1A, 200V - 1000V Fast Recovery Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Low power loss, high efficiency
- Low profile package
- 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
$T_{J\ MAX}$	150	°C
Package	SOD-128	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOD-128

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)							
PARAMETER	**SYMBOL**	**RS1D FSH**	**RS1G FSH**	**RS1J FSH**	**RS1K FSH**	**RS1M FSH**	**UNIT**
Marking code on the device		RS1DFS	RS1GFS	RS1JFS	RS1KFS	RS1MFS	
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	1					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	$R_{\Theta JA}$	84	°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°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]		I_F = 0.5A, T_J = 25°C	V_F	0.94	1.10	V
		I_F = 1.0A, T_J = 25°C		1.01	1.30	V
		I_F = 0.5A, T_J = 125°C		0.79	1.00	V
		I_F = 1.0A, T_J = 125°C		0.88	1.20	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	50	μA
Junction capacitance		1MHz, V_R = 4.0V	C_J	7	-	pF
Reverse recovery time	RS1DFSH RS1GFSH	I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	150	ns
	RS1JFSH			-	250	ns
	RS1KFSH RS1MFSH			-	500	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
RS1xFSH	SOD-128	14,000 / Tape & Reel

Notes:

1. "x" defines voltage from 200V(RS1DFSH) to 1000V(RS1MFSH)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

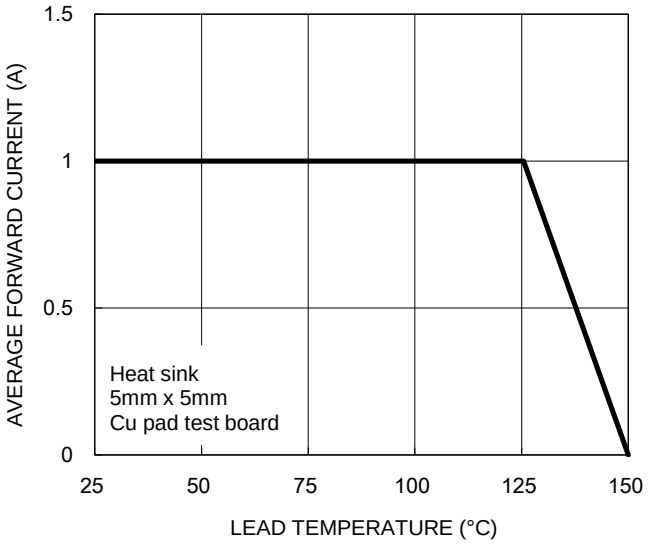


Fig.2 Typical Junction Capacitance

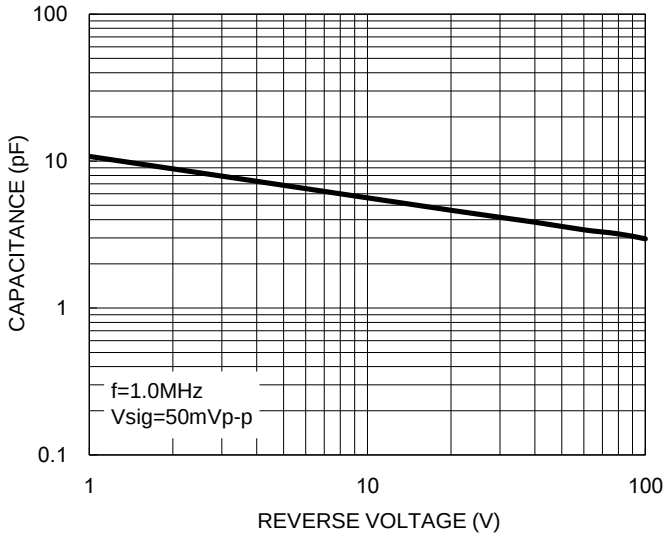


Fig.3 Typical Reverse Characteristics

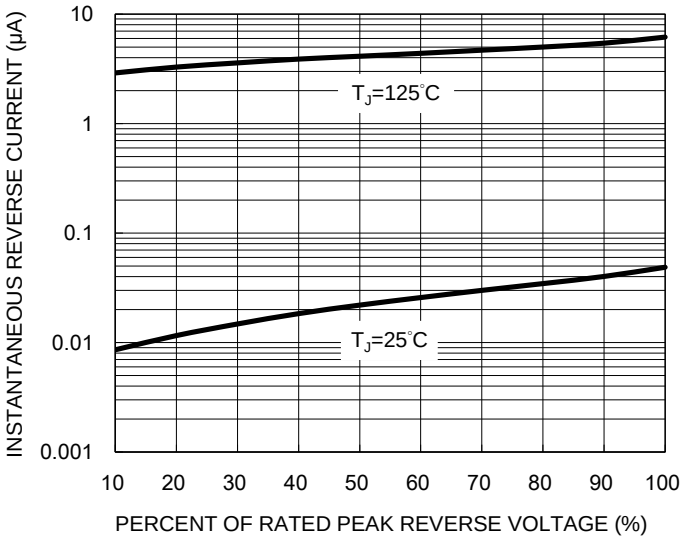
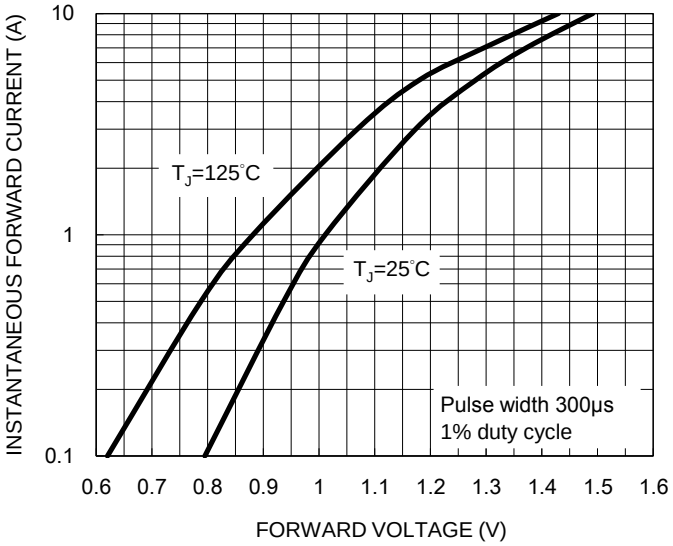
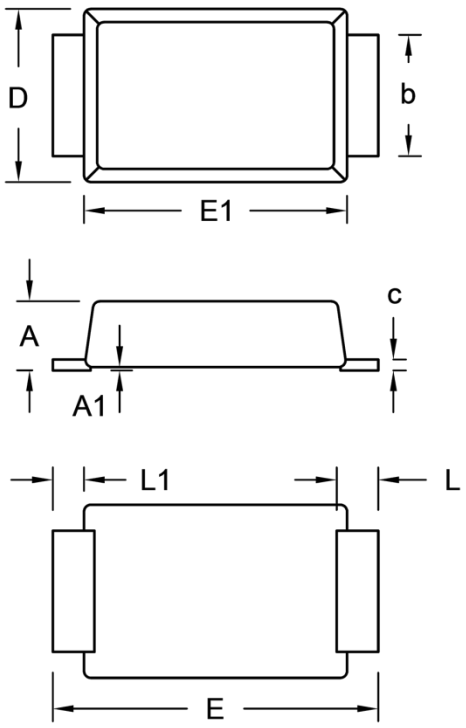


Fig.4 Typical Forward Characteristics



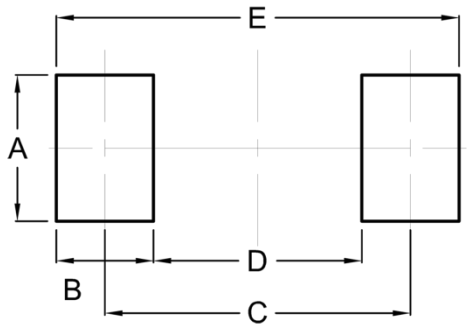
PACKAGE OUTLINE DIMENSIONS

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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