



Silicon Fast Recovery Diode

FR12B05 thru FR12JR05

$V_{RRM} = 100\text{ V} - 1000\text{ V}$

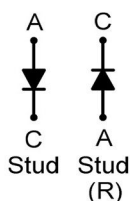
$I_F = 12\text{ A}$

Features

- High Surge Capability
- Types up to 1000 V V_{RRM}

Note:

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



DO-4 Package



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

| Parameter | Symbol | Conditions | FR12B(R)05 | FR12D(R)05 | FR12G(R)05 | FR12J(R)05 | Unit |
|--|------------|--|------------|------------|------------|------------|------|
| Repetitive peak reverse voltage | V_{RRM} | | 100 | 200 | 400 | 600 | V |
| RMS reverse voltage | V_{RMS} | | 70 | 140 | 280 | 420 | V |
| DC blocking voltage | V_{DC} | | 100 | 200 | 400 | 600 | V |
| Continuous forward current | I_F | $T_C \leq 100\text{ °C}$ | 12 | 12 | 12 | 12 | A |
| Surge non-repetitive forward current, Half Sine Wave | $I_{F,SM}$ | $T_C = 25\text{ °C}$, $t_p = 8.3\text{ ms}$ | 180 | 180 | 180 | 180 | A |
| Operating temperature | T_j | | -65 to 150 | -65 to 150 | -65 to 150 | -65 to 150 | °C |
| Storage temperature | T_{stg} | | -65 to 175 | -65 to 175 | -65 to 175 | -65 to 175 | °C |

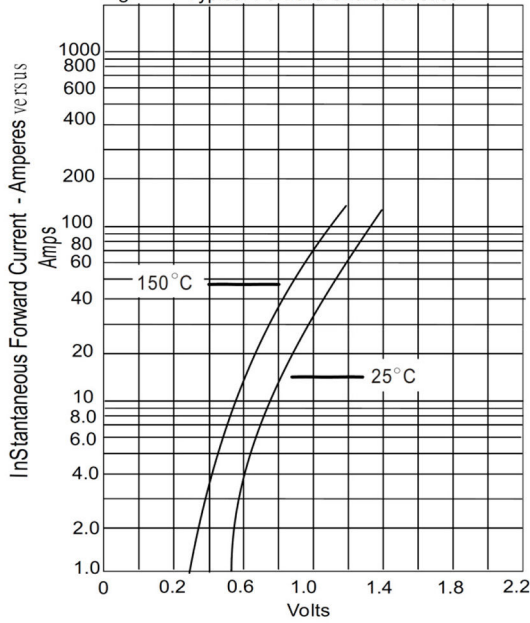
Electrical characteristics, at $T_j = 25\text{ °C}$, unless otherwise specified

| Parameter | Symbol | Conditions | FR12B(R)05 | FR12D(R)05 | FR12G(R)05 | FR12J(R)05 | Unit |
|-------------------------------------|------------|---|------------|------------|------------|------------|---------------|
| Diode forward voltage | V_F | $I_F = 12\text{ A}$, $T_j = 25\text{ °C}$ | 1.4 | 1.4 | 1.4 | 1.4 | V |
| Reverse current | I_R | $V_R = 100\text{ V}$, $T_j = 25\text{ °C}$ | 25 | 25 | 25 | 25 | μA |
| | | $V_R = 100\text{ V}$, $T_j = 150\text{ °C}$ | 6 | 6 | 6 | 6 | mA |
| Recovery Time | | | | | | | |
| Maximum reverse recovery time | T_{RR} | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{RR} = 0.25\text{ A}$ | 500 | 500 | 500 | 500 | nS |
| Thermal characteristics | | | | | | | |
| Thermal resistance, junction - case | R_{thJC} | | 2.0 | 2.0 | 2.0 | 2.0 | °C/W |



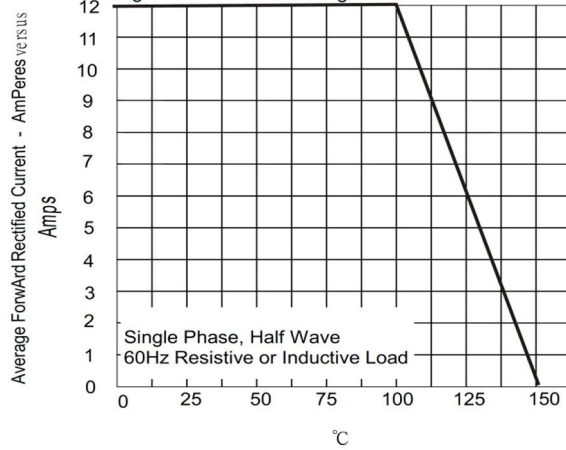


Figure .1-Typical Forward Characteristics

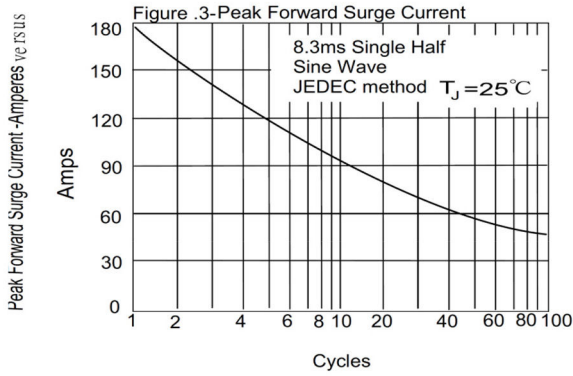


Instantaneous Forward Voltage - Volts

Figure .2-Forward Derating Curve



Case Temperature - °C



Number Of Cycles At 60Hz - Cycles

Figure .4- Typical Reverse Characteristics

