

## 3A, 600V Standard Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Low profile package
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen Free

### 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
$V_{RRM}$	600	V
$I_{FSM}$	50	A
$T_{J\ MAX}$	150	°C
Package	SOD-128	
Configuration	Single die	



**SOD-128**



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)			
PARAMETER	SYMBOL	S3JFSH	UNIT
Marking code on the device		S3JFS	
Repetitive peak reverse voltage	$V_{RRM}$	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	$I_F$	3	A
Surge peak forward current, single half sine-wave superimposed on rated load	t = 8.3ms	50	A
	t = 1.0ms	140	A
Junction temperature	$T_J$	-55 to +150	°C
Storage temperature	$T_{STG}$	-55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	14	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	74	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	20	°C/W

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

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	$I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.95	-	V
	$I_F = 3.0\text{A}, T_J = 25^\circ\text{C}$		1.03	1.10	V
	$I_F = 1.5\text{A}, T_J = 125^\circ\text{C}$		0.84	-	V
	$I_F = 3.0\text{A}, T_J = 125^\circ\text{C}$		0.94	-	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	1	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		7	-	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	14	-	pF

**Notes:**

(1) Pulse test with PW = 0.3ms

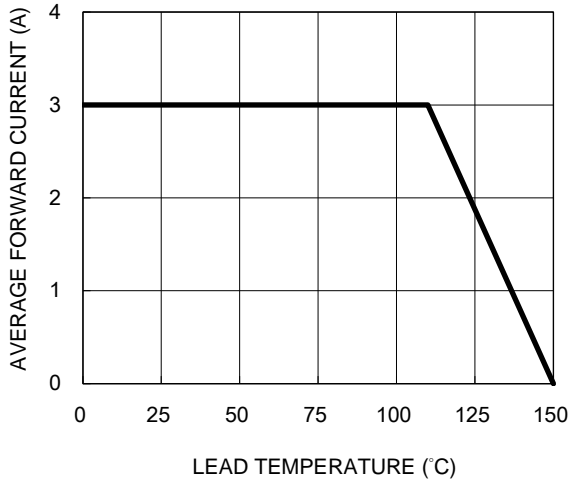
(2) Pulse test with PW = 30ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
S3JFSH	SOD-128	14,000 / Tape & Reel

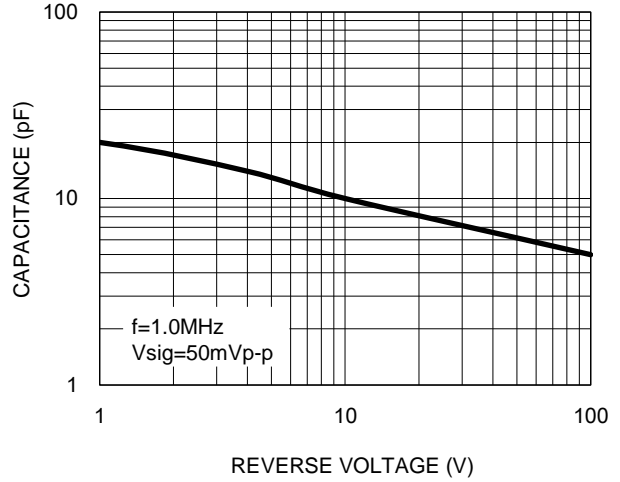
**CHARACTERISTICS CURVES**

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

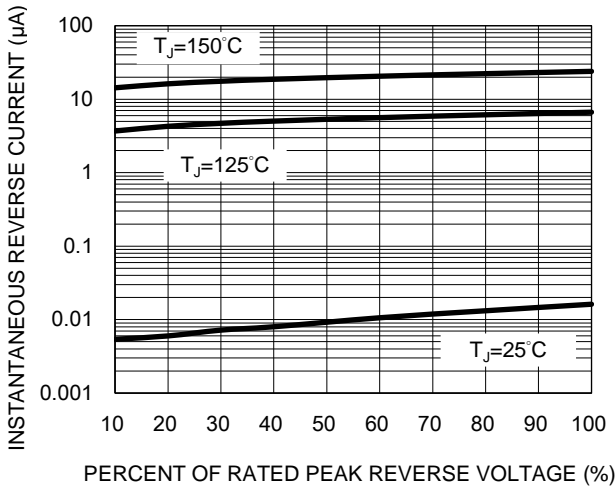
**Fig.1 Forward Current Derating Curve**



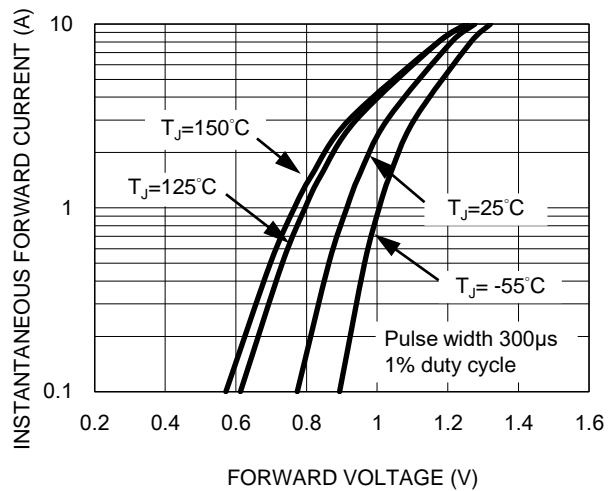
**Fig.2 Typical Junction Capacitance**



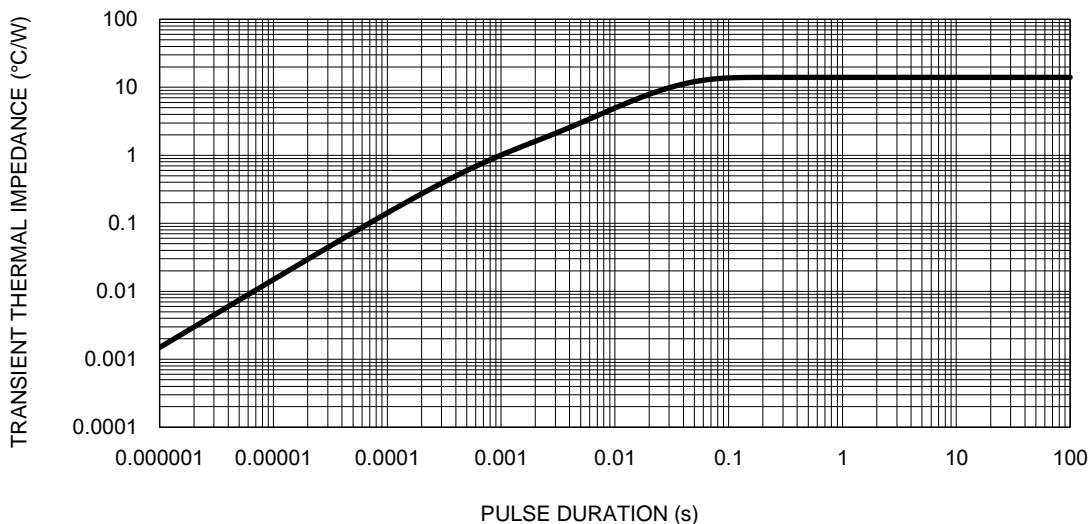
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

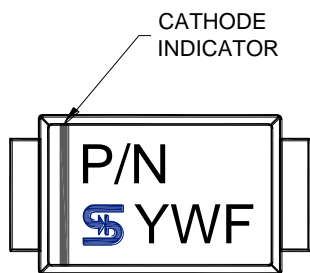
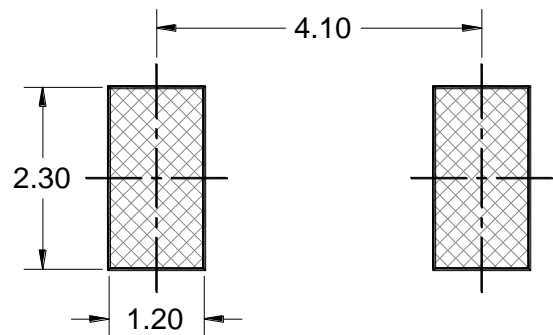
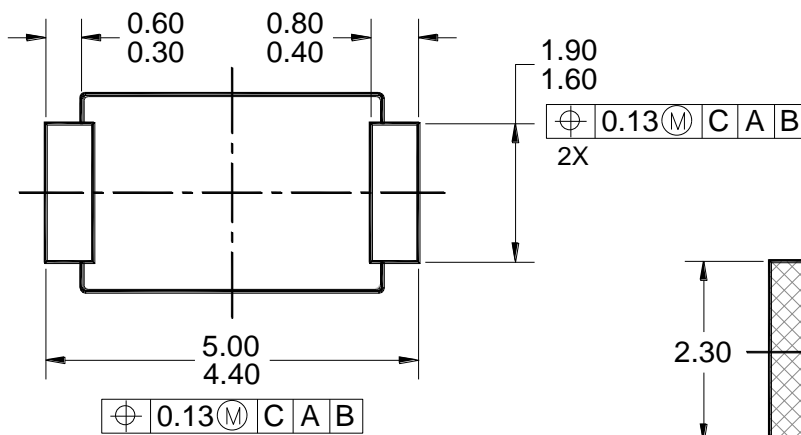
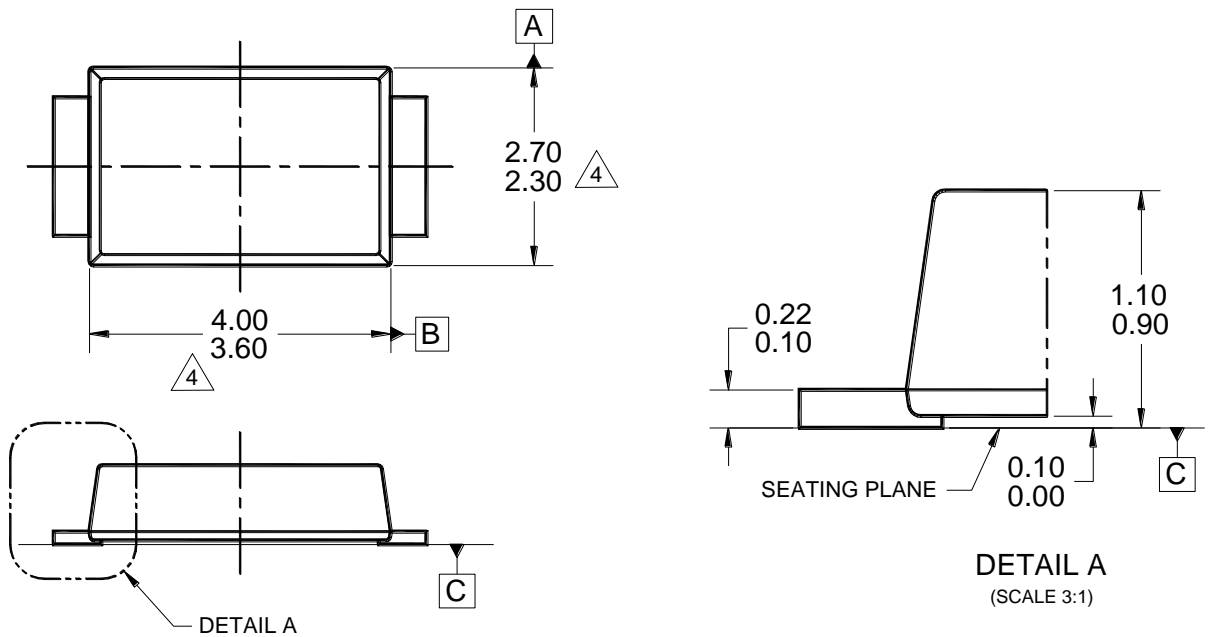


**Fig.5 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**

**SOD-128**



**MARKING DIAGRAM**

P/N = MARKING CODE  
 YW = DATE CODE  
 F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-221, VARIATION AD, ISSUE B.
4. MODDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD128-039 REV A.

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