



## RS1A THRU RS1M

VOLTAGE RANGE	50 to 1000 Volts
CURRENT	1.0 Ampere



## Features

- Fast recovery glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260°C/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC



DO-214AC (SMA)

## Mechanical Data

- Case: JEDEC DO-214AC mold plastic Body over glass passivated chip
- Terminals: Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.0024 ounce, 0.068 gram

## Maximum Ratings and Electrical Characteristics

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

TYPE NUMBER	SYMBOL	RS 1A	RS 1B	RS 1D	RS 1G	RS 1J	RS 1K	RS 1M	UNITS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current $T_l=125^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30							Amps
Maximum Instantaneous Forward Voltage @ 1.0A	$V_F$	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	100							
Maximum Reverse Recovery Time <sup>(Note 3)</sup> $T_J=25^\circ\text{C}$	$T_{RR}$	150			250	500		nS	
Typical Junction Capacitance <sup>(Note 1)</sup>	$C_J$	15							pF
Typical Thermal Resistance <sup>(Note 2)</sup>	$R_{\theta JA}$	60							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-55 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

## Notes:

1. Thermal resistance from Junction to ambient and from junction to lead mounted on PCB. with 0.2×0.2"(5.0 × 5.0mm) copper pad areas.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V
3. Reverse Recovery Test Conditions:  $I_f=0.5\text{mA}$ ,  $I_r=1.0\text{mA}$ ,  $I_{rr}=0.25\text{A}$



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Ratings and Characteristic Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

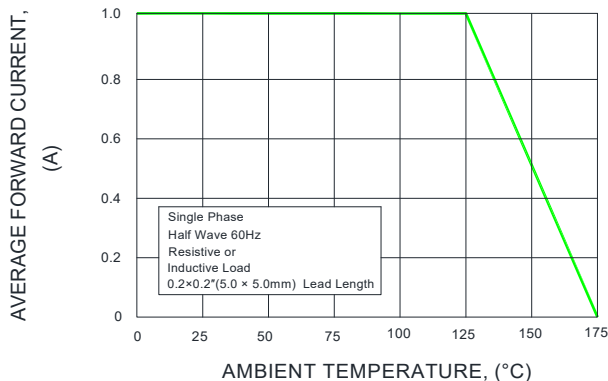


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

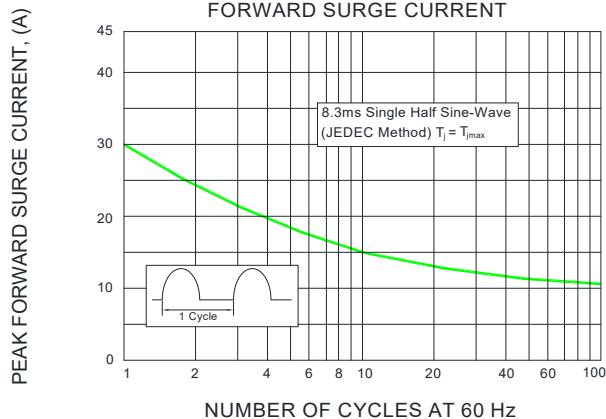


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

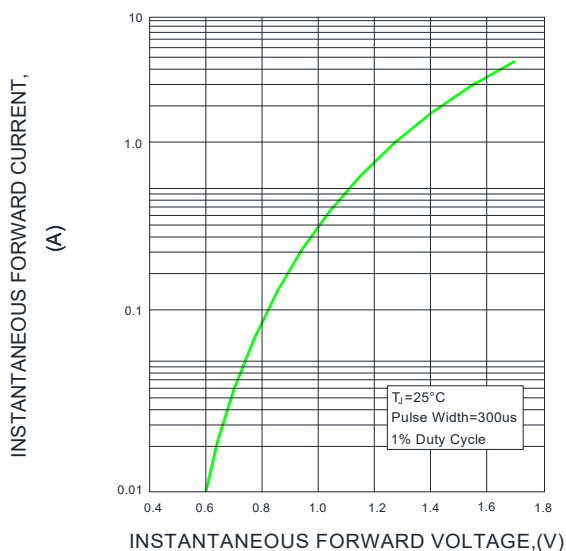


FIG.4-TYPICAL REVERSE CHARACTERISTICS

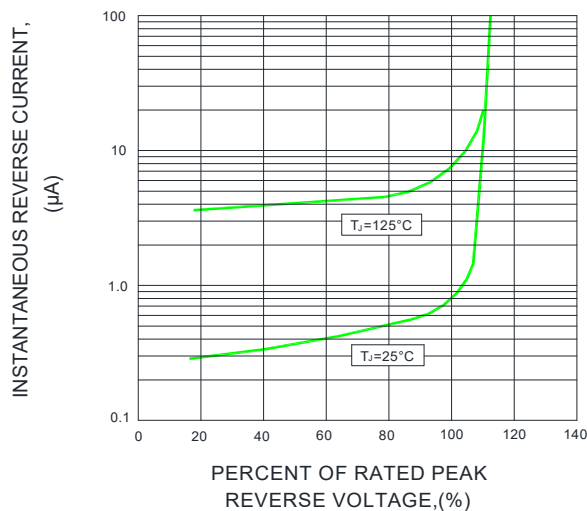


FIG.5-TYPICAL JUNCTION CAPACITANCE

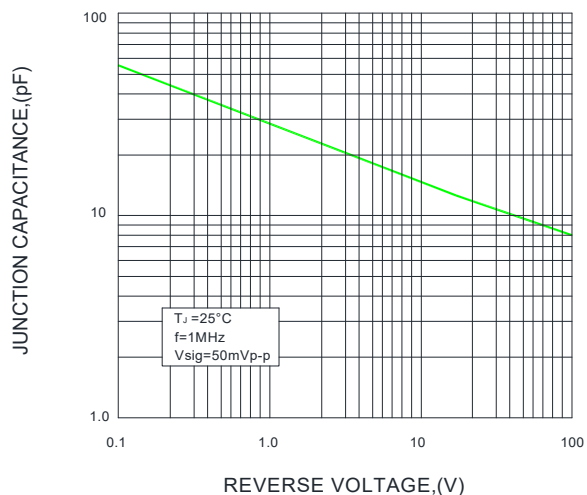
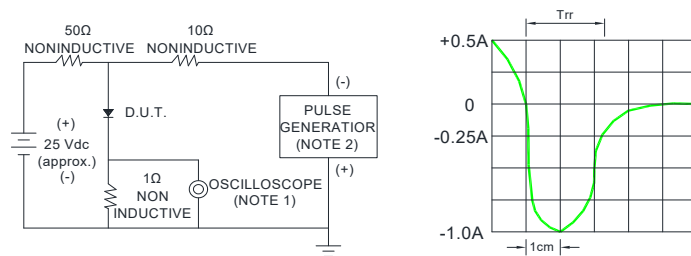


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



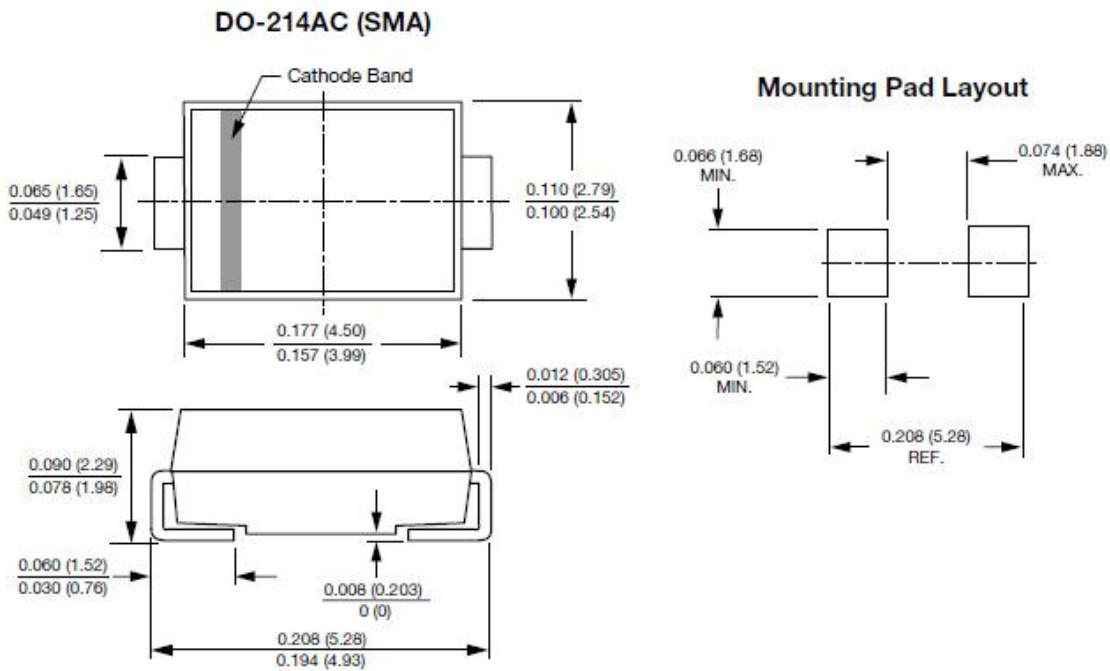
NOTES : 1. Rise Time = 7ns max. Input Impedance = 1 magohm. 22pF  
2. Rise time = 10ns max. Source Impedance = 50 ohms  
SET TIME BASE FOR 50/100ns/cm



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Package Outline Dimensions in inches (millimeters)

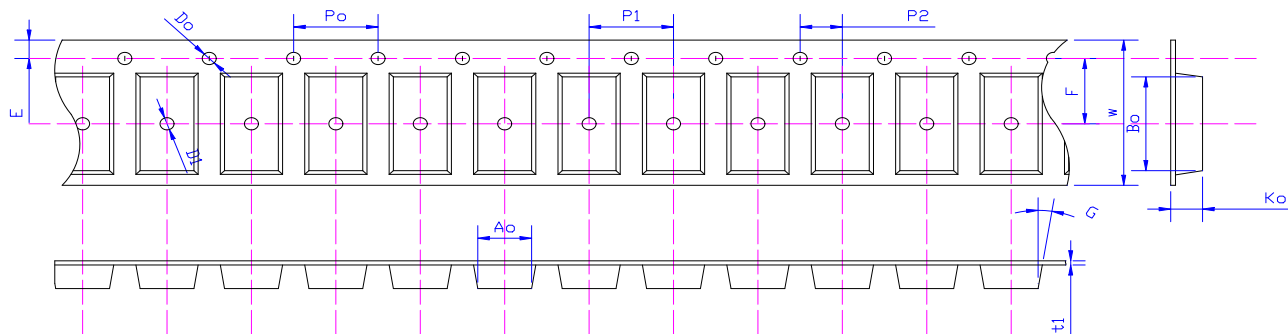




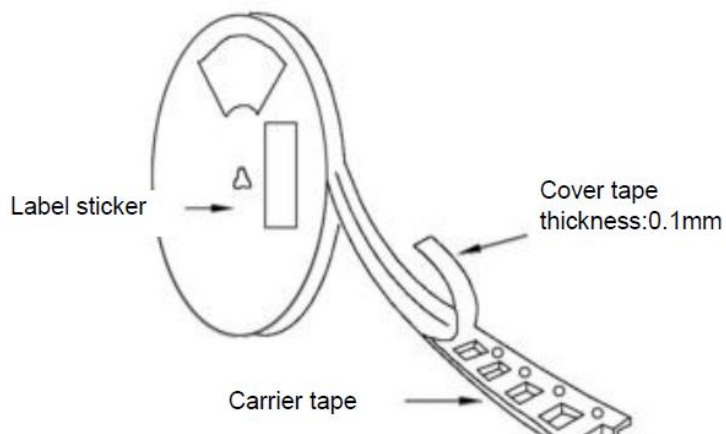
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Package Reel Information



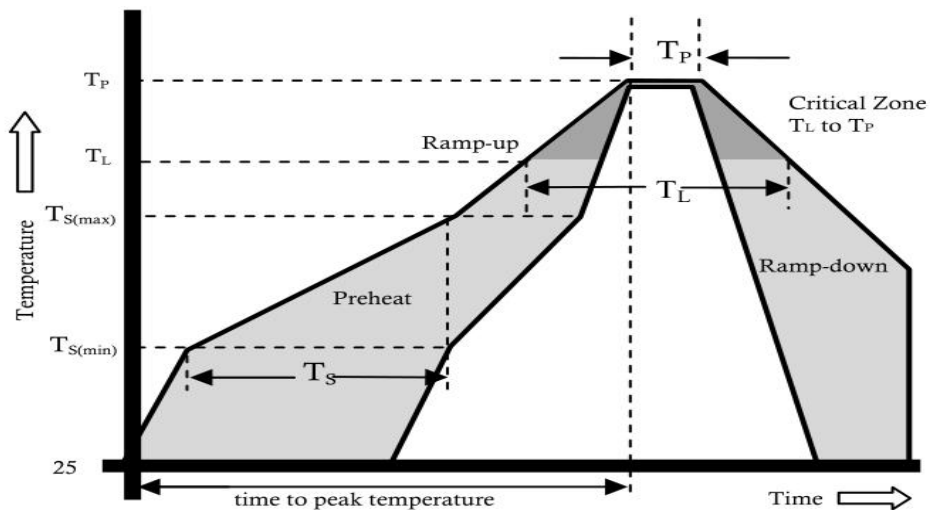
Specifications	Ao	Bo	Ko	Po	W	t1
SMA	2.55±0.10	5.10±0.10	2.36±0.10	4.00±0.1	12.0±0.05	0.23±0.02



DEVICE TYPE	Tape Width	13"Reel			07"Reel			
		Q'TY/REEL(pcs)	BOX/CARTOO N	Q'TY/CARTON (pcs)	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOO N	Q'TY/CARTON (pcs)
SMA	12mm	5000	8	80000	1500	2	16	48000



Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
$T_S$ (max) to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature ( $T_L$ )(Liquidus)	+217°C
	Temperature ( $T_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5)°C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C



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