1.2A, 200V - 1000V Surface Mount Rectifier

FEATURES

- Ideal for automated placement
- Compact package size
- High surge current capability
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

MECHANICAL DATA

- Case: SOD-123HE
- Molding compound meets UL 94V-0 flammability rating
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.022g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	1.2	A
V_{RRM}	200 - 1000	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	S1DLS	S1GLS	S1JLS	S1KLS	S1MLS	UNIT
Marking code on the device		1DLS	1GLS	1JLS	1KLS	1MLS	
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
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1000	V
Forward current	$I_{F(AV)}$	1.2					A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	50					A
Junction temperature	T_J	-55 to +175					°C
Storage temperature	T_{STG}	-55 to +175					°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-lead thermal resistance per diode	$R_{\Theta JL}$	46	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	86	°C/W
Junction-to-case thermal resistance per diode	$R_{\Theta JC}$	50	°C/W

Thermal Performance Note: Units mounted on recommended 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 per diode (1)	I_F = 1.2A, T_J = 25°C	V_F	-	1.3	V
Reverse current @ rated V_R per diode (2)	T_J = 25°C	I_R	-	5	μA
	T_J = 125°C		-	150	μA

Notes:

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

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
S1xLS (Note 1,2)	H	RV	G	SOD-123HE	3,000 / 7" Reel
		RQ		SOD-123HE	10,000 / 13" Reel

Notes:

1. "x" defines voltage from 200V (S1DLS) to 1000V (S1MLS)
2. Whole series with green compound (halogen-free)

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
S1MLSHRVG	S1MLS	H	RV	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

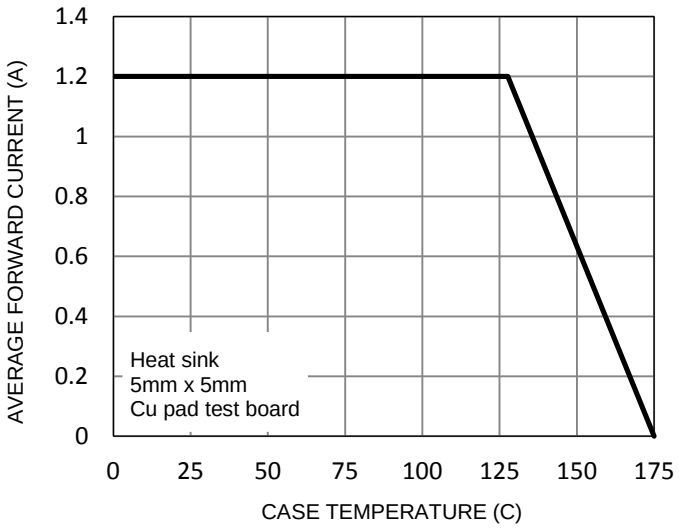


Fig.2 Typical Junction Capacitance

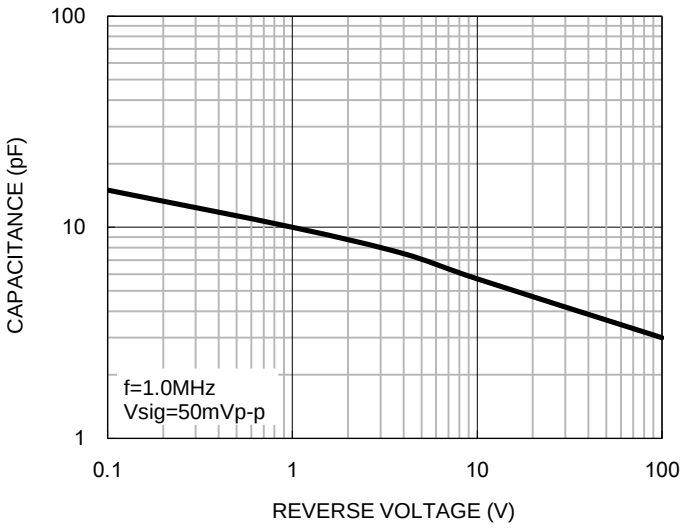


Fig.3 Typical Reverse Characteristics

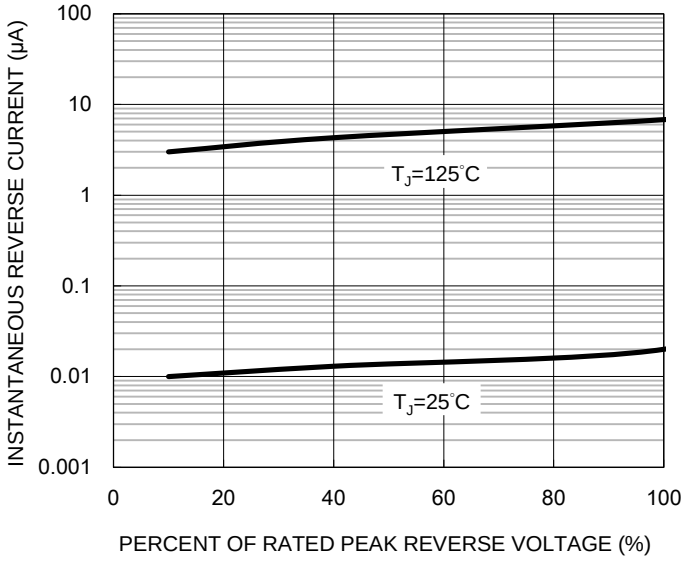
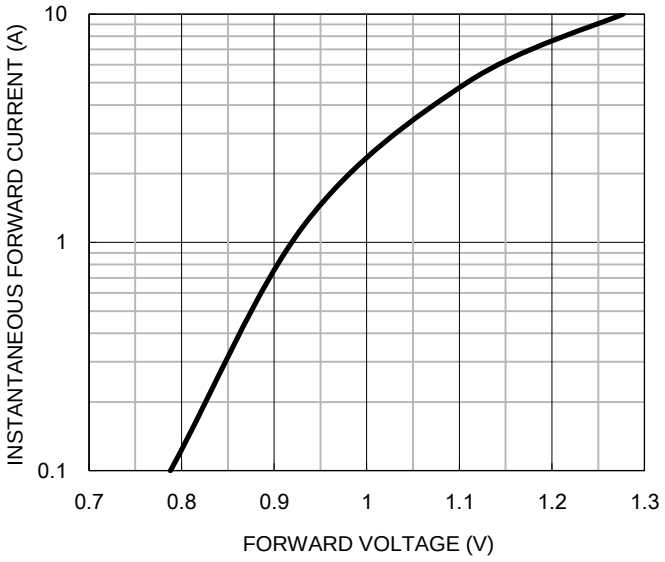


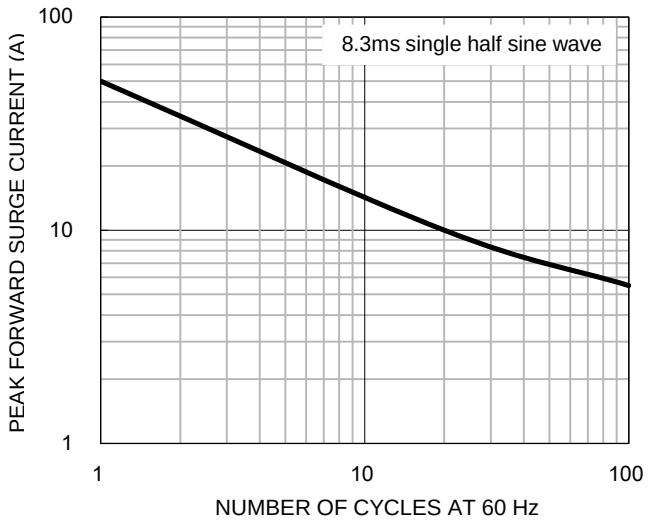
Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

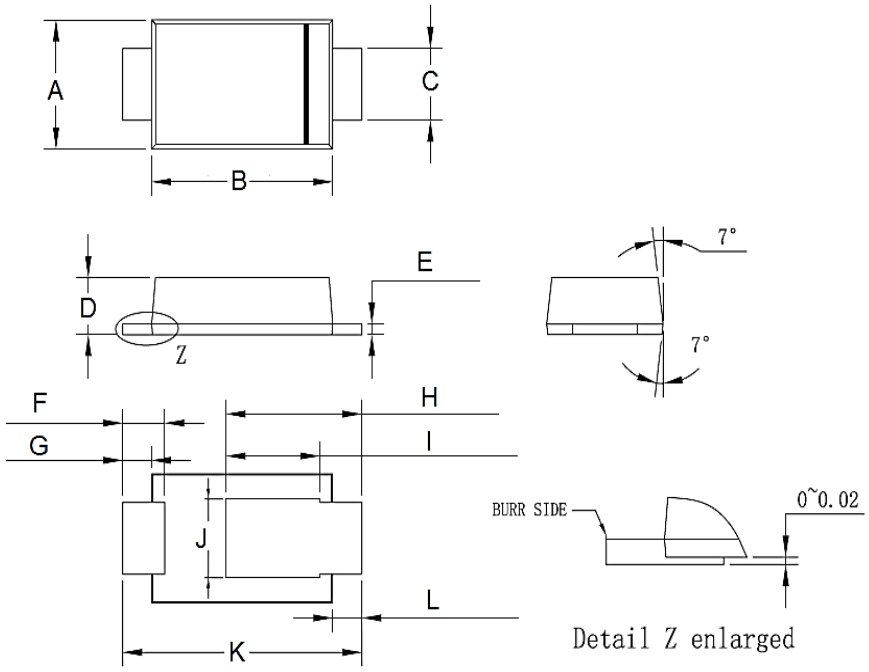
(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-repetitive Forward Surge Current



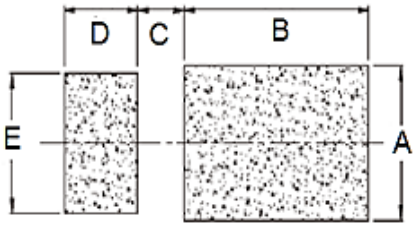
PACKAGE OUTLINE DIMENSIONS

SOD-123HE



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.65	1.95	0.065	0.077
B	2.60	3.00	0.102	0.118
C	0.85	1.15	0.033	0.045
D	0.75	0.85	0.030	0.033
E	0.10	0.20	0.004	0.008
F	0.55	0.75	0.022	0.030
G	0.35	0.55	0.014	0.022
H	1.90	2.30	0.075	0.091
I	1.35	1.55	0.053	0.061
J	0.95	1.25	0.037	0.049
K	3.50	3.90	0.138	0.154
L	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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