

3A, 600V Standard Surface Mount Rectifier

FEATURES

- 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

- DC to DC converter
- Switching mode converters and inverters
- General purpose

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 ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|--|--------------------|-------------|------|
| PARAMETER | SYMBOL | S3JFS | 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 | $t = 8.3\text{ms}$ | 50 | A |
| | $t = 1.0\text{ms}$ | 140 | 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 | $R_{\theta JL}$ | 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)

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

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|--|--|--------|------|------|---------------|
| Forward voltage ⁽¹⁾ | $I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$ | 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 ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 1 | μA |
| | $T_J = 125^\circ\text{C}$ | | 7 | - | μA |
| Junction capacitance | 1MHz, $V_R = 4.0\text{V}$ | C_J | 14 | - | pF |

Notes:

(1) Pulse test with $PW = 0.3\text{ms}$

(2) Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

| ORDERING CODE | PACKAGE | PACKING |
|---------------|---------|----------------------|
| S3JFS | SOD-128 | 14,000 / Tape & Reel |

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

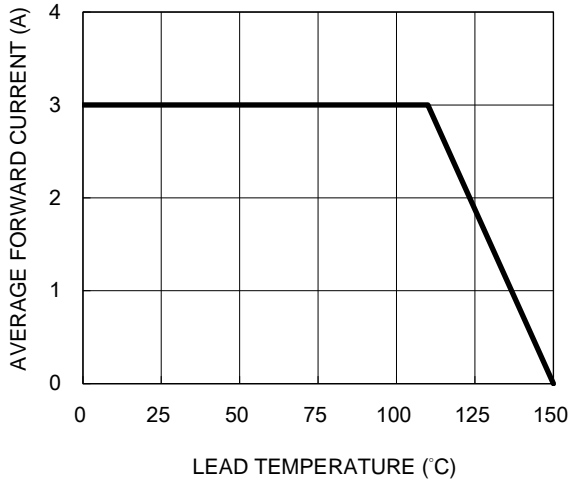


Fig.2 Typical Junction Capacitance

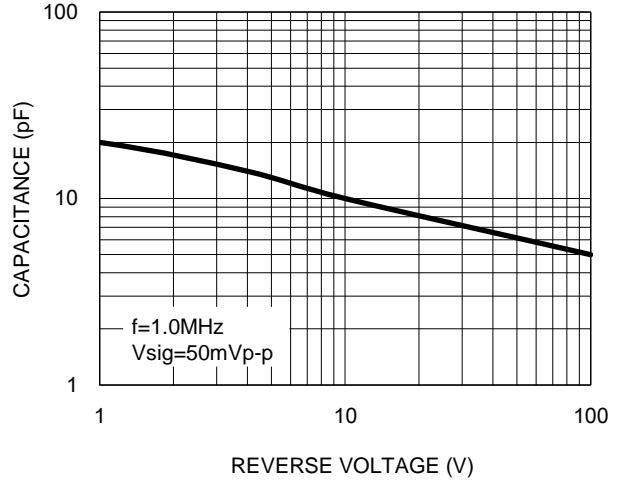


Fig.3 Typical Reverse Characteristics

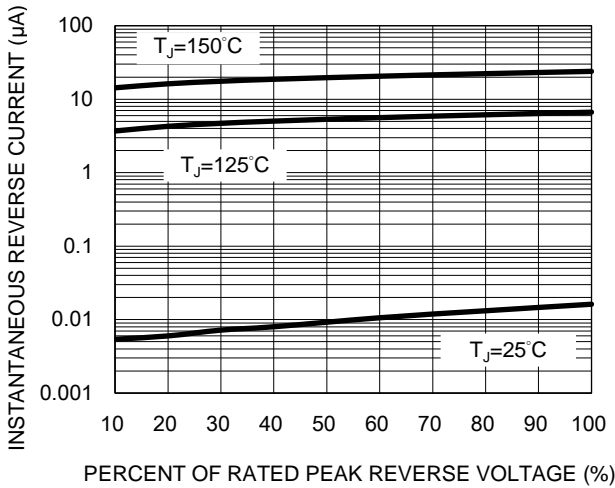


Fig.4 Typical Forward Characteristics

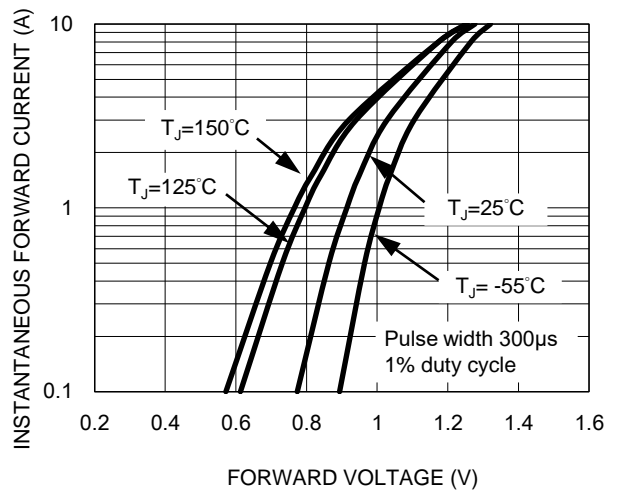
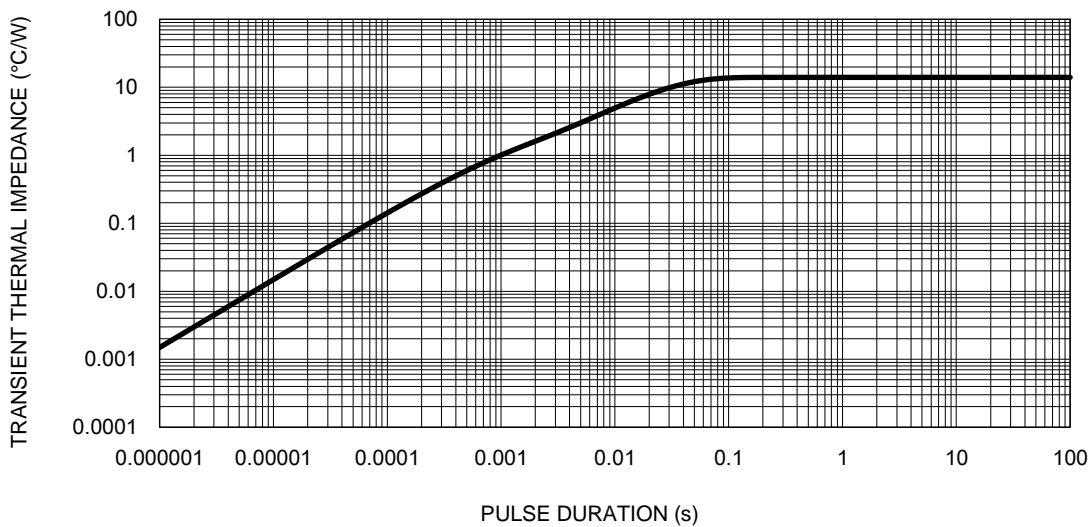
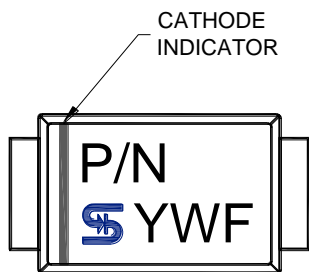
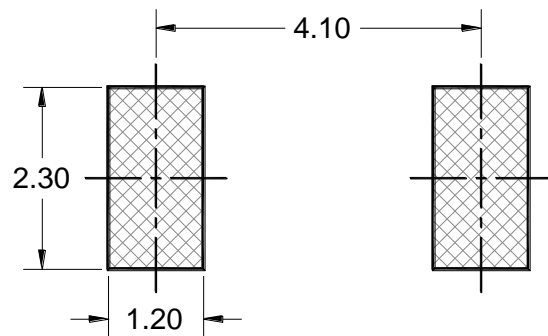
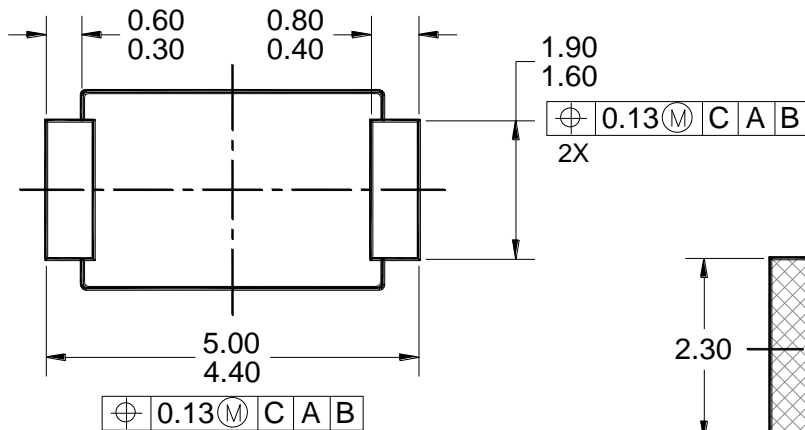
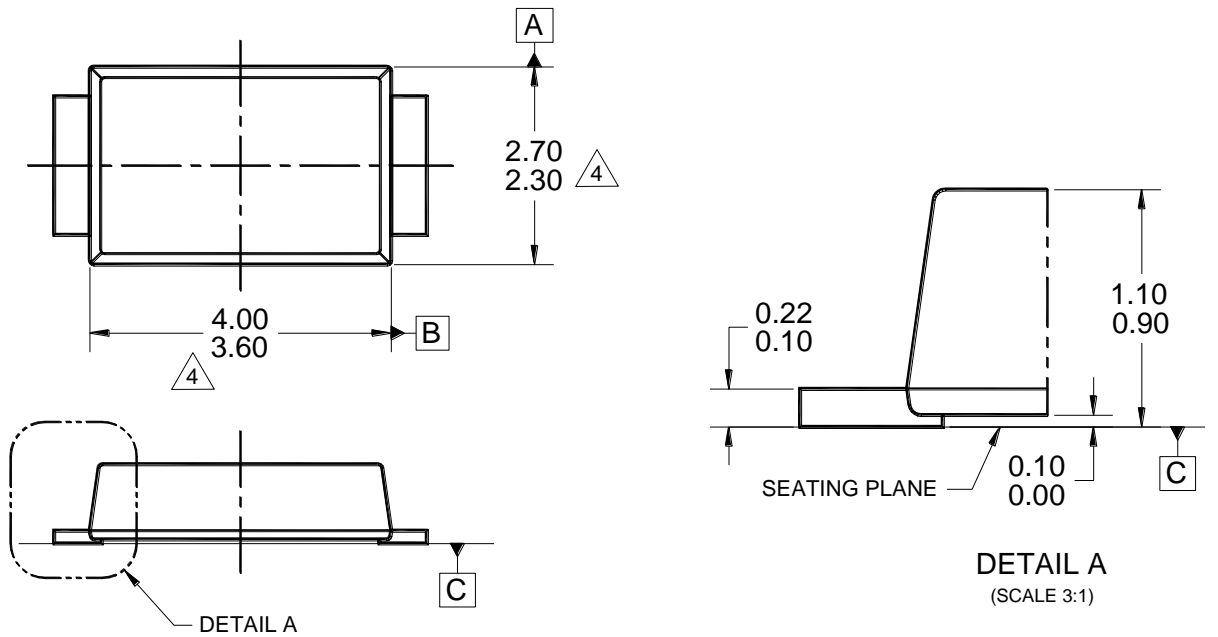


Fig.5 Typical Transient Thermal Impedance



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. MODERATED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. DWG NO. REF: HQ2SD07-SOD128-039 REV A.

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