



RS3A THRU RS3M

VOLTAGE RANGE

50 to 1000 Volts

CURRENT

3.0 Ampere

Features



- Plastic package has underwrites laboratory flammability Classification 94V-0
- Low profile surface mount package
- Built-in strain relief
- Fast switching for high efficiency
- Glass passivated chip junction
- High temperature soldering 250°C/10 second at terminals



DO-214AB (SMC)

Mechanical Data

- Case: JEDED DO-214AB molded plastic over glass passivated chip
- Terminals: Solder plated, Solderable per MIL-STD-750, method 2026
- Polarity: Laser band denote cathode band
- Weight: 0.007 ounce, 0.21 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 3A	RS 3B	RS 3D	RS 3G	RS 3J	RS 3K	RS 3M	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 at $T_L = 100^\circ\text{C}$	$I_{(AV)}$	3.0							Amp
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	80							Amps
Maximum Instantaneous Forward Voltage @ 3.0A	V_F	1.3							Volts
I^2t Rating for fusing ($1\text{ms} < t < 8.3\text{ms}$)	I^2t	26.8							I^2t
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							μA
	$T_A = 125^\circ\text{C}$	100							
Typical Reverse Recovery Time ^(Note 3)	T_{RR}	150				250	500		nS
Typical Junction Capacitance ^(Note 1)	C_j	20				17			pF
Typical Thermal Resistance ^(Note 2)	$R_{\theta JA}$	47							$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	13							
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. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance from Junction to Ambient at. $0.3 \times 0.3'' (8.0 \times 8.0\text{mm})$ copper pad areas.
3. Reverse Recovery Test Conditions: $I_f = 0.5\text{mA}$, $I_r = 1.0\text{mA}$, $I_{rr} = 0.25\text{A}$.



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

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

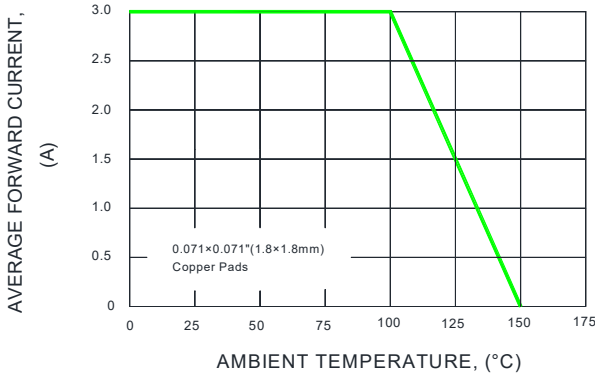


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

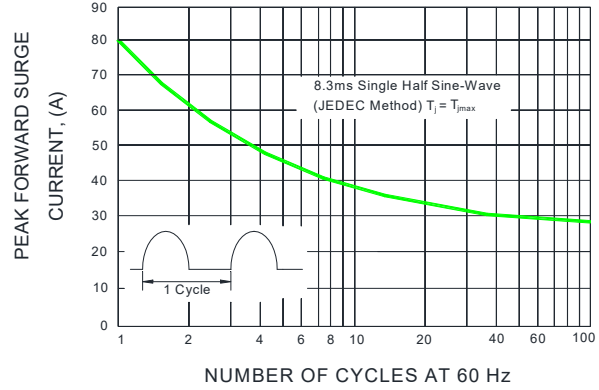


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

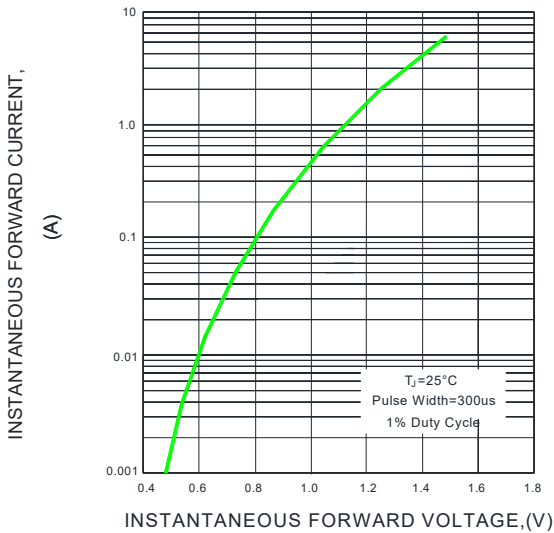


FIG.4-TYPICAL REVERSE CHARACTERISTICS

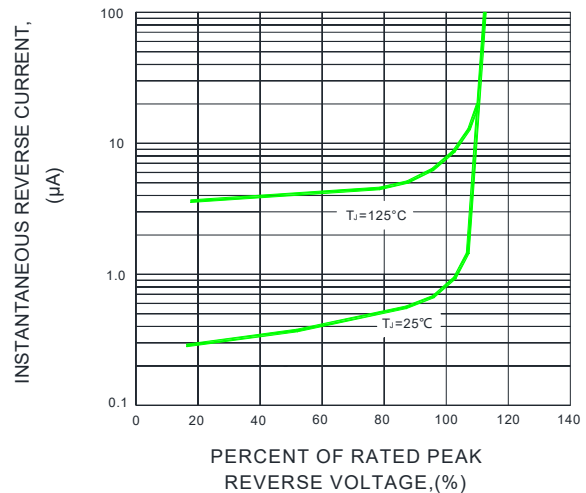


FIG.5-TYPICAL JUNCTION CAPACITANCE

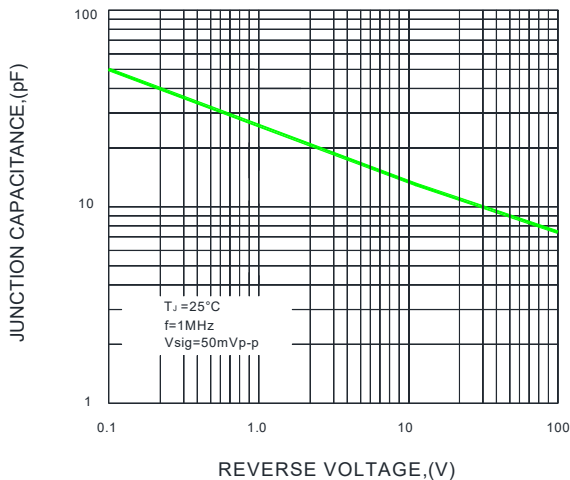
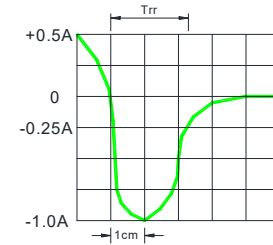
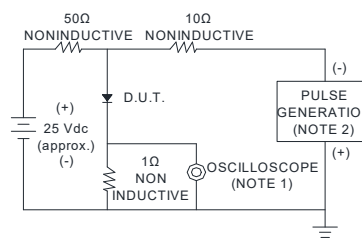


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



- 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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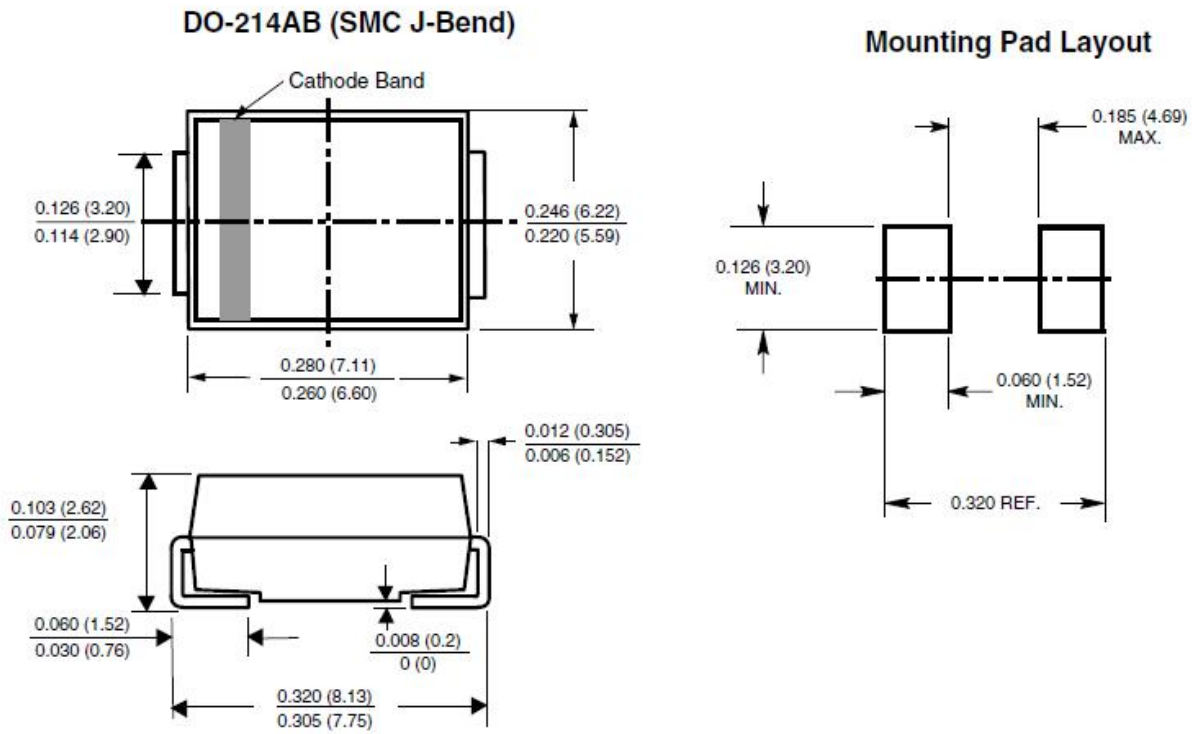
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Package Outline Dimensions in inches (millimeters)





SURFACE MOUNT FAST SWITCHING RECTIFIER

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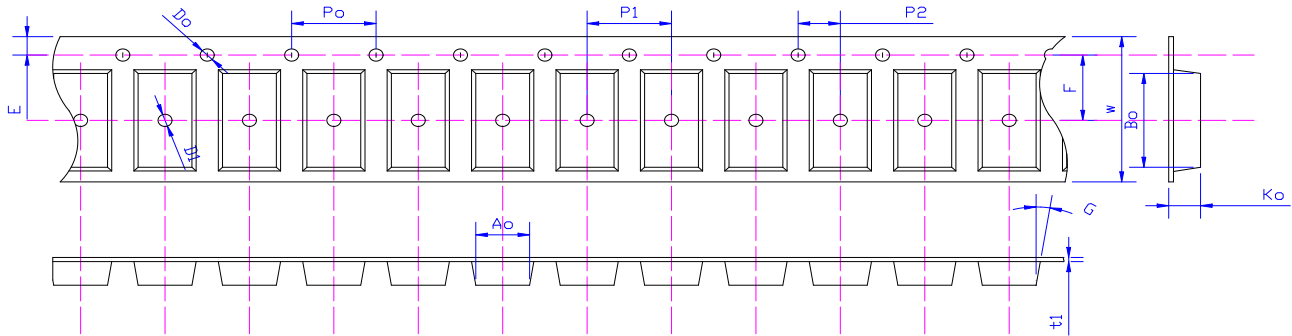
VOLTAGE RANGE

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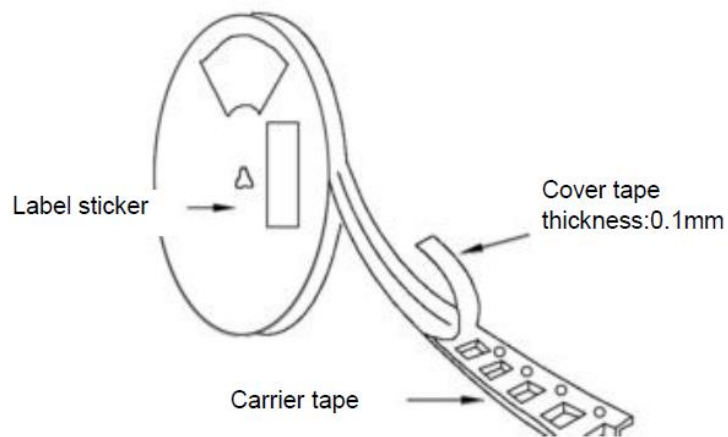
CURRENT

3.0 Ampere

Package Reel Information



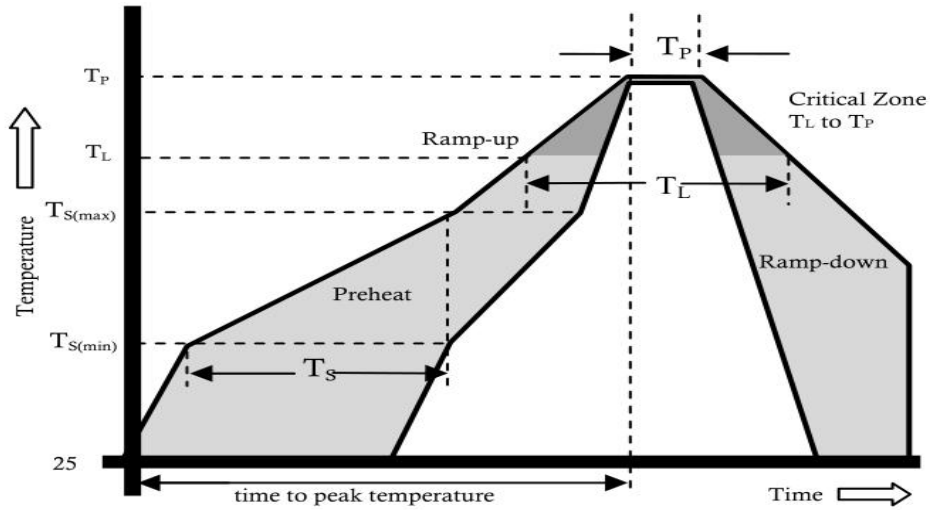
Specifications	Ao	Bo	Ko	Po	W	t1
SMC	6.05±0.10	8.31±0.10	2.54±0.10	4.00±0.1	16.0±0.30	0.30±0.02



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)
SMC	16mm	3000	8	48000	800	3	8	19200



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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Disclaimer

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