3A, 1000V Fast Recovery Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Fast switching for high efficiency
- 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	3	A
V_{RRM}	1000	V
I_{FSM}	80	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**	**RS3MFSH**	**UNIT**
Marking code on the device		RS3MFS	
Repetitive peak reverse voltage	V_{RRM}	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	700	V
Forward current	I_F	3	A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	80	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	$R_{\Theta JL}$	23	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	88	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	24	°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 = 1.5A, T_J = 25°C	V_F	1.10	1.21	V
	I_F = 3.0A, T_J = 25°C		1.20	1.30	V
	I_F = 1.5A, T_J = 125°C		0.90	1.00	V
	I_F = 3.0A, T_J = 125°C		1.03	1.20	V
Reverse current @ rated V_R[2]	T_J = 25°C	I_R	-	5	μA
	T_J = 150°C		-	250	μA
Junction capacitance	1MHz, V_R = 4.0V	C_J	15	-	pF
Reverse recovery time	I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	160	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
RS3MFSH	SOD-128	14,000 / Tape & Reel

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

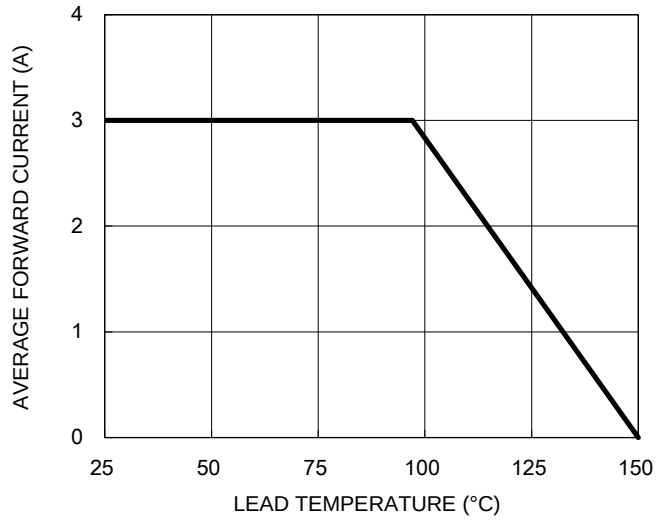


Fig.2 Typical Junction Capacitance

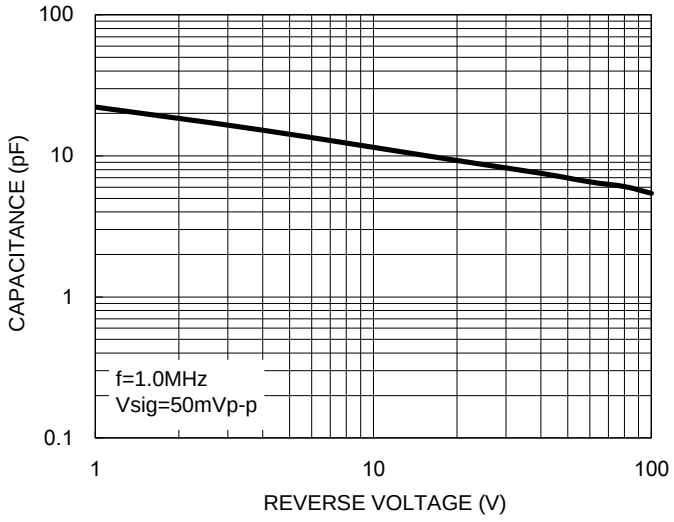


Fig.3 Typical Reverse Characteristics

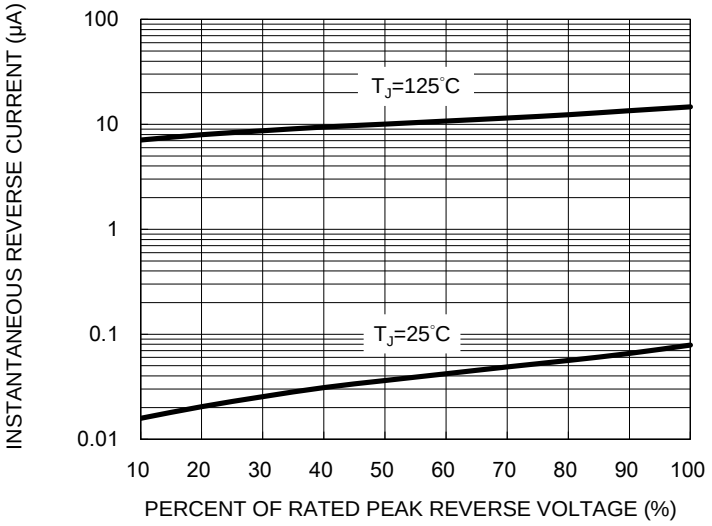
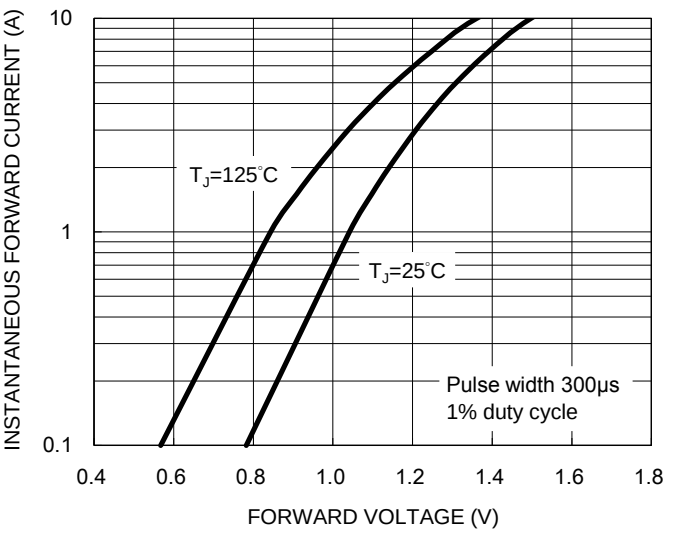
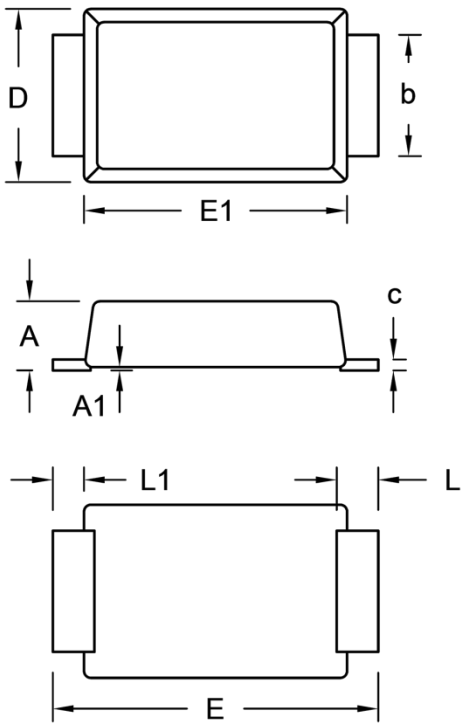


Fig.4 Typical Forward Characteristics



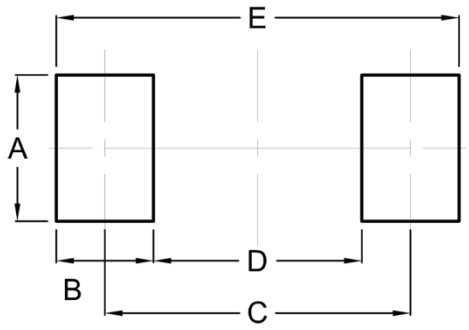
PACKAGE OUTLINE DIMENSIONS

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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