

Silicon Fast Recovery Diode

$V_{RRM} = 50\text{ V} - 600\text{ V}$

$I_F = 6\text{ A}$

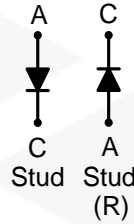
Features

- High Surge Capability
- Types up to 600 V V_{RRM}
- Not ESD Sensitive

Note:

1. Standard polarity: Stud is cathode.
2. Reverse polarity (R): Stud is anode.
3. Stud is base.

DO-4 Package



Maximum ratings, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified ("R" devices have leads reversed)

| Parameter | Symbol | Conditions | FR6A(R)02 | FR6B(R)02 | FR6D(R)02 | FR6G(R)02 | FR6J(R)02 | Unit |
|--|------------|--|------------|------------|------------|------------|------------|------------------|
| Repetitive peak reverse voltage | V_{RRM} | | 50 | 100 | 200 | 400 | 600 | V |
| RMS reverse voltage | V_{RMS} | | 35 | 70 | 140 | 280 | 420 | V |
| DC blocking voltage | V_{DC} | | 50 | 100 | 200 | 400 | 600 | V |
| Continuous forward current | I_F | $T_C \leq 100\text{ }^\circ\text{C}$ | 6 | 6 | 6 | 6 | 6 | A |
| Surge non-repetitive forward current, Half Sine Wave | $I_{F,SM}$ | $T_C = 25\text{ }^\circ\text{C}$, $t_p = 8.3\text{ ms}$ | 135 | 135 | 135 | 135 | 135 | A |
| Operating temperature | T_j | | -55 to 150 | -55 to 150 | -55 to 150 | -55 to 150 | -55 to 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -55 to 150 | -55 to 150 | -55 to 150 | -55 to 150 | -55 to 150 | $^\circ\text{C}$ |

Electrical characteristics, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Conditions | FR6A(R)02 | FR6B(R)02 | FR6D(R)02 | FR6G(R)02 | FR6J(R)02 | Unit |
|-----------------------|--------|---|-----------|-----------|-----------|-----------|-----------|---------------|
| Diode forward voltage | V_F | $I_F = 6\text{ A}$, $T_j = 25\text{ }^\circ\text{C}$ | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | V |
| Reverse current | I_R | $V_R = 50\text{ V}$, $T_j = 25\text{ }^\circ\text{C}$ | 25 | 25 | 25 | 25 | 25 | μA |
| | | $V_R = 50\text{ V}$, $T_j = 150\text{ }^\circ\text{C}$ | 6 | 6 | 6 | 6 | 6 | mA |

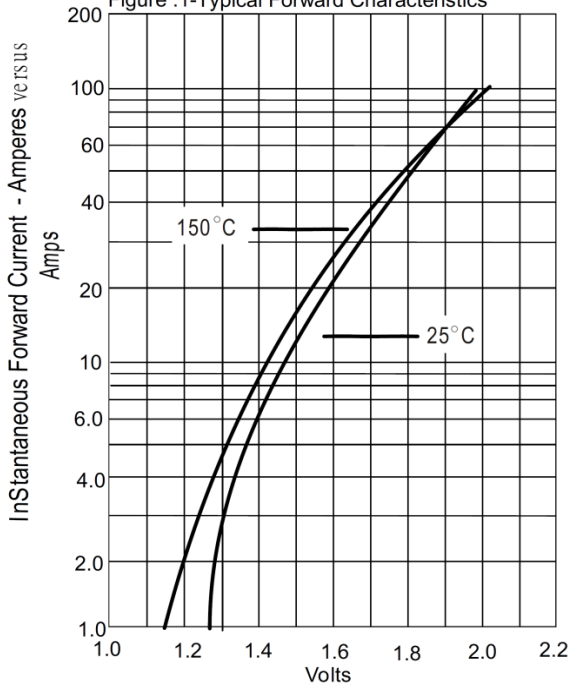
Recovery Time

| Parameter | Symbol | Conditions | FR6A(R)02 | FR6B(R)02 | FR6D(R)02 | FR6G(R)02 | FR6J(R)02 | Unit |
|-------------------------------|----------|---|-----------|-----------|-----------|-----------|-----------|------|
| Maximum reverse recovery time | T_{RR} | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{RR} = 0.25\text{ A}$ | 200 | 200 | 200 | 200 | 250 | nS |

Thermal characteristics

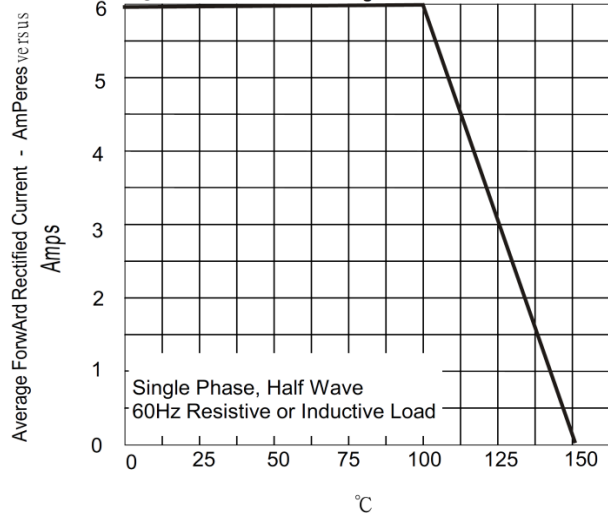
| Parameter | Symbol | Conditions | FR6A(R)02 | FR6B(R)02 | FR6D(R)02 | FR6G(R)02 | FR6J(R)02 | Unit |
|-------------------------------------|------------|------------|-----------|-----------|-----------|-----------|-----------|--------------------|
| Thermal resistance, junction - case | R_{thJC} | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | $^\circ\text{C/W}$ |

Figure .1-Typical Forward Characteristics



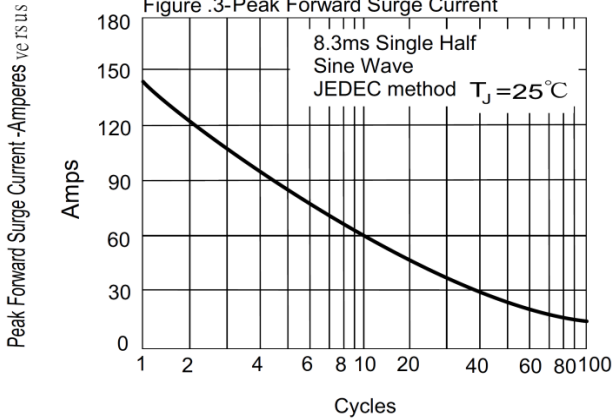
Instantaneous Forward Voltage - Volts

Figure .2-Forward Derating Curve



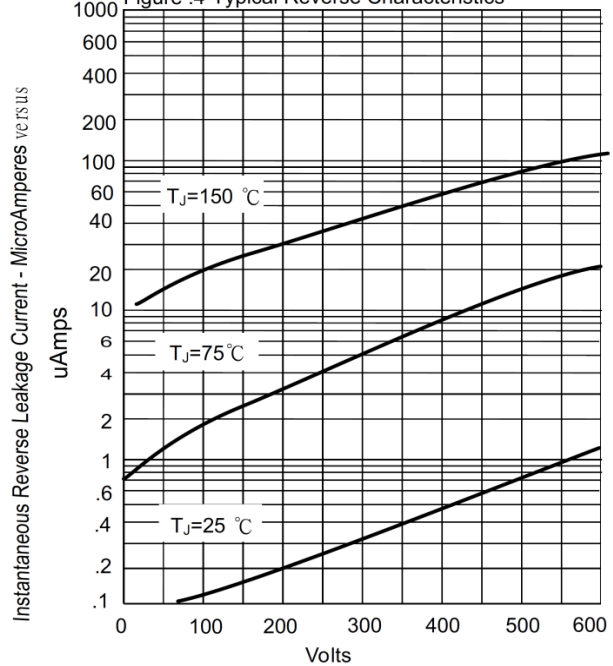
Case Temperature - °C

Figure .3-Peak Forward Surge Current



Number Of Cycles At 60Hz - Cycles

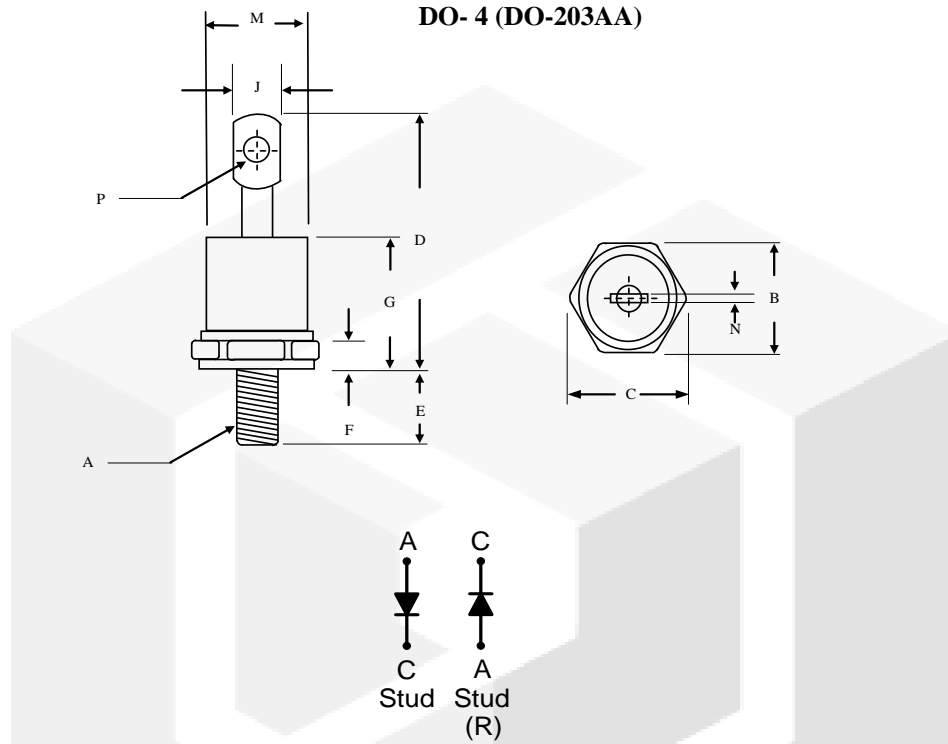
Figure .4-Typical Reverse Characteristics



Reverse Voltage - Volts

Package dimensions and terminal configuration

Product is marked with part number and terminal configuration.



| | Inches | | Millimeters | |
|---|-----------|--------|-------------|-------|
| | Min | Max | Min | Max |
| A | 10-32 UNF | | | |
| B | 0.424 | 0.437 | 10.77 | 11.10 |
| C | ----- | 0.505 | ----- | 12.82 |
| D | ----- | 0.800 | ----- | 20.30 |
| E | 0.453 | 0.492 | 11.50 | 12.50 |
| F | 0.114 | 0.140 | 2.90 | 3.50 |
| G | ----- | 0.405 | ----- | 10.29 |
| J | ----- | 0.216 | ----- | 5.50 |
| M | ----- | φ0.302 | ----- | φ7.68 |
| N | 0.031 | 0.045 | 0.80 | 1.15 |
| P | 0.070 | 0.79 | 1.80 | 2.00 |