

Fast Recovery Diodes

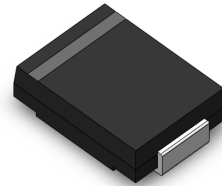
FR5AC~FR5MC
50 to 1000V
5A
DO-214AB(SMC)

Features

- u For surface mounted applications
- u Low profile package
- u Glass Passivated Chip Junction
- u Easy to pick and place
- u Fast reverse recovery time
- u Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- u Case: SMC
- u Terminals: Solderable per MIL-STD-750, Method 2026
- u Approx. Weight: 0.22g / 0.0077oz

DO-214AB(SMC)


Absolute Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half-wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Ratings | Symbol | FR5AC | FR5BC | FR5DC | FR5GC | FR5JC | FR5KC | FR5MC | Unit |
|---|--------------------------------------|------------|-------|-------|-------|-------|-------|-------|---------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current | I_{F(AV)} | 5 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | I_{FSM} | 120 | | | | | | | A |
| Maximum Forward Voltage at 3A | V_F | 1.3 | | | | | | | V |
| Maximum DC Reverse Current Ta = 25℃ at Rated DC Blocking Voltage Ta = 125℃ | I_R | 5 100 | | | | | | | μA |
| Typical Junction Capacitance at V _R =4V, f=1MHz | C_J | 50 | | | | | | | pF |
| Maximum Reverse Recovery Time (1) | t_{rr} | 150 | | | | 250 | 500 | | ns |
| Typical Thermal Resistance (2) | R_{θJA} | 35 | | | | | | | ℃/ W |
| | R_{θJC} | 13 | | | | | | | |
| Operating and Storage Temperature Range | T_J,T_{STG} | -55 ~ +150 | | | | | | | ℃ |

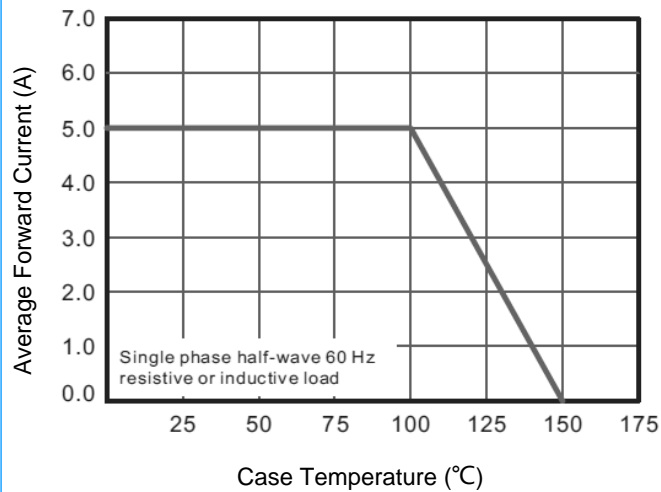
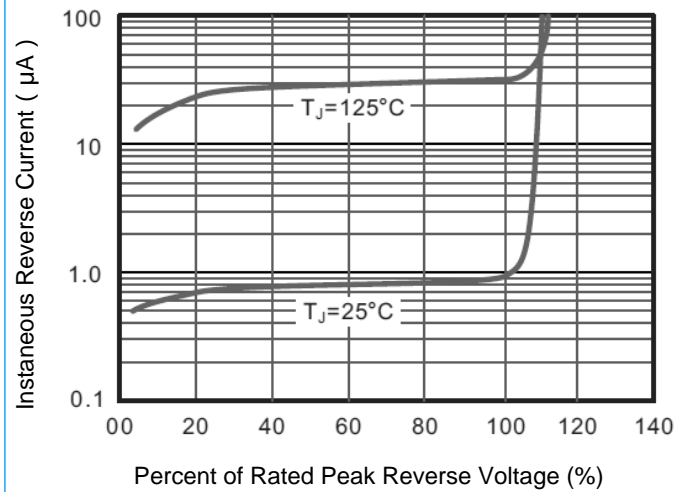
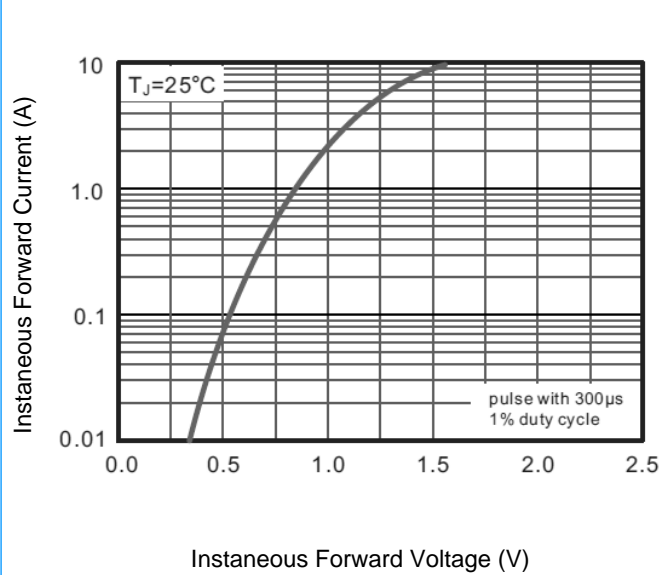
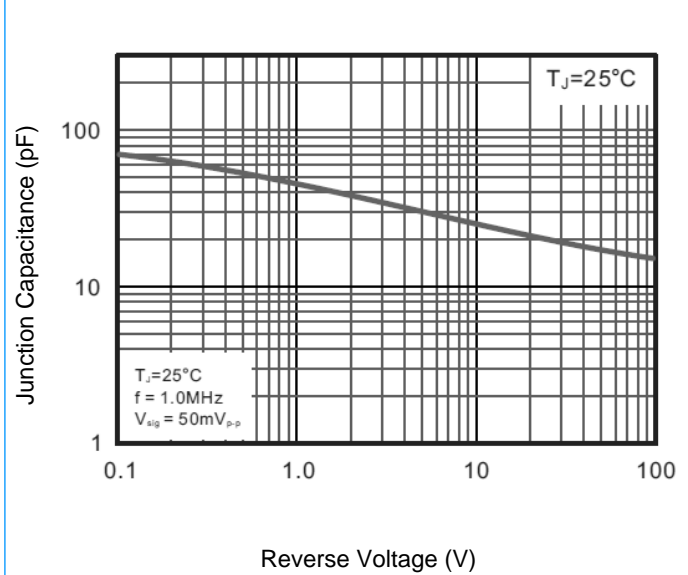
Notes:

- (1) Measured with $I_F = 0.5$ A, $I_R = 1$ A, $t_{rr} = 0.25$ A.
- (2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

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Rating and Characteristic Curves

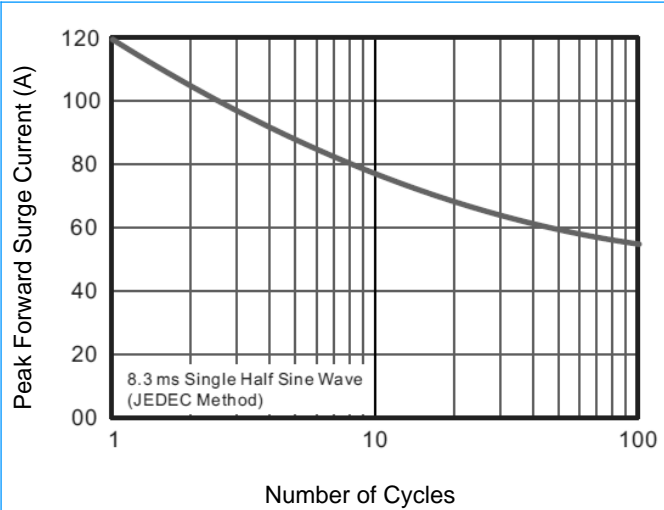
Fig1. Forward Current Derating Curve

Fig2. Typical Reverse Characteristics

Fig3. Typical Instantaneous Forward Characteristics

Fig4. Typical Junction Capacitance


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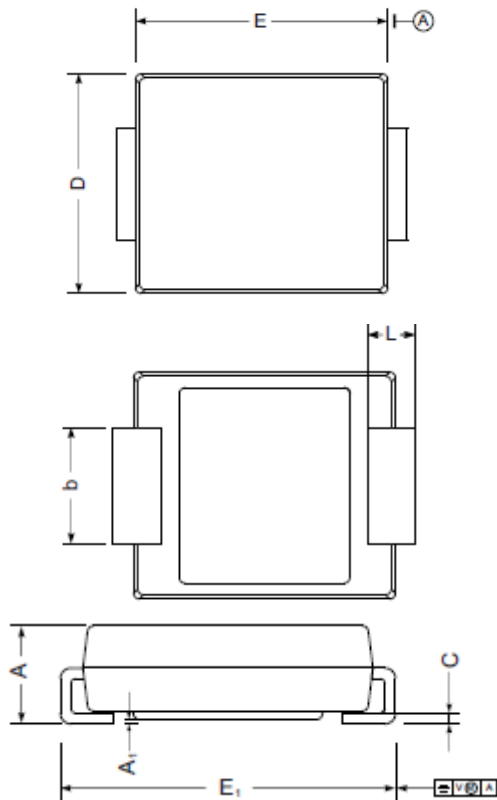
Rating and Characteristic Curves (Continue)

Fig5. Maximum Non-Repetitive Peak Forward Surge Current



SMC Package Outline

Plastic surface mounted package; 2 leads

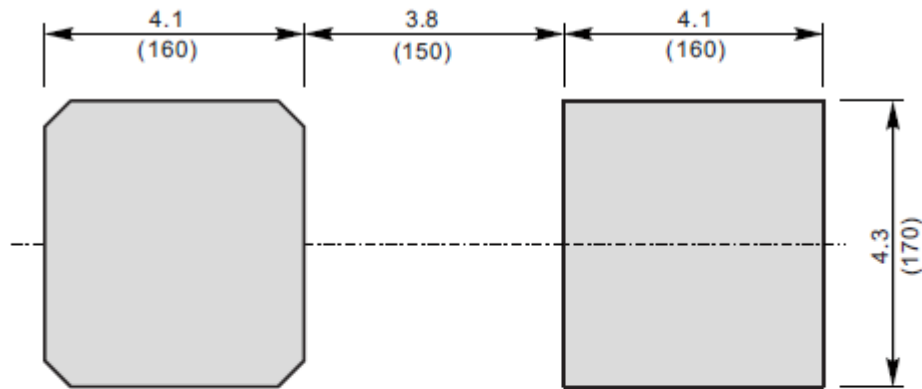


| Dim | MM | | MIL | |
|-----------|------|------|------|------|
| | Min. | Max. | Min. | Max. |
| A | 2.00 | 2.62 | 79 | 103 |
| E | 6.5 | 7.0 | 256 | 276 |
| D | 5.6 | 6.2 | 220 | 244 |
| E1 | 7.6 | 8.0 | 299 | 315 |
| A1 | 0.05 | 0.21 | 2.0 | 8.3 |
| C | 0.15 | 0.31 | 5.9 | 12 |
| L | 0.9 | 1.6 | 35 | 63 |
| b | 2.75 | 3.25 | 108 | 128 |

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The Recommended Mounting Pad Size


Unit : $\frac{\text{mm}}{(\text{mil})}$

Packaging Information

| Part Number | Component Package | Quantity |
|--------------------|-------------------|----------|
| FR5AC~FR5MC | DO-214AB(SMC) | 3000 PCS |