

5A, 1200V Standard Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switch Mode Power Supply
- Inverters and Converters
- Freewheeling diode

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: 0.090g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	5	A
V_{RRM}	1200	V
I_{FSM}	170	A
T_{JMAX}	150	°C
Package	DO-214AA (SMB)	
Configuration	Single die	



DO-214AA (SMB)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	S5QB	UNIT
Marking code on the device		S5QB	
Repetitive peak reverse voltage	V_{RRM}	1200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	840	V
Forward current	I_F	5	A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	170	A
	$t = 1.0\text{ms}$	430	A
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	28	$^{\circ}C/W$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	49	$^{\circ}C/W$
Junction-to-case thermal resistance	$R_{\theta JC}$	16	$^{\circ}C/W$

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 ⁽¹⁾	$I_F = 2.5A, T_J = 25^{\circ}C$	V_F	0.89	-	V
	$I_F = 5.0A, T_J = 25^{\circ}C$		0.94	1.1	V
	$I_F = 2.5A, T_J = 125^{\circ}C$		0.76	-	V
	$I_F = 5.0A, T_J = 125^{\circ}C$		0.83	0.95	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^{\circ}C$	I_R	-	10	μA
	$T_J = 125^{\circ}C$		-	75	μA
Junction capacitance	1MHz, $V_R = 4.0V$	C_J	36	-	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
S5QB	DO-214AA (SMB)	3,000 / Tape & Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

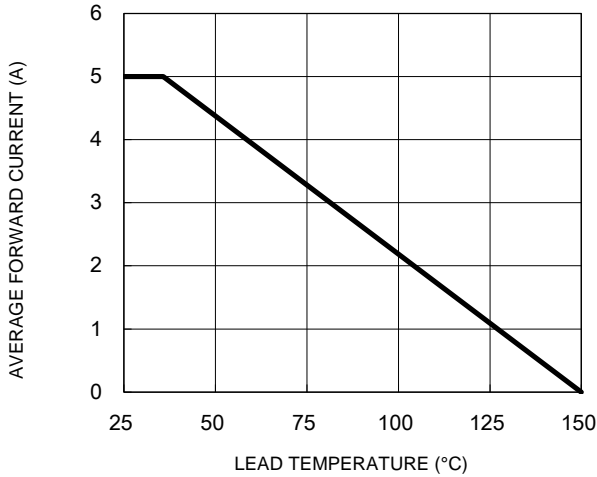


Fig.2 Typical Junction Capacitance

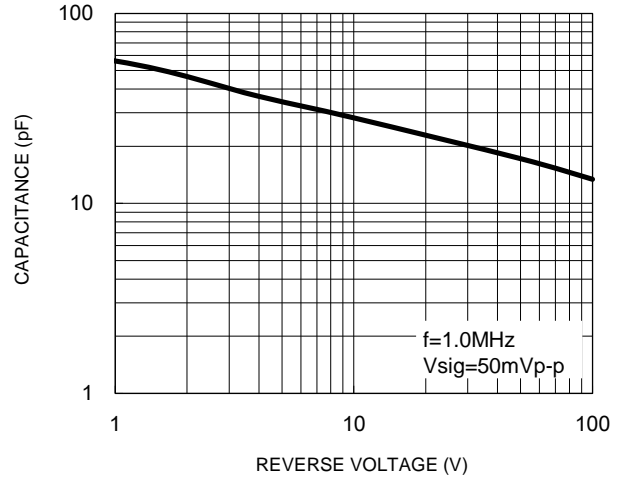


Fig.3 Typical Reverse Characteristics

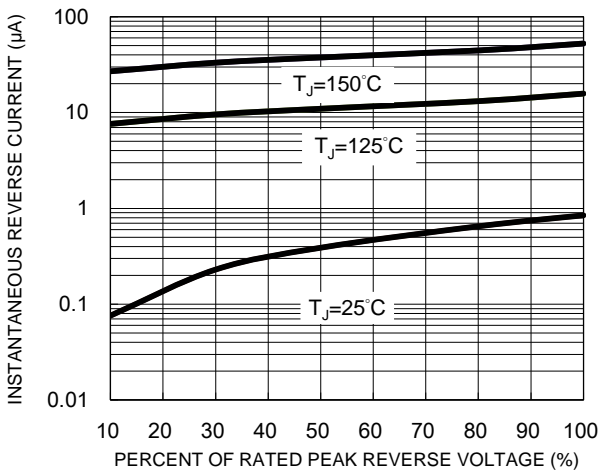


Fig.4 Typical Forward Characteristics

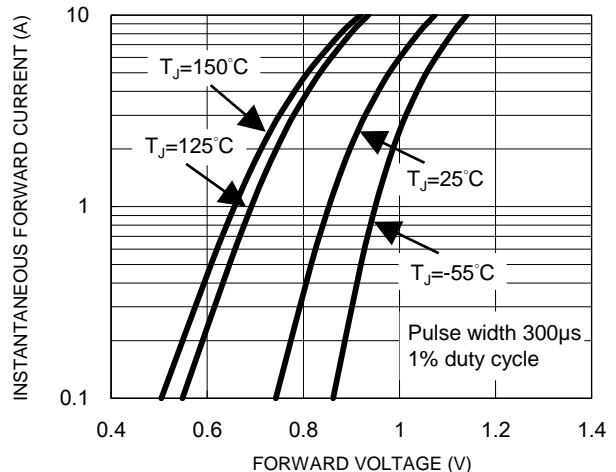
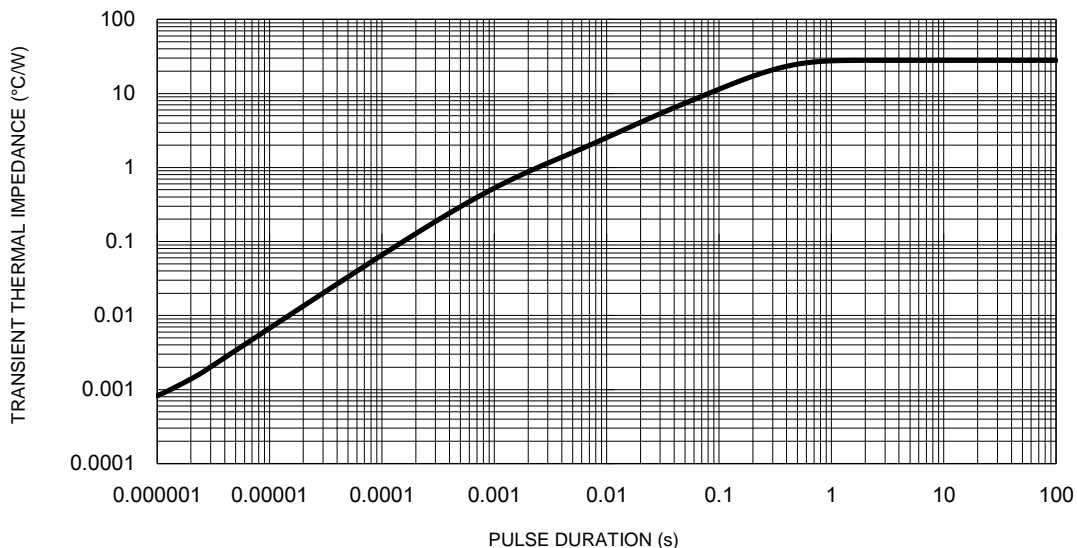
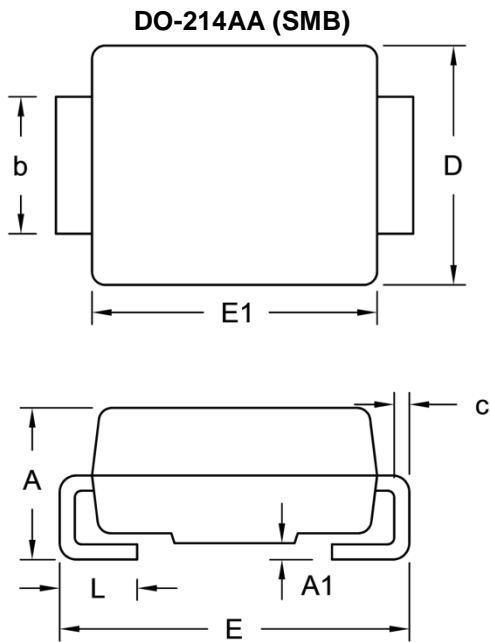


Fig.5 Typical Transient Thermal Impedance

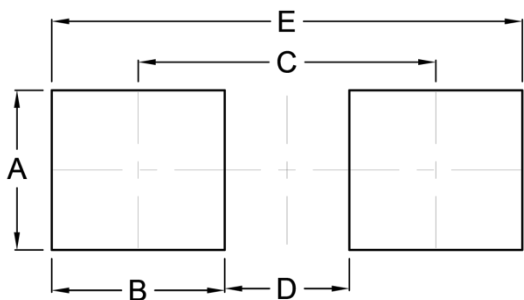


PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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