3A, 1200V 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-214AB (SMC)
- 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: 0.200g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	3	A
V_{RRM}	1200	V
I_{FSM}	120	A
$T_{J\ MAX}$	150	°C
Package	DO-214AB (SMC)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



DO-214AB (SMC)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)				
PARAMETER		**SYMBOL**	**S3Q**	**UNIT**
Marking code on the device			S3Q	
Repetitive peak reverse voltage		V_{RRM}	1200	V
Reverse voltage, total rms value		$V_{R(RMS)}$	840	V
Forward current		I_F	3	A
Surge peak forward current single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	120	A
	t = 1.0ms		330	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	$R_{\Theta JL}$	16	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	47	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	17	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	I_F = 1.5A, T_J = 25°C	V_F	0.88	-	V
	I_F = 3.0A, T_J = 25°C		0.93	1.15	V
	I_F = 1.5A, T_J = 125°C		0.75	-	V
	I_F = 3.0A, T_J = 125°C		0.81	0.95	V
Reverse current @ rated V_R[2]	T_J = 25°C	I_R	-	10	μA
	T_J = 125°C		-	150	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	27	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
S3Q	DO-214AB (SMC)	3,000 / Tape & Reel

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

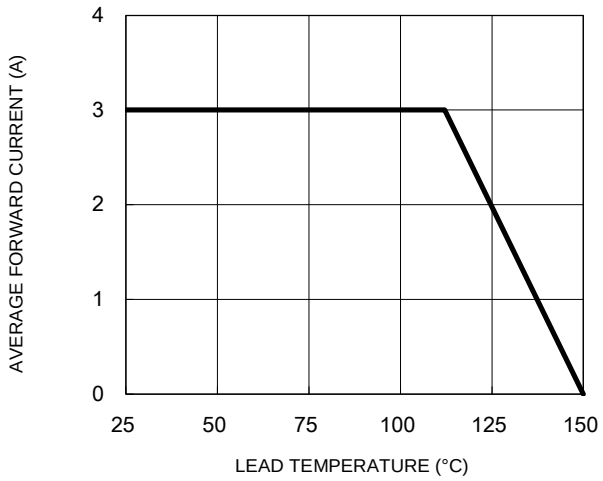


Fig.2 Typical Junction Capacitance

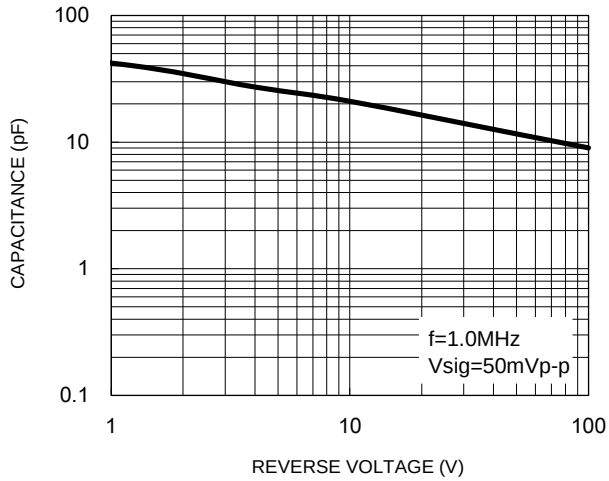


Fig.3 Typical Reverse Characteristics

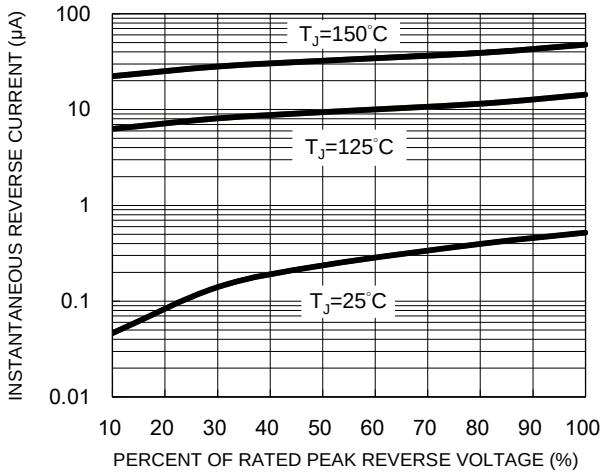


Fig.4 Typical Forward Characteristics

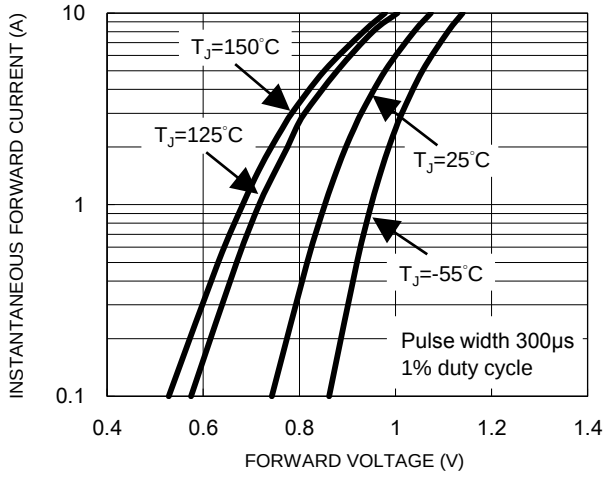
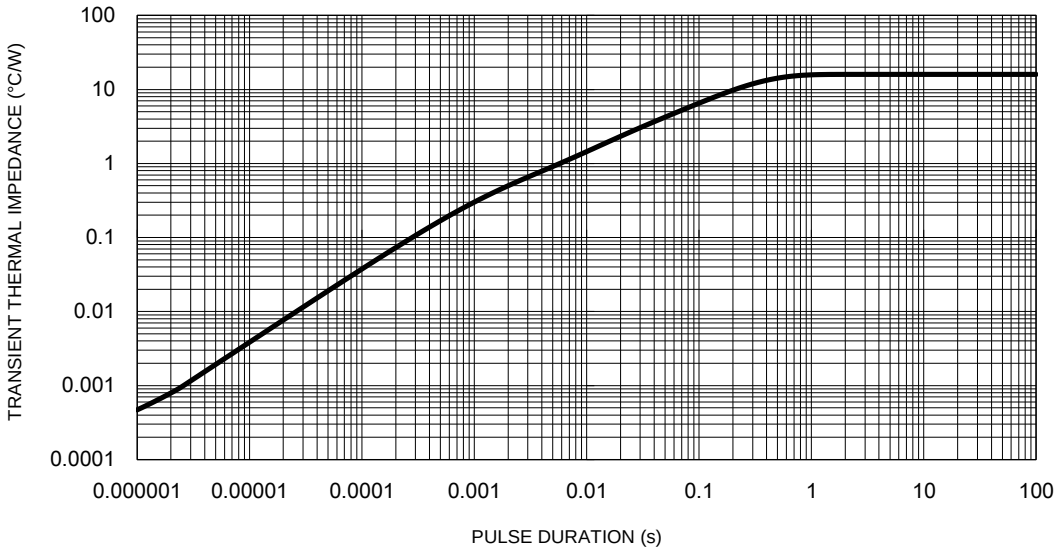
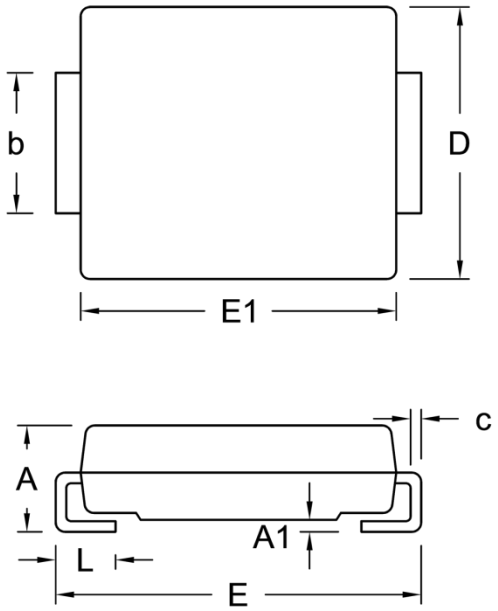


Fig.5 Typical Transient Thermal Impedance



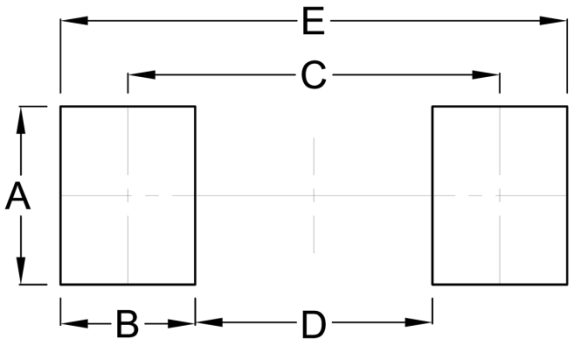
PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.00	2.62	0.079	0.103
A1	0.10	0.20	0.004	0.008
b	2.90	3.20	0.114	0.126
c	0.15	0.31	0.006	0.012
D	5.59	6.22	0.220	0.245
E	7.75	8.13	0.305	0.320
E1	6.60	7.11	0.260	0.280
L	1.00	1.60	0.039	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.90	0.272
D	4.40	0.173
E	9.40	0.370

MARKING DIAGRAM



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

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