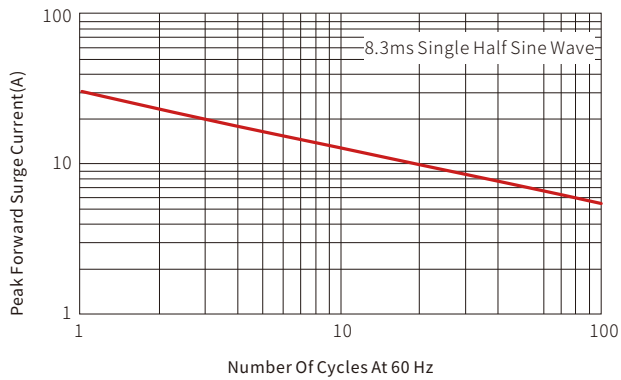
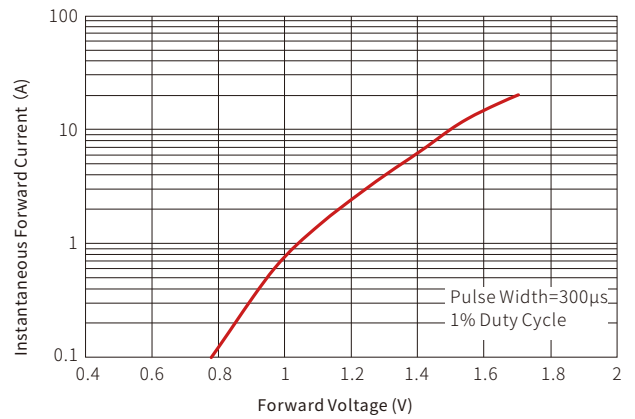
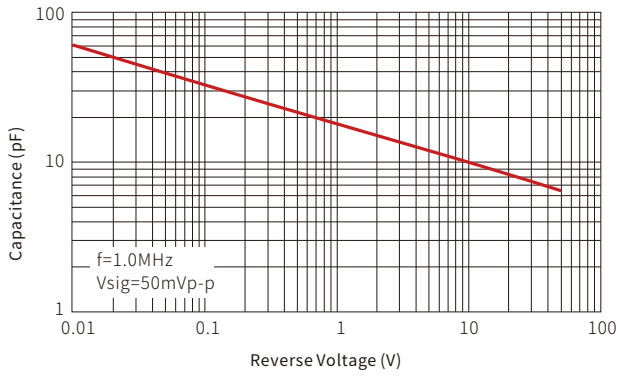


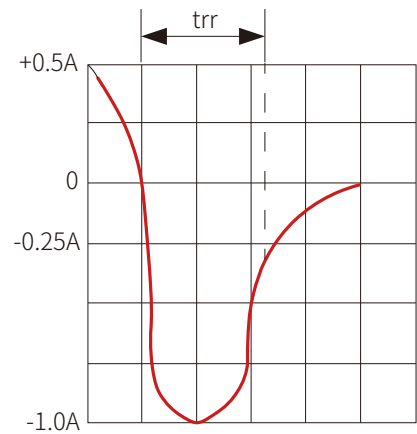
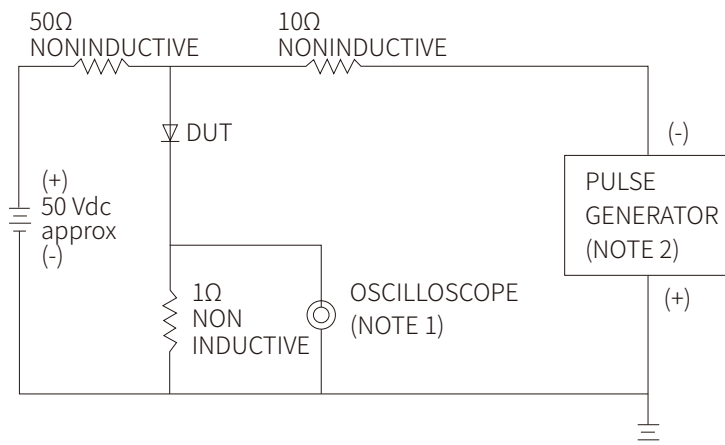
Fig. 4-Typical Forward Characteristics



**Fig. 5-Typical Junction Capacitance**



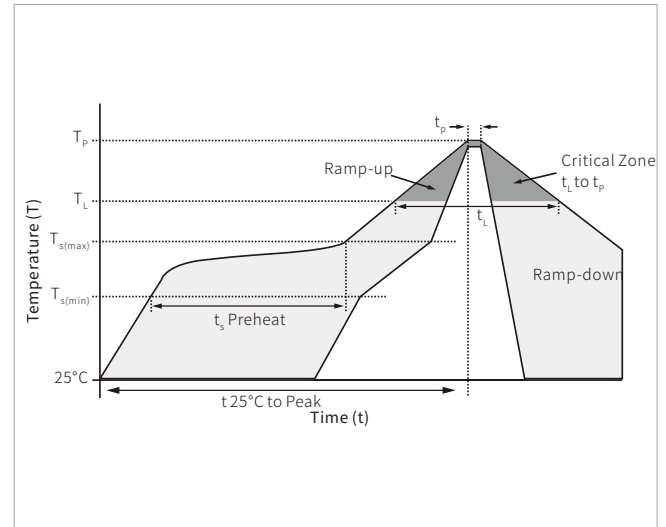
**Fig. 6-Reverse Recovery Time Characteristic And Test Circuit Diagram**



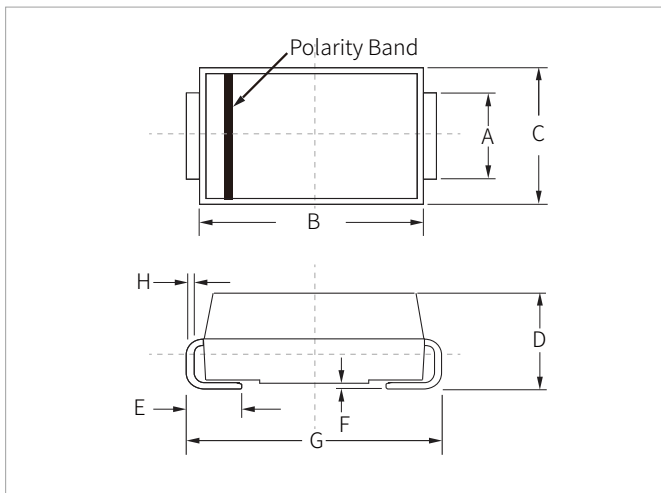
NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF  
2. Rise time = 10 ns max., Source Impedance = 50 ohms

## 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

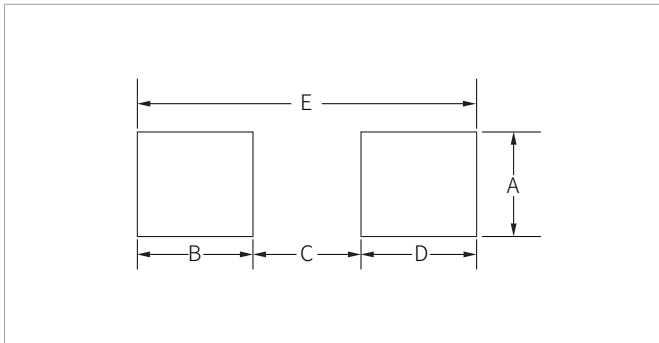


## DO-214AC(SMA) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.20	1.60	0.047	0.063
B	4.20	4.60	0.165	0.181
C	2.40	2.80	0.094	0.110
D	2.00	2.40	0.079	0.094
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	4.85	5.25	0.191	0.207
H	0.15	0.30	0.006	0.012

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.63	-	0.064	-
B	1.45	-	0.057	-
C	-	2.80	-	0.090
D	1.45	-	0.057	-
E	5.28REF		0.208REF	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
M1Q-M7Q	DO-214AC(SMA)	7500PCS	13"

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