

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

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

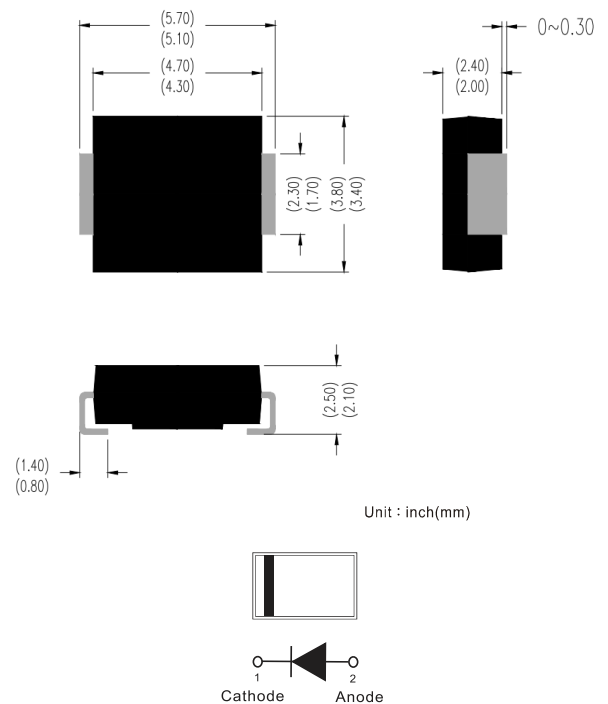
APPLICATIONS

- Switch Mode Power Supply
- Inverters and Converters
- Free Wheeling diodes

MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.09 g (approximately)

DO-214AA (SMB)



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 $T_A = 25^\circ\text{C}$	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			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	20	$^{\circ}C/W$
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	78	$^{\circ}C/W$
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	26	$^{\circ}C/W$

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

ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}C$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	RS3DB to RS3GB	$I_F = 1.5A, T_J = 25^{\circ}C$	V_F	0.94	-	V
		$I_F = 3A, T_J = 25^{\circ}C$		1.02	1.3	V
		$I_F = 1.5A, T_J = 125^{\circ}C$		0.78	-	V
		$I_F = 3A, T_J = 125^{\circ}C$		0.87	1.17	V
	RS3JB	$I_F = 1.5A, T_J = 25^{\circ}C$	V_F	0.99	-	V
		$I_F = 3A, T_J = 25^{\circ}C$		1.10	1.3	V
		$I_F = 1.5A, T_J = 125^{\circ}C$		0.80	-	V
		$I_F = 3A, T_J = 125^{\circ}C$		0.90	1.16	V
	RS3KB to RS3MB	$I_F = 1.5A, T_J = 25^{\circ}C$	V_F	1.03	-	V
		$I_F = 3A, T_J = 25^{\circ}C$		1.13	1.3	V
		$I_F = 1.5A, T_J = 125^{\circ}C$		0.83	-	V
		$I_F = 3A, T_J = 125^{\circ}C$		0.94	1.14	V
Reverse current @ rated V_R per diode ⁽²⁾		$T_J = 25^{\circ}C$	I_R	-	5	μA
		$T_J = 125^{\circ}C$		-	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 $PW=0.3$ ms

(2) Pulse test with $PW=30$ ms

CHARACTERISTICS CURVES ($T_A = 25^{\circ}C$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

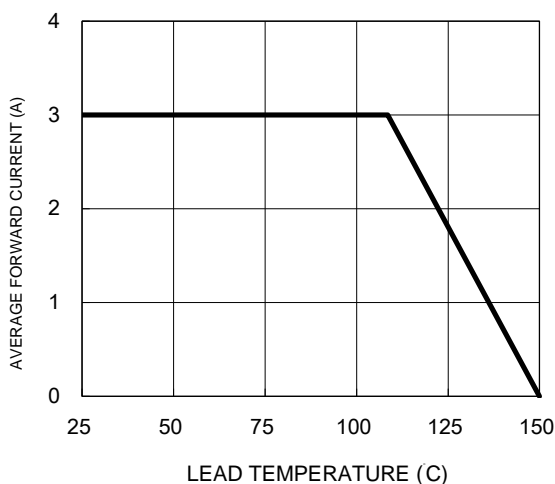
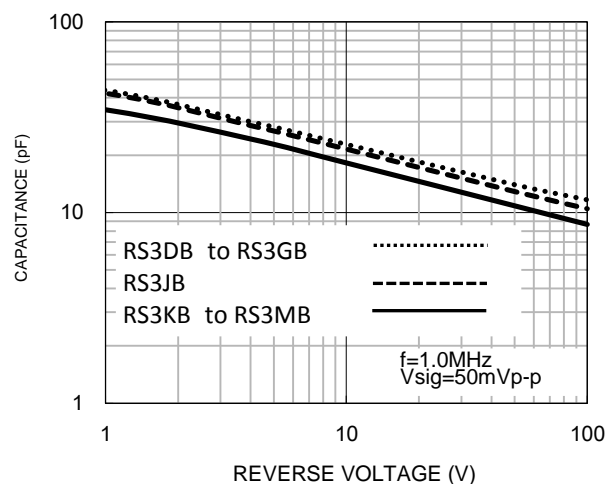


Fig.2 Typical Junction Capacitance



CHARACTERISTICS CURVES

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

Fig.3 Typical Reverse Characteristics

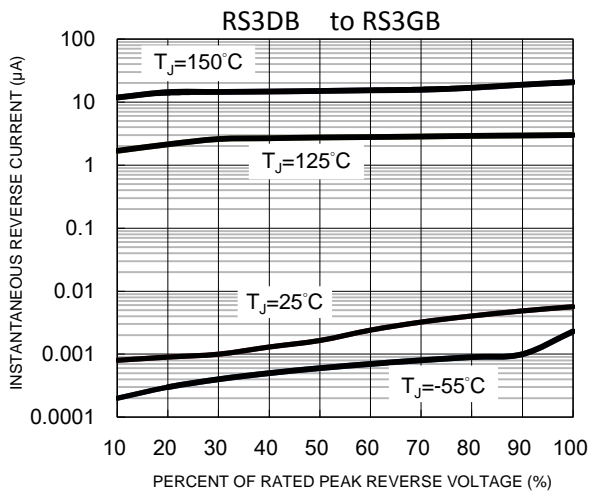


Fig.4 Typical Forward Characteristics

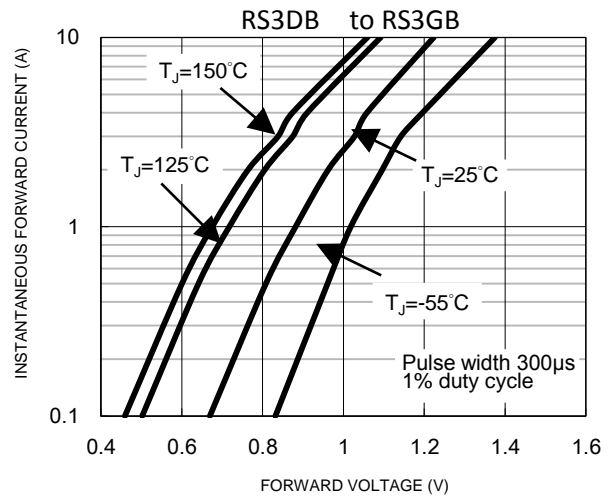


Fig.5 Typical Reverse Characteristics

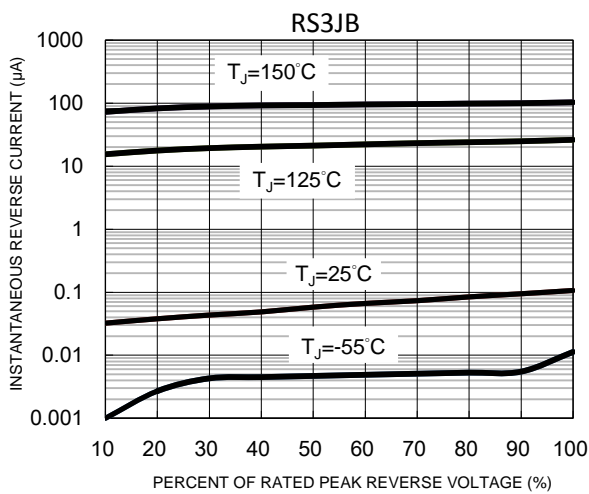


Fig.6 Typical Forward Characteristics

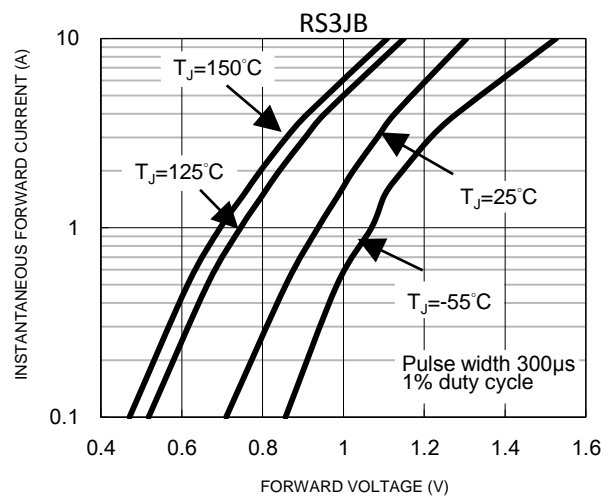


Fig.7 Typical Reverse Characteristics

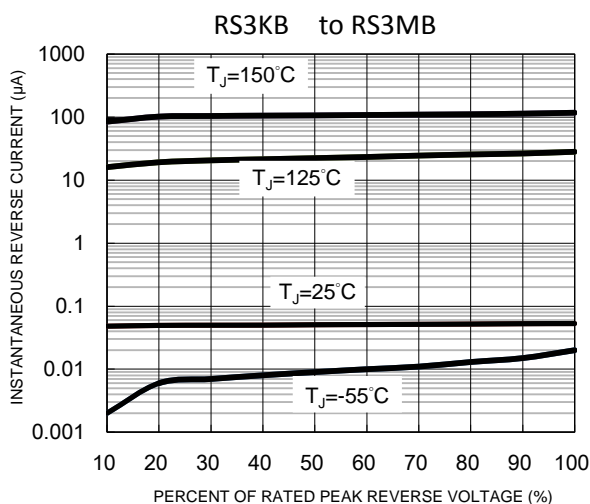


Fig.8 Typical Forward Characteristics

