2A, 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: SOD-123HE
- 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: 0.013g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	2	A
V_{RRM}	100 - 200	V
I_{FSM}	50	A
$T_{J\ MAX}$	175	°C
Package	SOD-123HE	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-123HE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER		**SYMBOL**	**PU2BLSH**	**PU2DLSH**	**UNIT**
Marking code on the device			U2BLS	U2DLS	
Repetitive peak reverse voltage		V_{RRM}	100	200	V
Reverse voltage, total rms value		$V_{R(RMS)}$	70	140	V
Forward current		I_F	2		A
Surge peak forward current single half sine-wave superimposed on rated load	t = 8.3ms	I_{FSM}	50		A
	t = 1.0ms		140		
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	$R_{\Theta JL}$	14	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	79	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	19	°C/W

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

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	I_F = 1A, T_J = 25°C	V_F	0.81	-	V
	I_F = 2A, T_J = 25°C		0.87	0.93	V
	I_F = 1A, T_J = 125°C		0.66	-	V
	I_F = 2A, T_J = 125°C		0.73	-	V
Reverse current @ rated V_R[2]	T_J = 25°C	I_R	-	2	μA
	T_J = 125°C		-	10	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	31	-	pF
Reverse recovery time	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	25	ns
	I_F = 1.0A, di/dt = 50A/μs, V_R = 30V		30	-	
Reverse recovery current	I_F = 2.0A, di/dt = 200A/μs, V_R = 100V	I_{RM}	3.6	-	A
Reverse recovery charge		Q_{rr}	31	-	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
PU2xLSH	SOD-123HE	10,000/ Tape & Reel

Notes:

1. “x” defines voltage from 100V(PU2BLSH) to 200V(PU2DLSH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

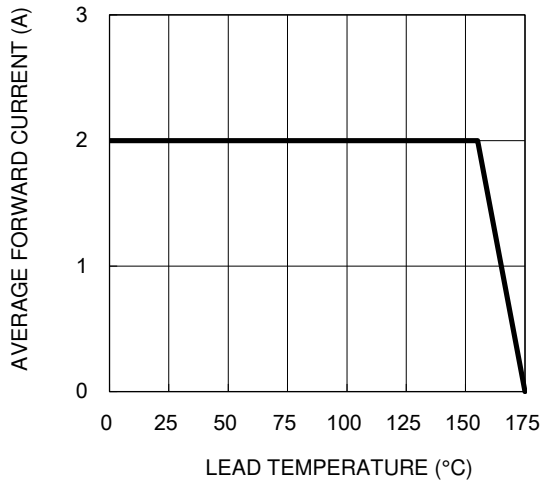


Fig.2 Typical Junction Capacitance

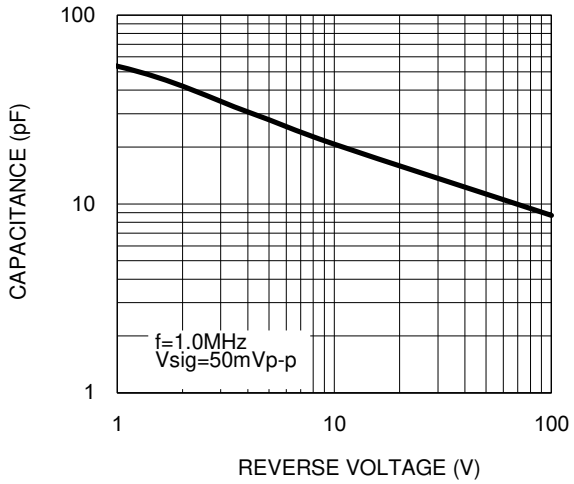


Fig.3 Typical Reverse Characteristics

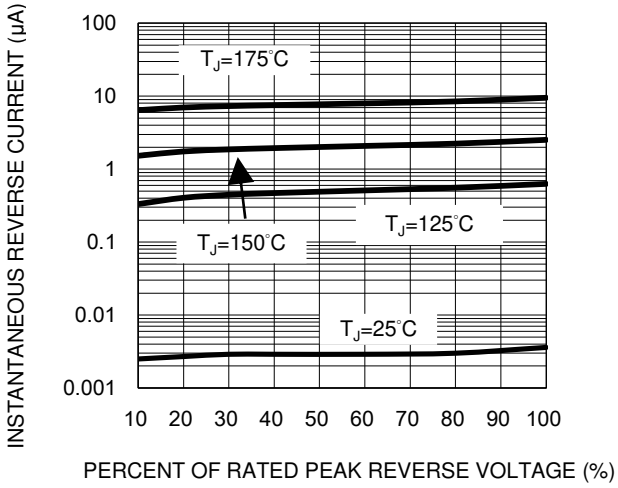


Fig.4 Typical Forward Characteristics

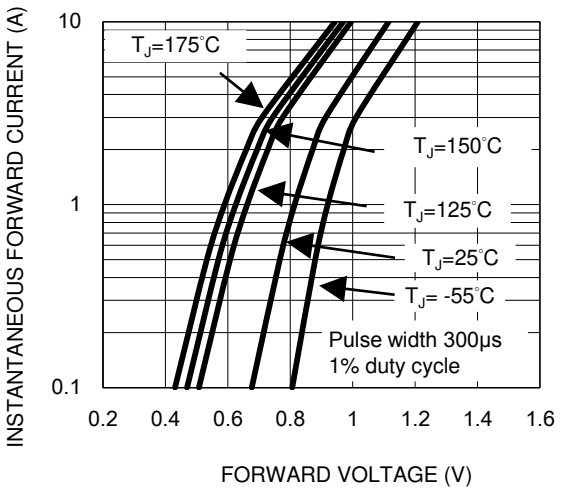
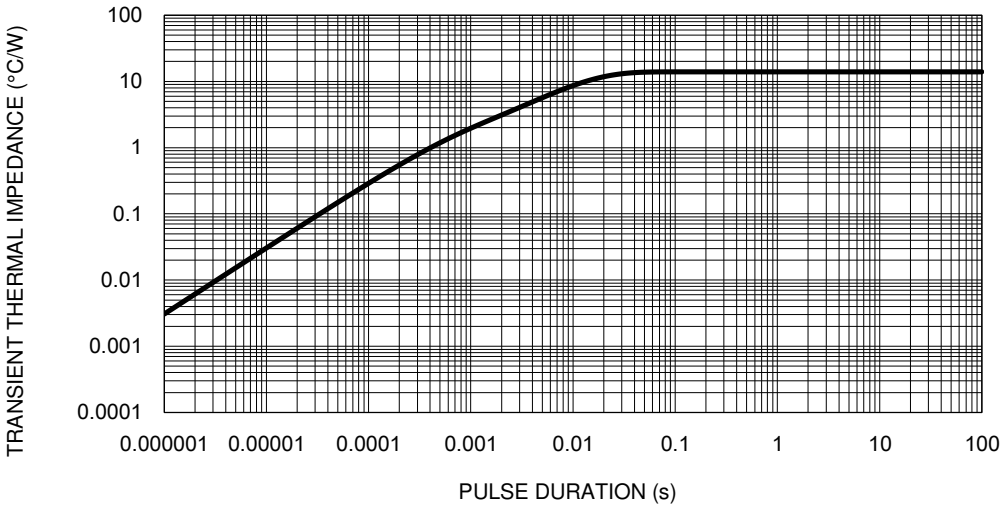
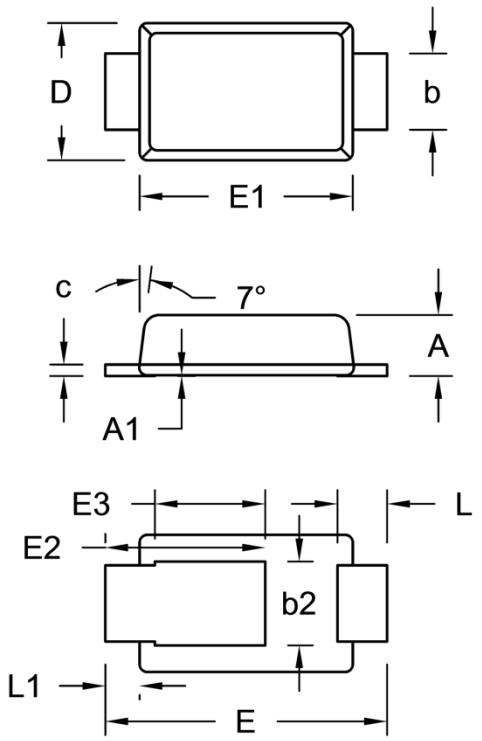


Fig.5 Typical Transient Thermal Impedance



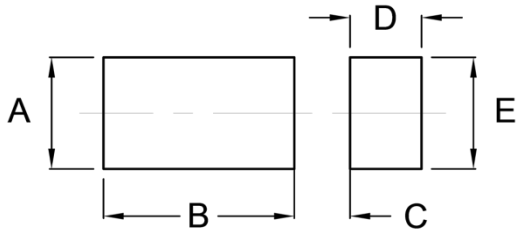
PACKAGE OUTLINE DIMENSIONS

SOD-123HE



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.75	0.85	0.030	0.033
A1	0.00	0.02	0.000	0.001
b	0.85	1.15	0.033	0.045
b2	0.95	1.25	0.037	0.049
c	0.10	0.20	0.004	0.008
D	1.65	1.95	0.065	0.077
E	3.50	3.90	0.138	0.154
E1	2.60	3.00	0.102	0.118
E2	1.90	2.30	0.075	0.091
E3	1.35	1.55	0.053	0.061
L	0.55	0.75	0.022	0.030
L1	0.35	0.55	0.014	0.022

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	2.40	0.094
C	0.70	0.028
D	0.90	0.035
E	1.40	0.055

MARKING DIAGRAM

P/N = Marking Code
YW = Date Code
F = Factory Code

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