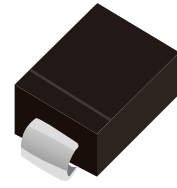
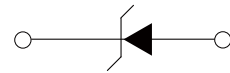


FEATURES

- | Guardring for overvoltage protection
- | Low power loss
- | Extremely fast switching
- | High forward surge capability
- | High frequency operation



DO-214AA(SMB)



Schematic Symbol

APPLICATIONS

- | For use in low voltage high frequency.
- | inverters, freewheeling, DC/DC converters, and polarity protection applications.

APPROVALS

| | |
|------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

MAXIMUM RATINGS (T_A=25°C)

| Parameter | Symbol | SS1020 | SS1030 | SS1040 | SS1050 | SS1060 | SS1080 | SS10100 | SS10150 | SS10200 | Unit |
|---|--|-------------------|--------|--------|--------|--------|-------------|---------|---------|---------|------|
| Marking | | SS1020 | SS1030 | SS1040 | SS1050 | SS1060 | SS1080 | SS10100 | SS10150 | SS10200 | |
| Repetitive Peak Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | 80 | 100 | 150 | 200 | V |
| Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1) | I _O | 10.0 | | | | | | | | | A |
| Surge(Non-repetitive)Forward Current @60Hz Half-sine wave,1 cycle, Ta=25°C | I _{FSM} | 180 | | | | | | | | | A |
| Storage Temperature | T _{stg} | -55 ~+150 | | | | | | | | | °C |
| Junction Temperature | T _j | -55 ~+150°C | | | | | -55 ~+175°C | | | | °C |
| Maximum instantaneous forward voltage drop per diode | V _F (I _{FM} =10.0A) | 0.55 | | | 0.70 | | 0.85 | | 0.95 | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | I _R (Ta=25°C) | 0.2 | | | | | 0.1 | | | | mA |
| | I _R (Ta=100°C) | 20 | | | | | 5.0 | | | | |
| Thermal Resistance | Between junction and ambient | R _{θJ-A} | | | | | | | | | °C/W |
| | Between junction and lead | R _{θJ-L} | | | | | | | | | |
| | | 65 ⁽¹⁾ | | | | | | | | | |
| | | 8 ⁽¹⁾ | | | | | | | | | |

Note (1)

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas

CHARACTERISTIC CURVES

Fig. 1- I_o-T_L Curve

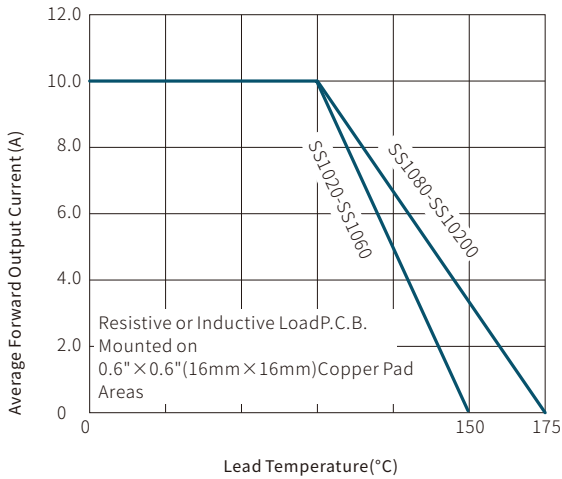


Fig. 2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

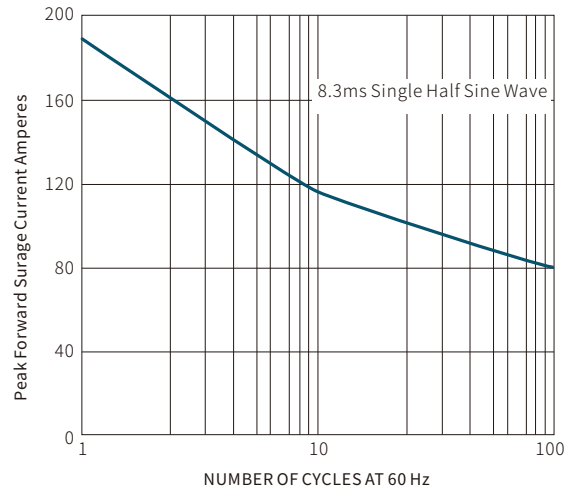


Fig. 3-Forward Voltage

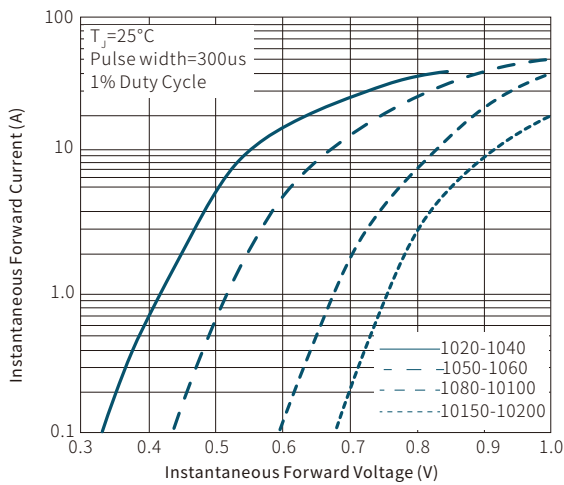
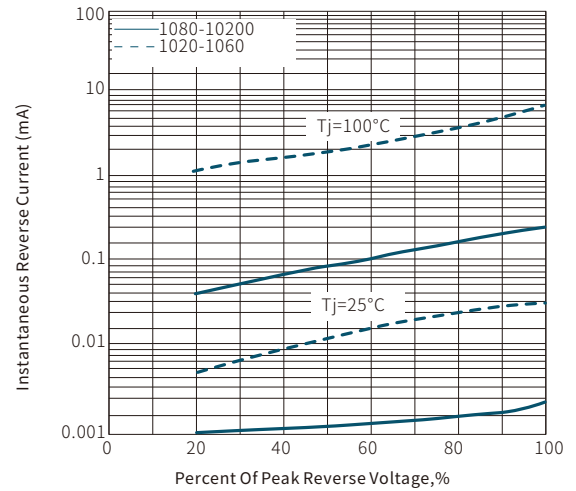
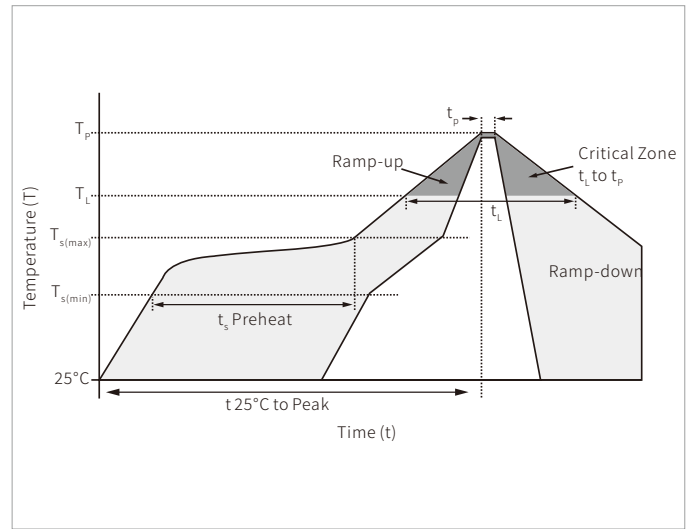


Fig. 4-Typical Reverse Characteristics

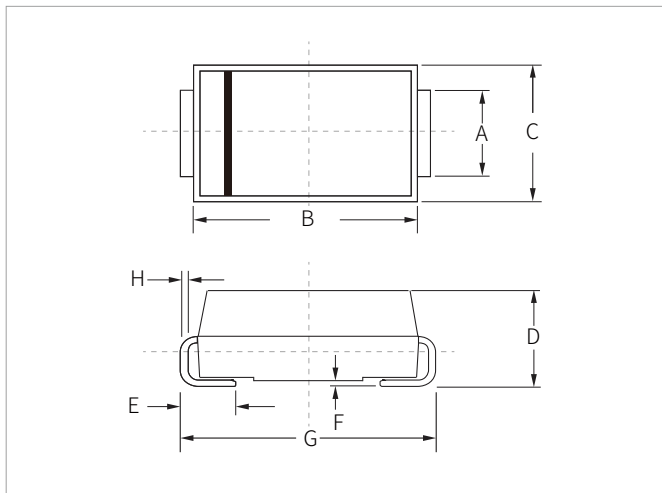


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_l) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |

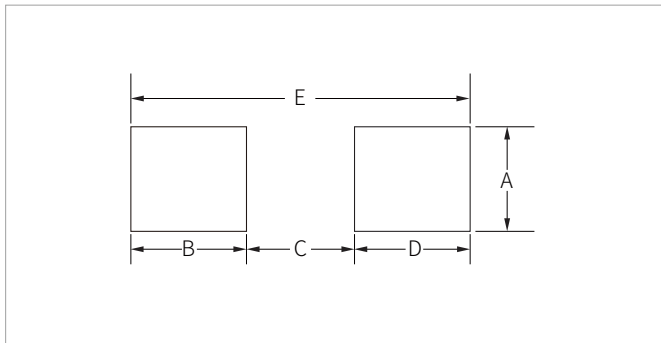


DO-214AA(SMB) PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 1.80 | 2.20 | 0.071 | 0.087 |
| B | 4.30 | 4.70 | 0.170 | 0.185 |
| C | 3.40 | 3.90 | 0.134 | 0.153 |
| D | 2.15 | 2.55 | 0.085 | 0.100 |
| E | 1.00 | 1.50 | 0.039 | 0.059 |
| F | 0.02 | 0.20 | 0.001 | 0.008 |
| G | 5.10 | 5.50 | 0.200 | 0.216 |
| H | 0.15 | 0.30 | 0.006 | 0.012 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|------|----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.20 | - | 0.087 | - |
| B | 1.45 | - | 0.057 | - |
| C | - | 2.55 | - | 0.010 |
| D | 1.45 | - | 0.057 | - |
| E | 5.60REF | | 0.220REF | |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|----------------|-------------------|----------|-----------|
| SS1020-SS10200 | DO-214AA(SMB) | 3000PCS | 13" |

To find your local partner within Semiwell' s website : www.semiwell.com

© 2023 Semiwell Microelectronics Co.,Ltd.

The content of this document has been carefully checked and understood. However, neither Semiwell nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiwell does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiwell. Latest publications and a complete disclaimer can be downloaded from the Semiwell website. All trademarks recognized.