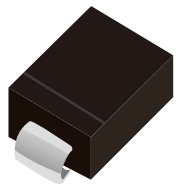
RS3AB-RS3MB

Ultra-Fast Recovery Rectifier Diode

FEATURES

- Ideal For Automated Placement
- Glass Passivated Chip Junction
- High Forward Surge Capability
- Fast Reverse Recovery Time



DO-214AA(SMB)

Schematic Symbol

MECHANICAL DATA

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	RS3AB	RS3BB	RS3DB	RS3GB	RS3JB	RS3KB	RS3MB	Unit
Marking		RS3AB	RS3BB	RS3DB	RS3GB	RS3JB	RS3KB	RS3MB	
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	3.0							A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25°C	I_{FSM}	100							A
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C		200							
Maximum instantaneous forward voltage I_{FM}=3.0A	V_F	1.3							V
Maximum DC reverse current at rated DC blocking voltag, T_J=25°C	I_R	5.0							μA
Maximum DC reverse current at rated DC blocking voltag, T_J=125°C		100							
Current squared time @1ms≤t≤8.3ms Tj=25°C	I^2t	41.5							A^2s
Maximum reverse recovery time I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	T_{rr}	150				250	500		ns
Typical junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C_J	40				30			pF
Typical Thermal Resistance	$R_{\theta JA(1)}$	60							°C/W
	$R_{\theta JL(1)}$	20							°C/W
	$R_{\theta JC(1)}$	18							°C/W
Operating junction and storage temperature range	T_J,T_{STG}	-55 to +150							°C

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

CHARACTERISTIC CURVES

FIG.1: Io-TL Curve

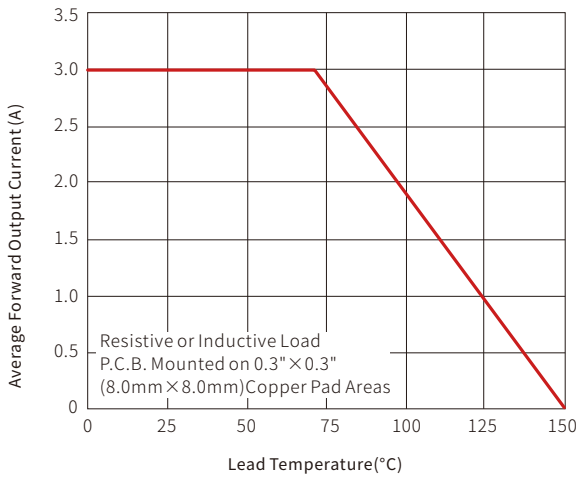


FIG.2: Forward Surge Current Capability

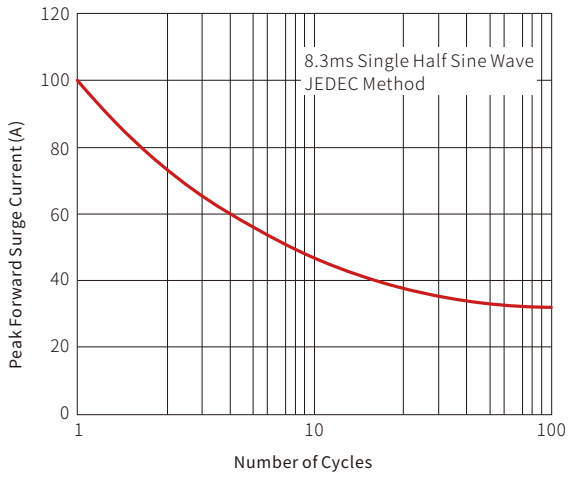


FIG.3: Typical Forward Voltage

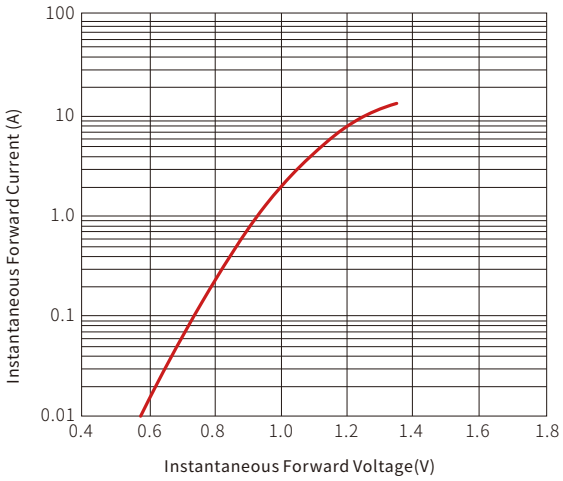


FIG.4: Typical Reverse Characteristics

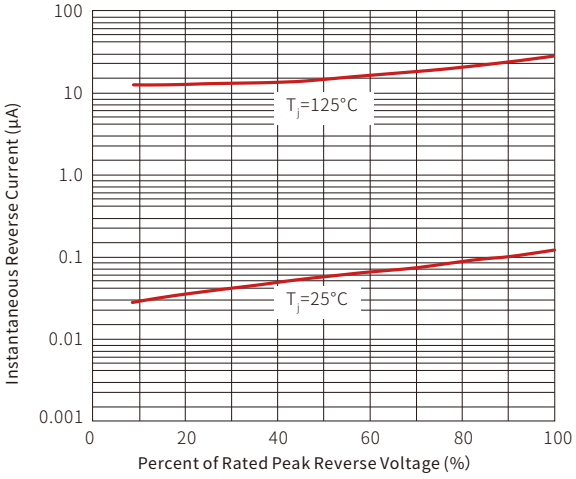
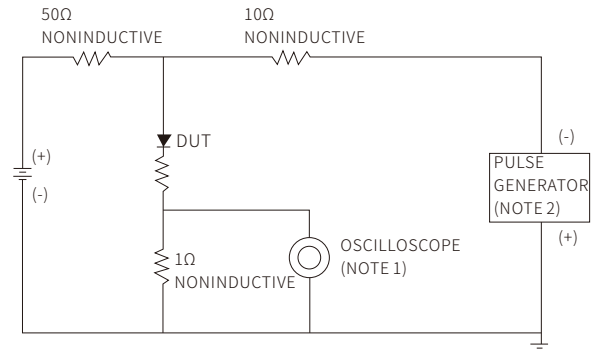
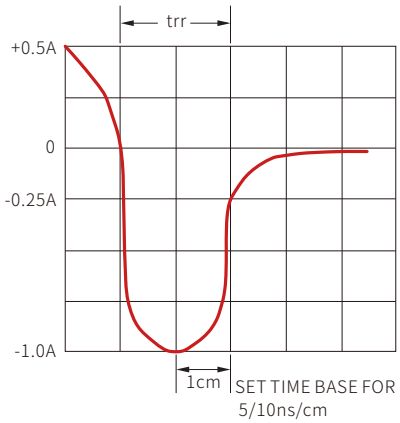


Fig. 5-Diagram of circuit and Testing wave form of reverse recovery time

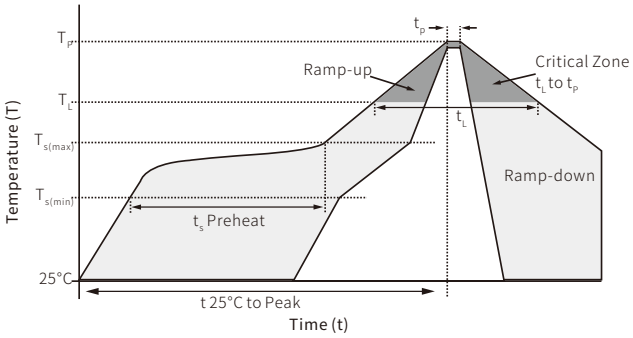


Notes: 1.Rise Time=7ns max .Inpot Impedance=1MΩ 22pf
2.Rise Time=10ns max.Sourse Impedance=50Ω

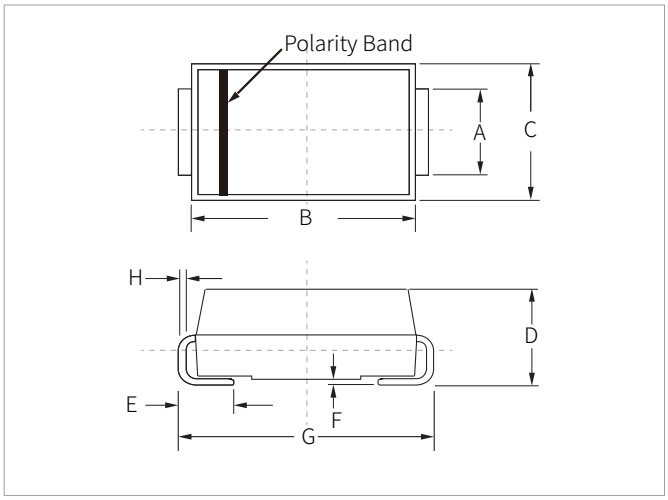


SOLDERING PARAMETERS

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

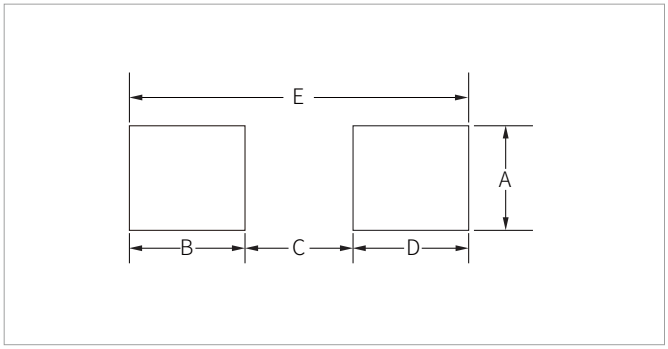


DO-214AA(SMB) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.80	2.20	0.071	0.087
B	4.30	4.70	0.170	0.185
C	3.40	3.90	0.134	0.153
D	2.15	2.75	0.085	0.108
E	1.00	1.50	0.039	0.059
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.200	0.216
H	0.15	0.30	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.010
D	1.45	-	0.057	-
E	5.60REF		0.220REF	

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
RS3AB-RS3MB	DO-214AA(SMB)	3000PCS	13"

Headquarters
No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

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To find your local partner within Semiware' s global website: www.semiware.com