

2A, 600V Ultra Fast Surface Mount Rectifier

FEATURES

- Planar technology
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Lighting application
- Snubber
- Freewheeling application

MECHANICAL DATA

- Case: DO-214AA (SMB)
- 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: 0.086g (approximately)

| KEY PARAMETERS | | |
|----------------|----------------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 2 | A |
| V_{RRM} | 600 | V |
| I_{FSM} | 35 | A |
| T_{JMAX} | 150 | °C |
| Package | DO-214AA (SMB) | |
| Configuration | Single die | |



DO-214AA (SMB)



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | |
|---|--------------------|-------------|------|
| PARAMETER | SYMBOL | PU2JB | UNIT |
| Marking code on the device | | PU2JB | |
| Repetitive peak reverse voltage | V_{RRM} | 600 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 420 | V |
| Forward current | I_F | 2 | A |
| Surge peak forward current single half sine-wave superimposed on rated load | $t = 8.3\text{ms}$ | 35 | A |
| | $t = 1.0\text{ms}$ | 75 | |
| 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 | $R_{\theta JL}$ | 16 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 68 | °C/W |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 16 | °C/W |

Thermal Performance Note: Units mounted on PCB (10mm x 10mm Cu pad test board)

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|------------|------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage ⁽¹⁾ | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$ | V_F | 1.24 | - | V |
| | $I_F = 2\text{A}, T_J = 25^\circ\text{C}$ | | 1.39 | 1.5 | V |
| | $I_F = 1\text{A}, T_J = 125^\circ\text{C}$ | | 0.98 | - | V |
| | $I_F = 2\text{A}, T_J = 125^\circ\text{C}$ | | 1.14 | - | V |
| Reverse current @ rated V_R ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 2 | μA |
| | $T_J = 125^\circ\text{C}$ | | 7 | - | μA |
| Junction capacitance | 1MHz, $V_R = 4.0\text{V}$ | C_J | 22 | - | pF |
| Reverse recovery time | $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$ | t_{rr} | - | 25 | ns |
| | $I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}, V_R = 30\text{V}$ | | 26 | - | |
| Reverse recovery current | $I_F = 2.0\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}$ | I_{RM} | 2.4 | - | A |
| Reverse recovery charge | | Q_{rr} | 48 | - | nC |
| Reverse recovery time | | t_{rr} | 41 | - | ns |

Notes:

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

| ORDERING INFORMATION | | |
|-----------------------------|----------------|--------------------|
| ORDERING CODE | PACKAGE | PACKING |
| PU2JB | DO-214AA (SMB) | 3,000/ Tape & Reel |

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

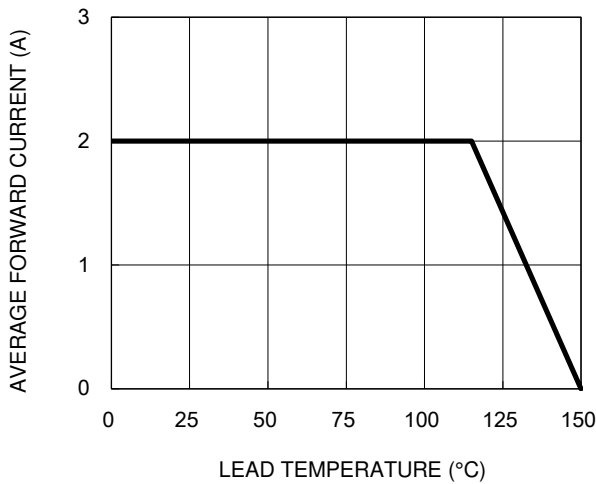


Fig.2 Typical Junction Capacitance

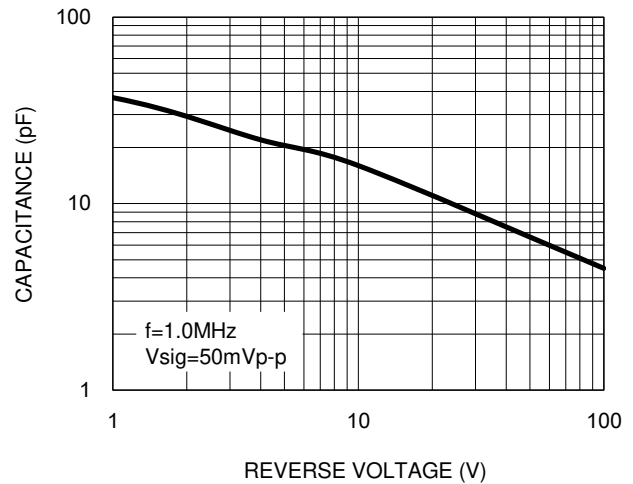


Fig.3 Typical Reverse Characteristics

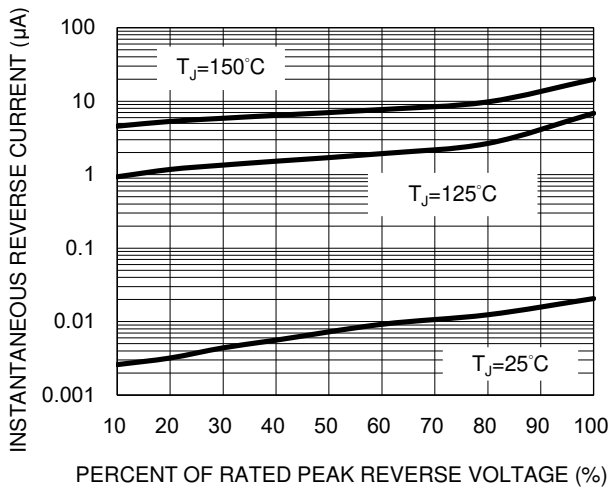


Fig.4 Typical Forward Characteristics

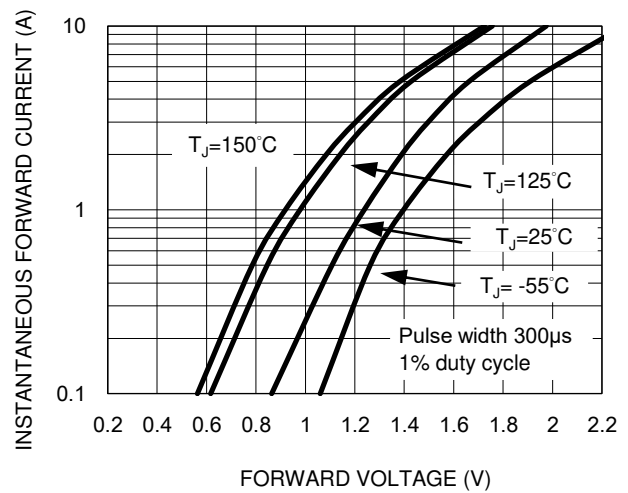
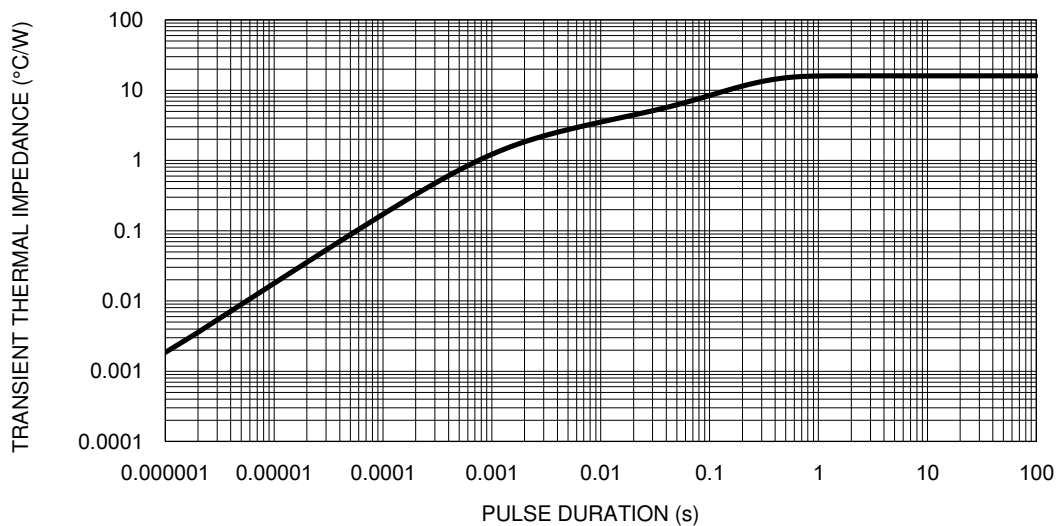
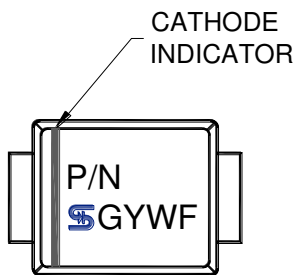
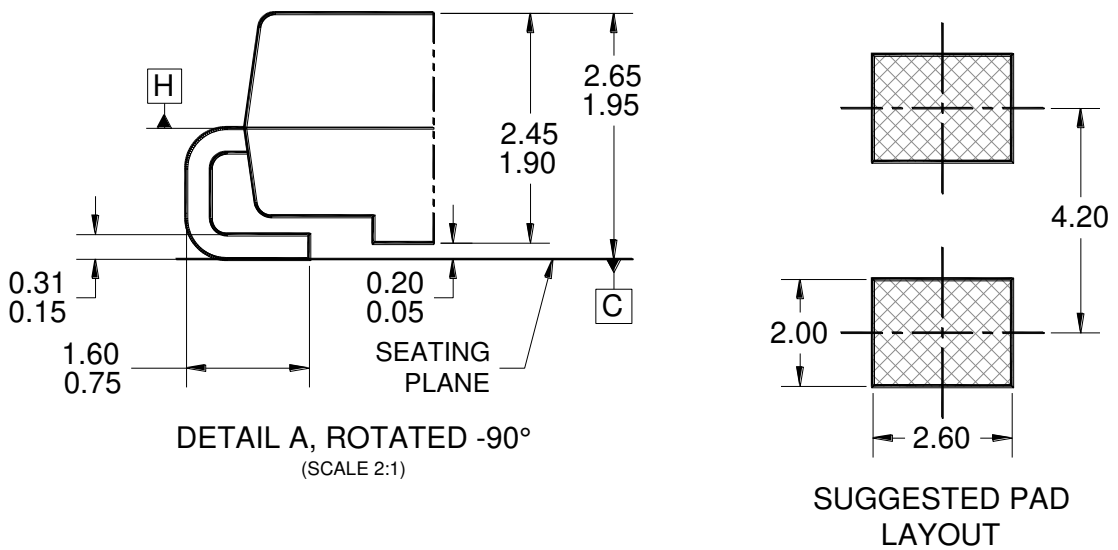
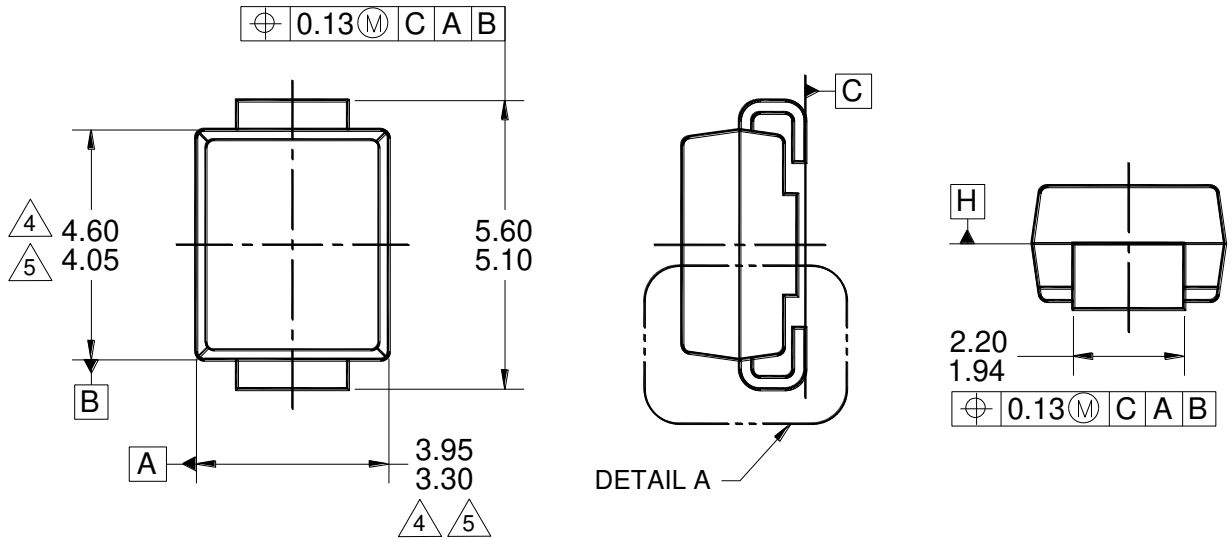


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



MARKING DIAGRAM

P/N = MARKING CODE
G = GREEN COMPOUND
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AA, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMB-035 REV A.

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