

1A, 100V - 200V Ultra Fast Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Planar technology
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- High frequency switching
- DC/DC
- Snubber

MECHANICAL DATA

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.060g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	100 - 200	V
I_{FSM}	45	A
T_{JMAX}	175	°C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	PU1BAH	PU1DAH	UNIT
Marking code on the device		PU1BA	PU1DA	
Repetitive peak reverse voltage	V_{RRM}	100	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	70	140	V
Forward current	I_F	1		A
Surge peak forward current single half sine-wave superimposed on rated load	$t = 8.3\text{ms}$	45		A
	$t = 1.0\text{ms}$	100		
Junction temperature	T_J	-55 to +175		°C
Storage temperature	T_{STG}	-55 to +175		°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	76	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	23	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.79	-	V
	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		0.84	0.93	V
	$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.64	-	V
	$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		0.70	-	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	2	μA
	$T_J = 125^\circ\text{C}$		-	10	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	19	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	25	ns
	$I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}, V_R = 30\text{V}$		34	-	
Reverse recovery current	$I_F = 1.0\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 100\text{V}$	I_{RM}	3.4	-	A
Reverse recovery charge		Q_{rr}	27	-	nC
Reverse recovery time		t_{rr}	19	-	ns

Notes:

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

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
PU1xAH	DO-214AC (SMA)	7,500/ Tape & Reel

Notes:

1. "x" defines voltage from 100V(PU1BAH) to 200V(PU1DAH)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

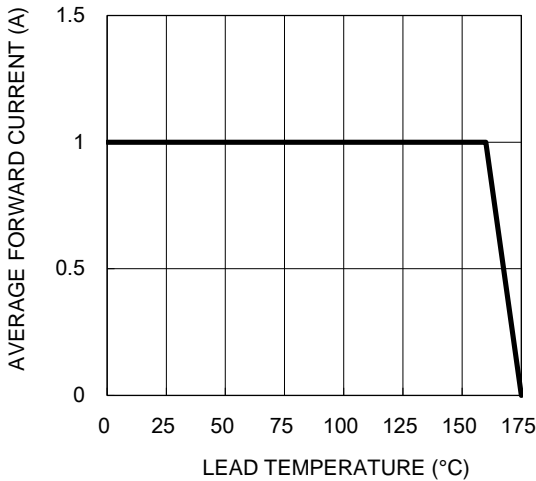


Fig.2 Typical Junction Capacitance

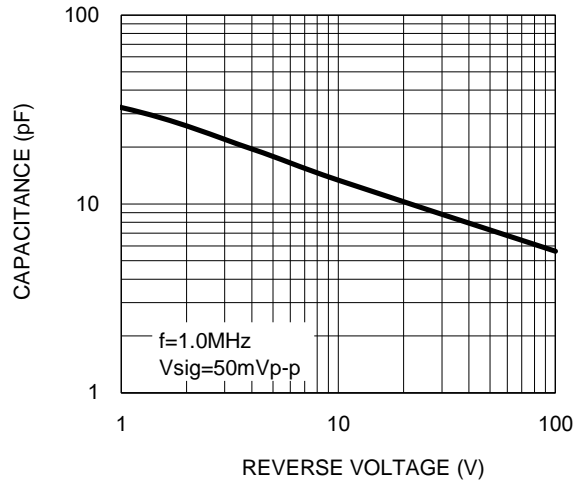


Fig.3 Typical Reverse Characteristics

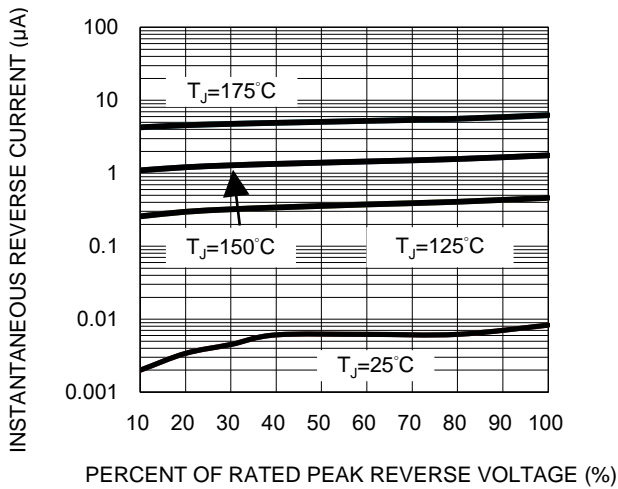


Fig.4 Typical Forward Characteristics

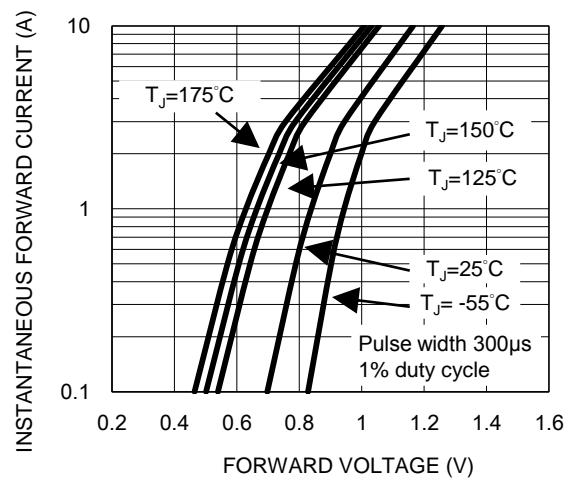
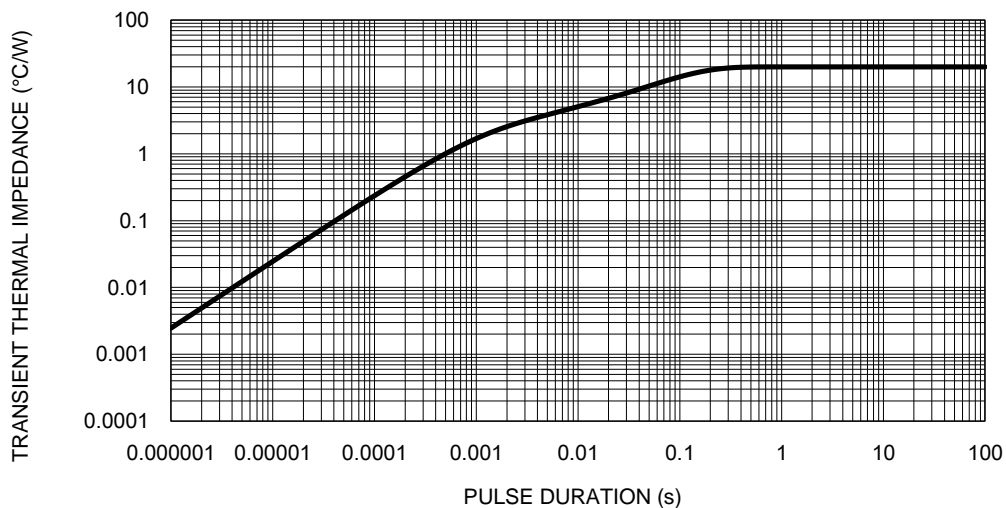
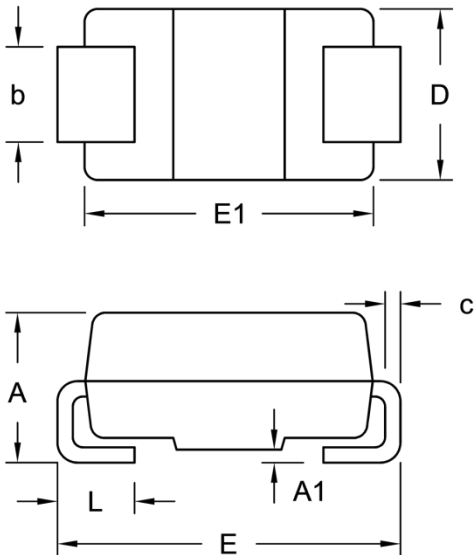


Fig.5 Typical Transient Thermal Impedance



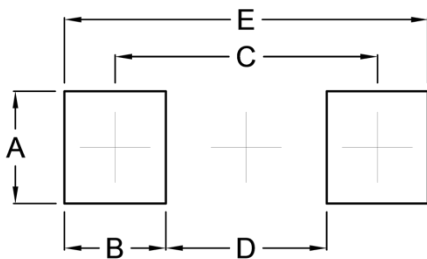
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



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

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