

3A, 200V-1000V Fast Recovery Surface Mount Rectifier

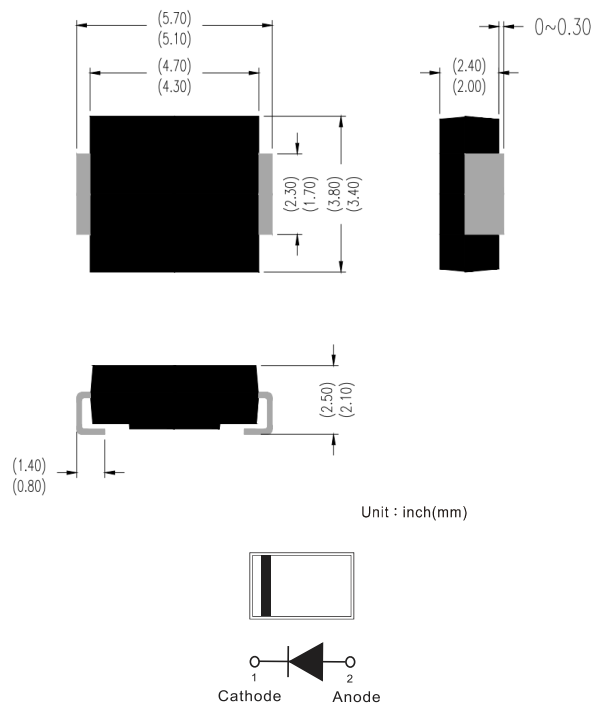
Features

- Glass passivated chip junction
- Ideal for automated placement
- Fast switching for high efficiency
- High surge current capability
- Comply with RoHS standard, halogen-free

Mechanical Data

- Case: SMB/DO-214AA
- Polarity: Indicated by cathode band
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position : Any

SMB/DO-214AA



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	RS3DB	RS3GB	RS3JB	RS3KB	RS3MB	Unit
Repetitive peak reverse voltage		V_{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	560	700	V
DC blocking voltage		V_{DC}	200	400	600	800	1000	V
Forward current		I_F	3					A
Surge peak forward current single half sine-wave superimposed on rated load per diode	8.3 ms at $T_A=25^\circ\text{C}$	I_{FSM}	80					A
	1.0 ms at $T_A=25^\circ\text{C}$		224					A
Junction temperature		T_J	-55 to +150					$^\circ\text{C}$
Storage temperature		T_{STG}	-55 to +150					$^\circ\text{C}$

Thermal Performance ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	TYP	Unit
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	78	$^\circ\text{C/W}$
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	26	$^\circ\text{C/W}$

Thermal Performance Note: Units mounted on PCB (10mm x 10mm Cu pad test board)

Electrical Specifications ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Conditions	Symbol	TYP	MAX	Unit
Forward voltage per diode ⁽¹⁾	RS3DB to RS3GB	I _F = 1.5A, T _J = 25°C	V _F	0.94	-	V
		I _F = 3A, T _J = 25°C		1.02	1.3	V
		I _F = 1.5A, T _J = 125°C		0.78	-	V
		I _F = 3A, T _J = 125°C		0.87	1.17	V
	RS3JB	I _F = 1.5A, T _J = 25°C	V _F	0.99	-	V
		I _F = 3A, T _J = 25°C		1.10	1.3	V
		I _F = 1.5A, T _J = 125°C		0.80	-	V
		I _F = 3A, T _J = 125°C		0.90	1.16	V
	RS3KB to RS3MB	I _F = 1.5A, T _J = 25°C	V _F	1.03	-	V
		I _F = 3A, T _J = 25°C		1.13	1.3	V
		I _F = 1.5A, T _J = 125°C		0.83	-	V
		I _F = 3A, T _J = 125°C		0.94	1.14	V
Reverse current @ rated V _R per diode ⁽²⁾		T _J = 25°C	I _R	-	5	µA
		T _J = 125°C		-	150	µA
Reverse recovery time	RS3DB to RS3GB	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	t _{rr}	-	150	ns
	RS3JB			-	250	ns
	RS3KB to RS3MB			-	500	ns
Junction capacitance per diode		1 MHz, V _R =4.0V	C _J	50	-	pF

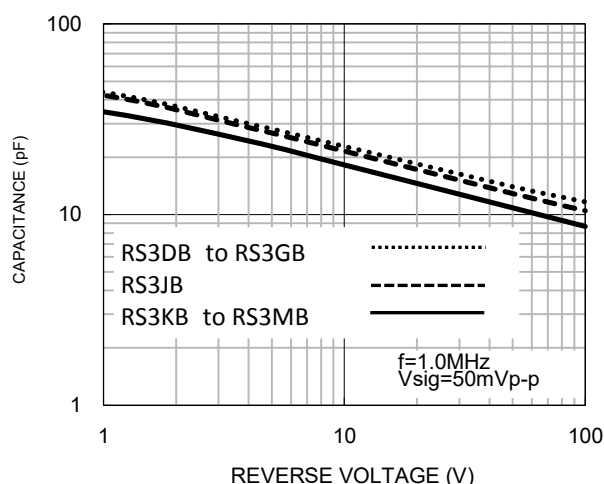
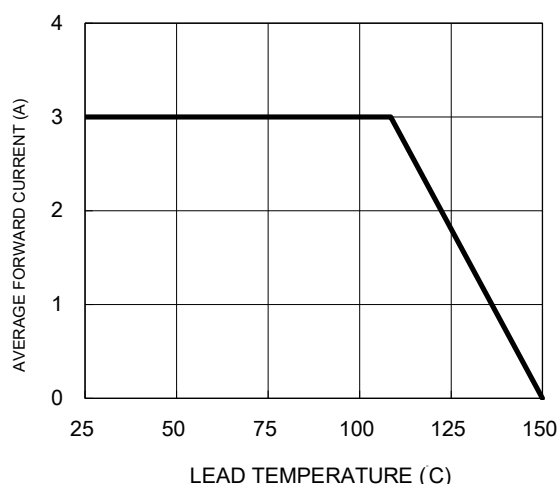
Notes:

(1) Pulse test with $PW=0.3\text{ ms}$

(2) Pulse test with $PW=30\text{ ms}$

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

Fig.1 Forward Current Derating Curve



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

Fig.3 Typical Reverse Characteristics

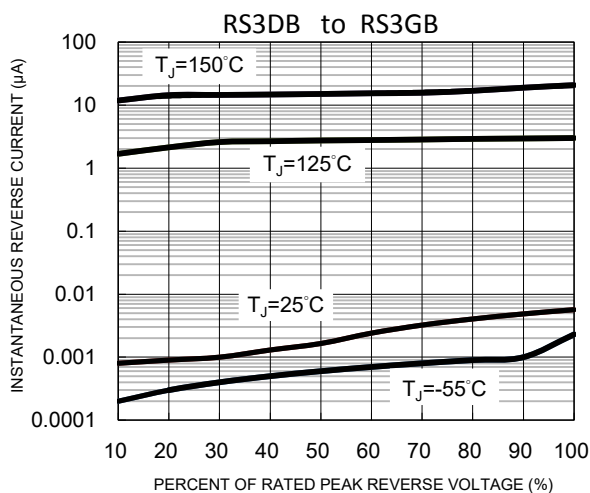


Fig.4 Typical Forward Characteristics

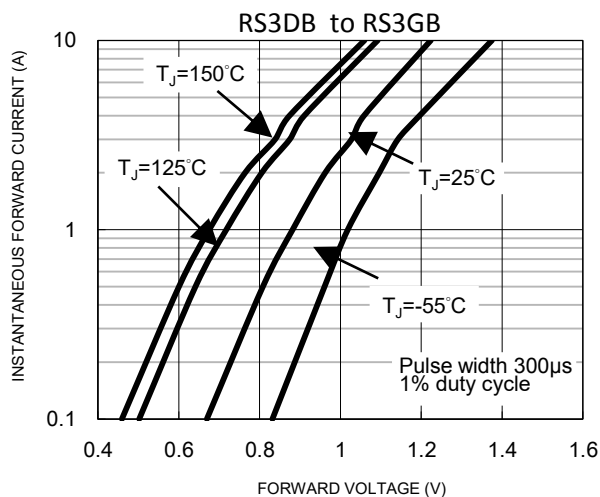


Fig.5 Typical Reverse Characteristics

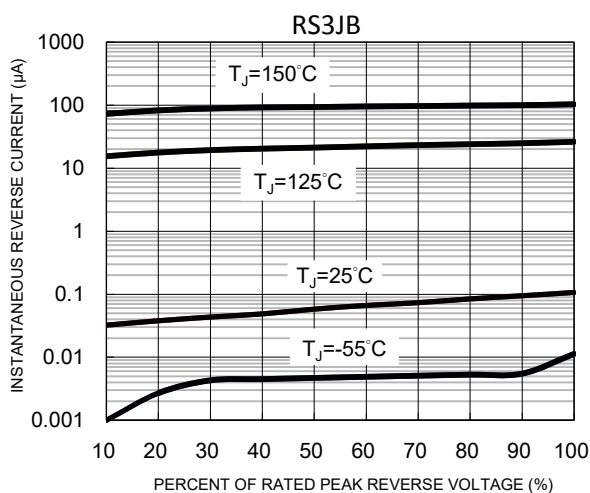


Fig.6 Typical Forward Characteristics

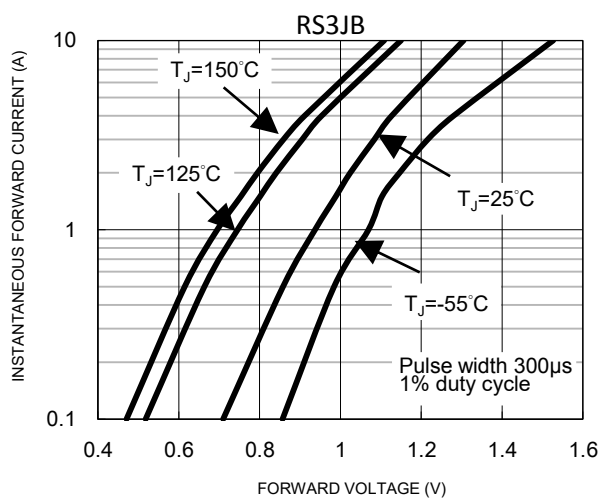


Fig.7 Typical Reverse Characteristics

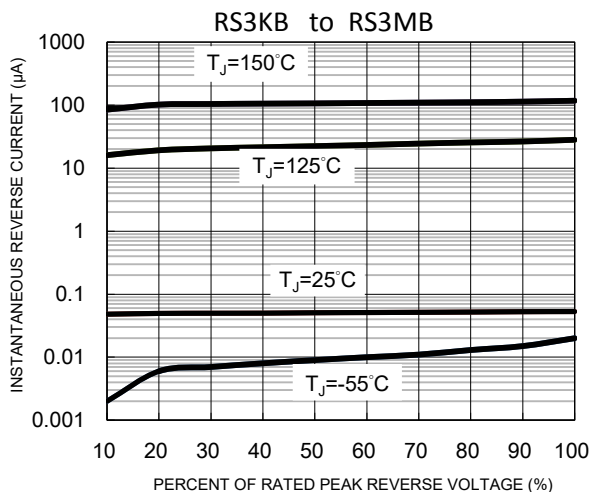


Fig.8 Typical Forward Characteristics

