

1A, 200V - 1000V Standard Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placeme
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Freewheeling
- Snubber
- DC/DC converters
- Automotive application

MECHANICAL DATA

- Case: SOD-128
- 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: 0.027g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	200 - 1000	V
I_{FSM}	30	A
T_{JMAX}	150	°C
Package	SOD-128	
Configuration	Single die	



SOD-128



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	S1DFSH	S1GFSH	S1JFSH	S1KFSH	S1MFSH	UNIT	
Marking code on the device		S1DFS	S1GFS	S1JFS	S1KFS	S1MFS		
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	
Forward current	I_F	2						A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30						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	$R_{\theta JL}$	29	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	82	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	30	°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	0.91	1.00	V
	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		0.99	1.10	V
	$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.78	0.87	V
	$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		0.85	0.95	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	1	μA
	$T_J = 125^\circ\text{C}$		-	50	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	9	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
S1xFSH	SOD-128	14,000 / Tape & Reel

Notes:

1. "x" defines voltage from 200V(S1DFSH) to 1000V(S1MFSH)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

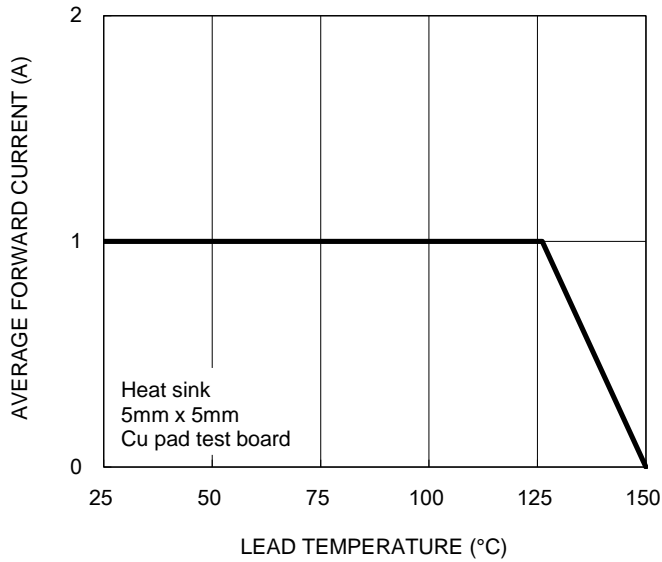


Fig.2 Typical Junction Capacitance

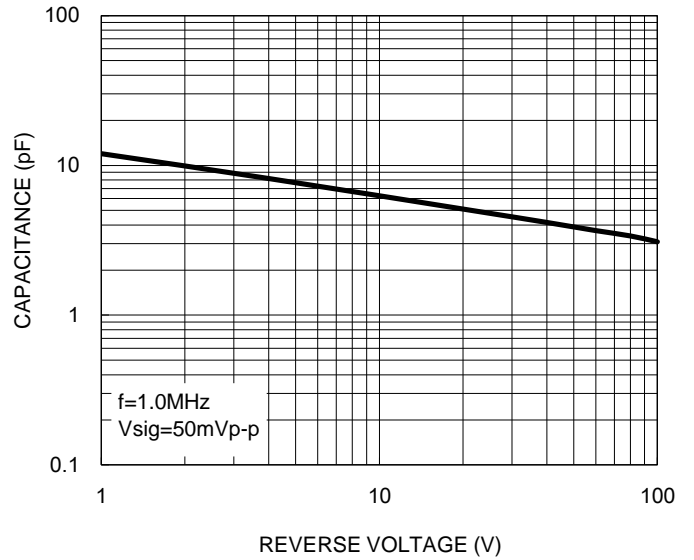


Fig.3 Typical Reverse Characteristics

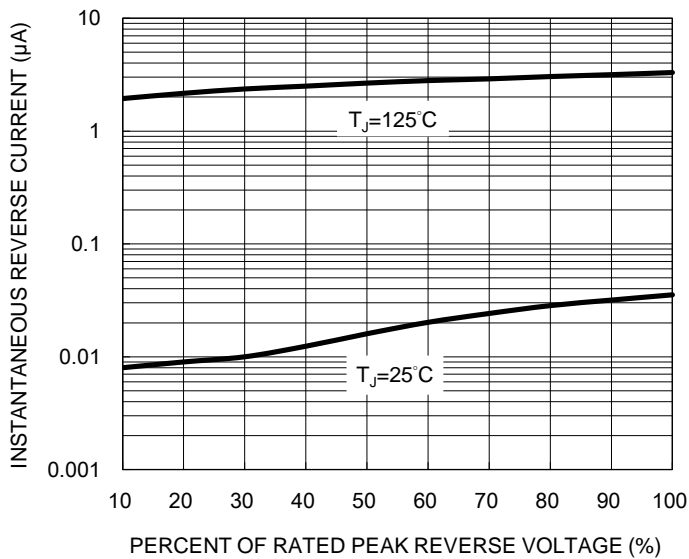
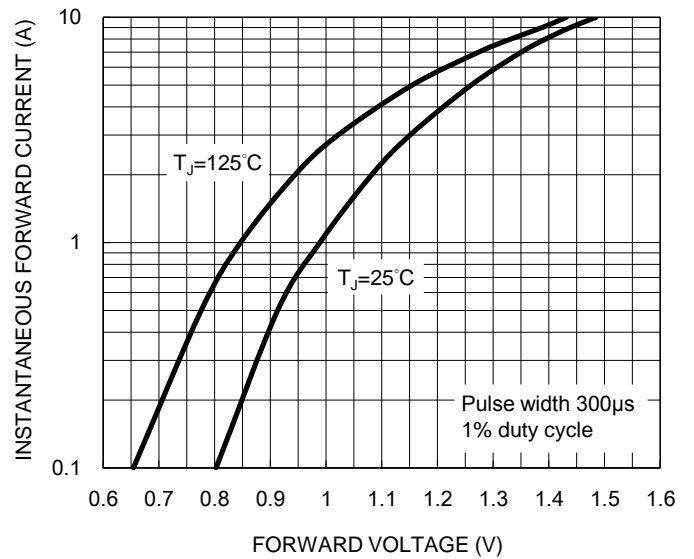
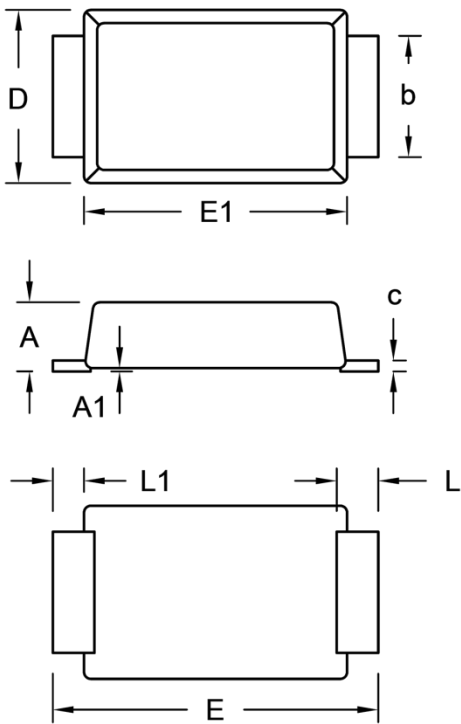


Fig.4 Typical Forward Characteristics



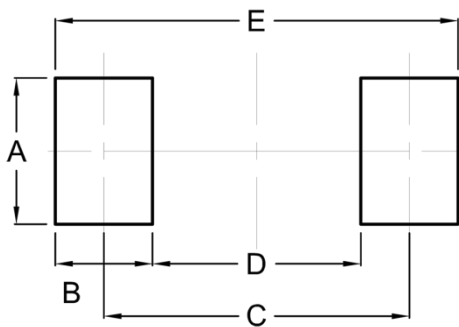
PACKAGE OUTLINE DIMENSIONS

SOD-128



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.043
A1	0.00	0.10	0.000	0.004
b	1.60	1.90	0.063	0.075
c	0.10	0.22	0.004	0.009
D	2.30	2.70	0.091	0.106
E	4.40	5.00	0.173	0.197
E1	3.60	4.00	0.142	0.157
L	0.40	0.80	0.016	0.031
L1	0.30	0.60	0.012	0.024

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.10	0.083
B	1.40	0.055
C	4.40	0.173
D	3.00	0.118
E	5.80	0.228

MARKING DIAGRAM



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

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