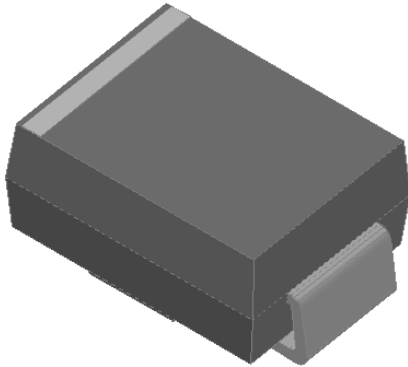


Surface Mount Schottky Rectifier

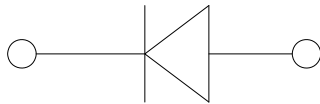


Features

- Guard ring for overvoltage protection
- Low power losses
- Extremely fast switching
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

Typical Applications

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



Mechanical Data

- **Package:** DO-214AA (SMB)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | SS52BQ | SS53BQ | SS54BQ |
|---|------------------|------|-----------|--------|--------|
| Device marking code | | | SS52B | SS53B | SS54B |
| Repetitive peak reverse voltage | V _{RRM} | V | 20 | 30 | 40 |
| Maximum RMS voltage | V _{RMS} | V | 14 | 21 | 28 |
| Maximum DC blocking voltage | V _{DC} | V | 20 | 30 | 40 |
| Maximum average forward rectified current at T _L (Fig.1) | I _O | A | 5.0 | | |
| Surge(non-repetitive)forward current @60Hz half-sine wave,1 cycle, T _J =25°C | I _{FSM} | A | 120 | | |
| Voltage rate of change (rated V _R) | dV/dt | V/μs | 10000 | | |
| Storage temperature | T _{stg} | °C | -55 ~+150 | | |
| Junction temperature | T _J | °C | -55 ~+150 | | |

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | | TYP | MAX | UNIT |
|-------------------------------|----------------|---------------------------|-----------------------|------|------|------|
| Instantaneous forward voltage | V _F | I _F =5A | T _J =25°C | 0.51 | 0.6 | V |
| | | | T _J =125°C | 0.45 | 0.54 | |
| Reverse current | I _R | Rated V _R | T _J =25°C | - | 100 | μA |
| | | | T _J =125°C | - | 20 | mA |
| Typical junction capacitance | C _J | V _R =4V,f=1MHz | | 265 | - | pF |



SS52BQ THRU SS54BQ

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | SS52BQ | SS53BQ | SS54BQ |
|--------------------|----------------------|------|-------------------|--------|--------|
| Thermal resistance | R _{θJA} (1) | °C/W | 63 ⁽¹⁾ | | |
| | R _{θJL} (1) | | 22 ⁽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

■ Characteristics(Typical)

Fig.1:Forward Current Derating Curve

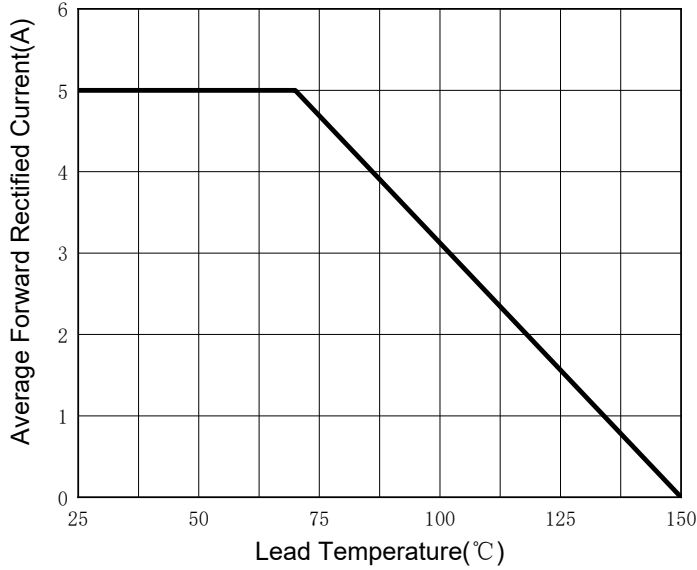


Fig.2:Maximum Non-Repetitive Peak Forward Surge Current

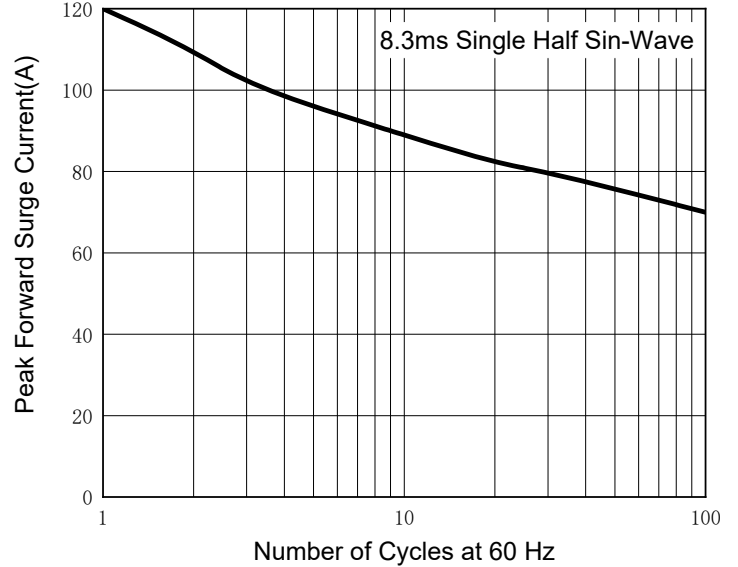


Fig.3:Typical Instantaneous Forward Characteristics

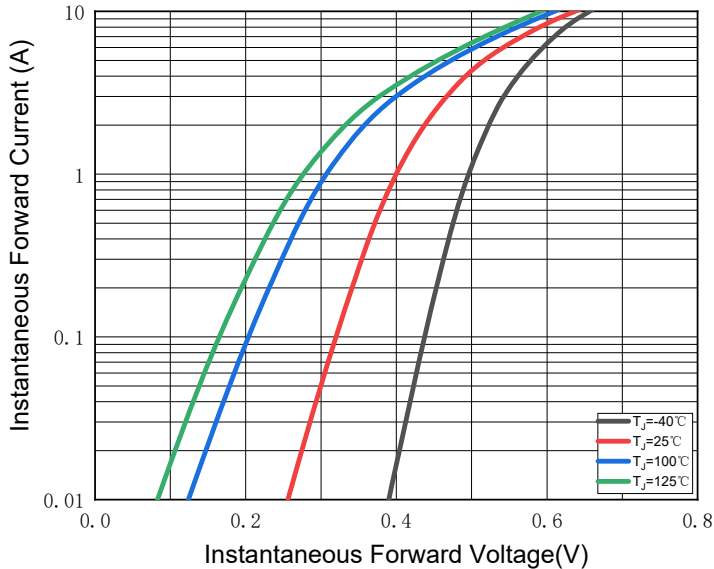
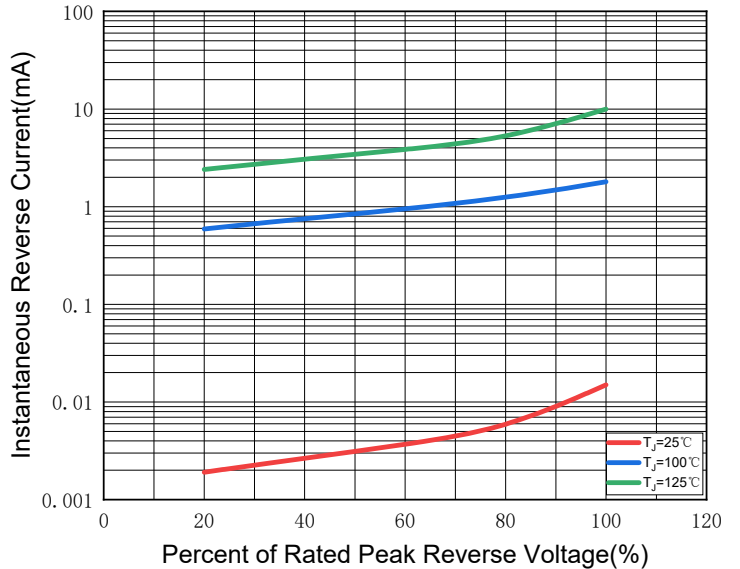


Fig.4:Typical Reverse Leakage Characteristics



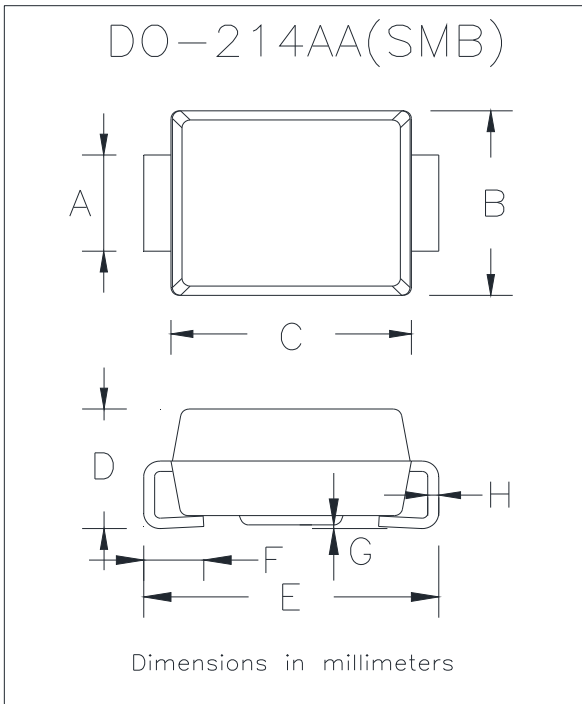
■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|----------------------------|---------------|
| SS52BQ-SS54BQ | F1 | Approximate 0.1003 | 3000 | 48000 | 13" reel |



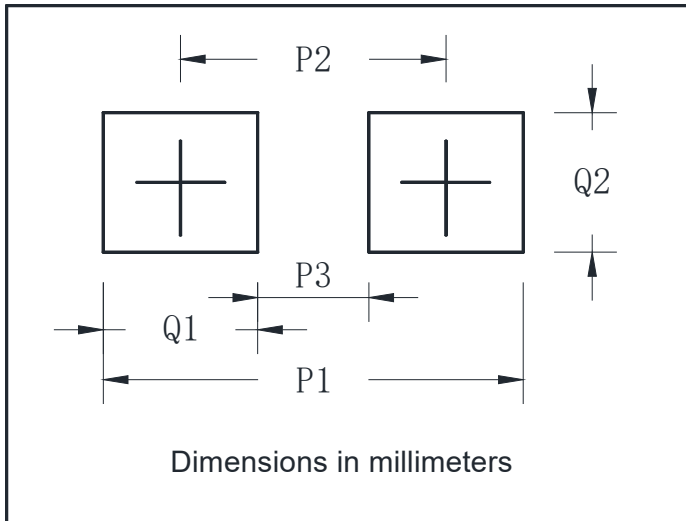
SS52BQ THRU SS54BQ

■ Outline Dimensions



| DO-214AA(SMB) | | |
|---------------|------|------|
| Dim | Min | Max |
| A | 1.85 | 2.15 |
| B | 3.30 | 3.94 |
| C | 4.05 | 4.75 |
| D | 1.99 | 2.61 |
| E | 5.21 | 5.59 |
| F | 0.90 | 1.41 |
| G | 0.05 | 0.20 |
| H | 0.15 | 0.31 |

■ Suggested pad layout



| DO-214AA(SMB) | |
|---------------|-------------|
| Dim | Millimeters |
| P1 | 6.8 |
| P2 | 4.3 |
| P3 | 1.8 |
| Q1 | 2.5 |
| Q2 | 2.3 |



SS52BQ THRU SS54BQ

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