

## FEATURES

- | Ideal For Automated Placement
- | Glass passivated chip junction
- | High Forward Surge Capability
- | Meet AEC-Q101 Requirements



DO-214AC(SMA)



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	US 1AQ	US 1BQ	US 1DQ	US 1FQ	US 1GQ	US 1JQ	US 1KQ	US 1MQ	Unit
Marking			US 1A	US 1B	US 1D	US 1F	US 1G	US 1J	US 1K	US 1M	
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>	1.0								A
Forward Surge Current (Non-Repetitive) @60Hz Half-sine Wave,1 cycle, Tj=25°C		I <sub>FSM</sub>	30								
Forward Surge Current (Non-Repetitive) @1ms, square Wave, 1 cycle, Tj=25°C			60								
Maximum Instantaneous Forward Voltage I <sub>FM</sub> =1.0A		V <sub>F</sub>	1.0			1.3		1.7		V	
Maximum DC Reverse Current at Rated DC Blocking Voltage	T <sub>J</sub> =25°C	I <sub>R</sub>	5								μA
	T <sub>J</sub> =125°C		100								
Typical Junction Capacitance Measured at 1MHz and Applied Reverse Voltage Of 4.0 V.D.C		C <sub>J</sub>	15			10		7		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 Tj=25°C		I²t	3.735								A²s
Typical Thermal Resistance <sup>(1)</sup>		R <sub>θJ-A</sub>	70								°C/W
		R <sub>θJ-L</sub>	25								
		R <sub>θJ-C</sub>	20								
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 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

# CHARACTERISTIC CURVES

Fig. 1-  $I_o$ -TL Curve

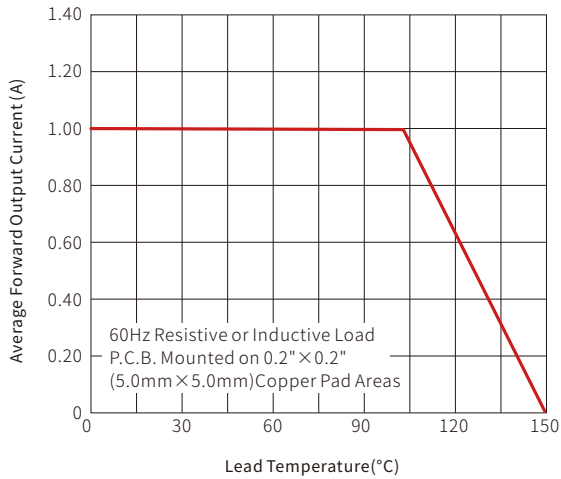


Fig. 2-Forward Surge Current Capability

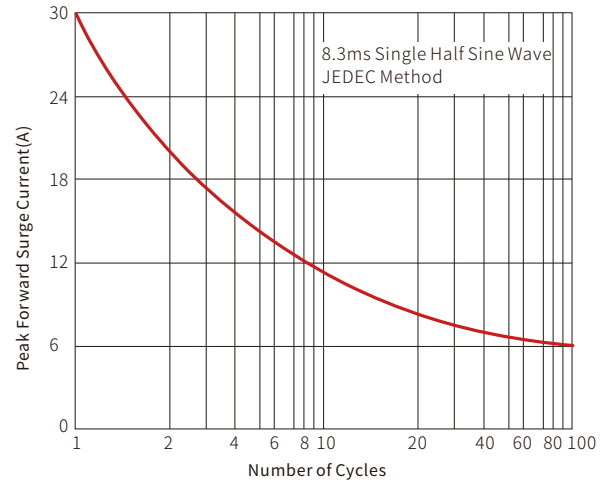


Fig. 3-Typical Forward Voltage

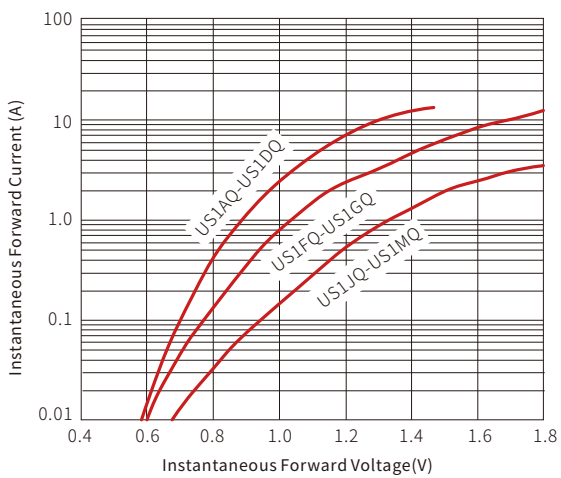
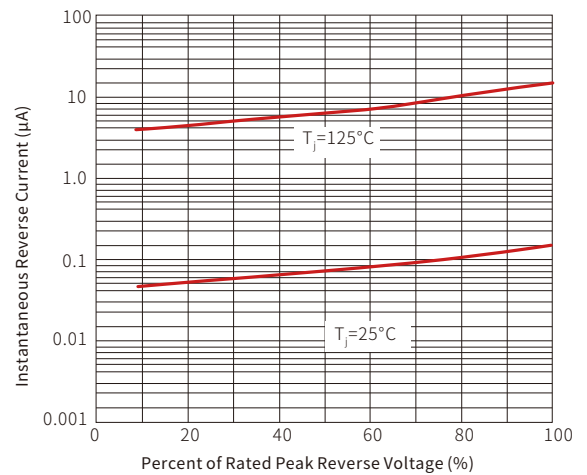
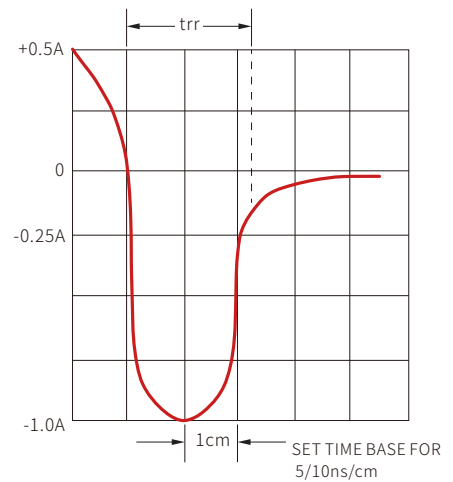
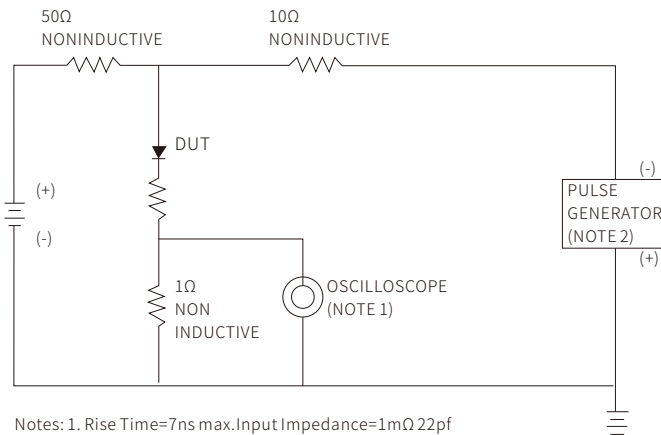


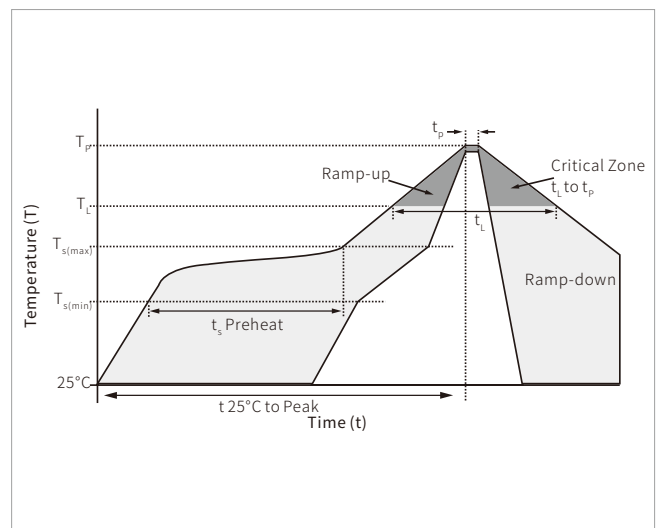
Fig. 4-Typical Reverse Characteristics



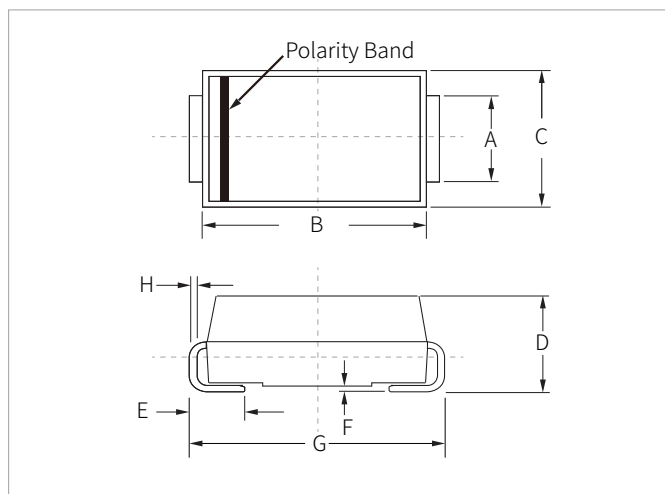
**Fig. 5-Diagram of circuit and Testing wave form of reverse recovery time**


## 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

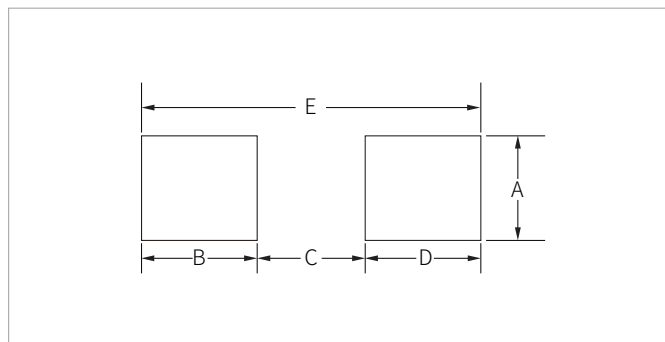


## DO-214AC(SMA) PACKAGE INFORMATION



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
US1AQ-US1MQ	DO-214AC(SMA)	5000PCS	13"

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