# Silicon Fast Recovery Diode

$V_{RRM}$ = 100 V - 1000 V
$I_F$ = 40 A

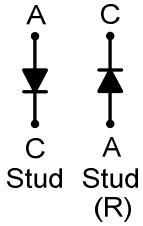
**Features**

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

**DO-5 Package**

**Note:**

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



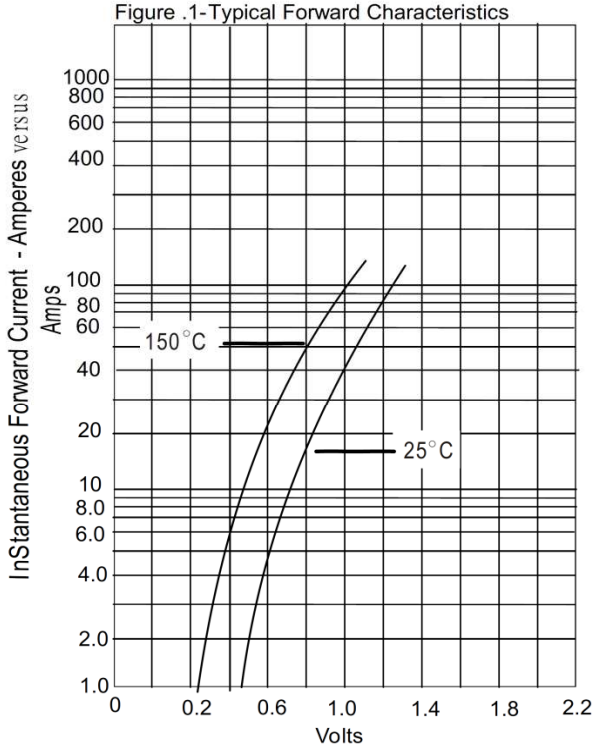

**Maximum ratings, at $T_j$ = 25 °C, unless otherwise specified ("R" devices have leads reversed)**

| Parameter | Symbol | Conditions | FR40B(R)05 | FR40D(R)05 | FR40G(R)05 | FR40J(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 | $I_F$ | $T_C \leq 100$ °C | 40 | 40 | 40 | 40 | A |
| Surge non-repetitive forward current, Half Sine Wave | $I_{F,SM}$ | $T_C$ = 25 °C, $t_p$ = 8.3 ms | 500 | 500 | 500 | 500 | A |
| Operating temperature | $T_j$ | | -40 to 125 | -40 to 125 | -40 to 125 | -40 to 125 | °C |
| Storage temperature | $T_{stg}$ | | -40 to 150 | -40 to 150 | -40 to 150 | -40 to 150 | °C |

**Electrical characteristics, at Tj = 25 °C, unless otherwise specified**

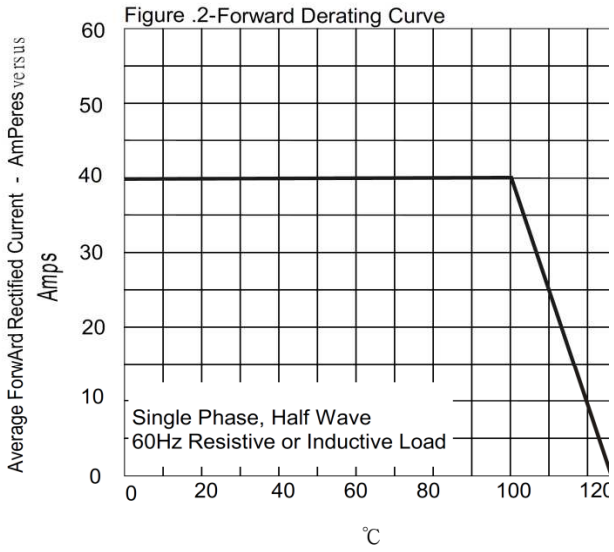
| Parameter | Symbol | Conditions | FR40B(R)05 | FR40D(R)05 | FR40G(R)05 | FR40J(R)05 | Unit |
|---|---|---|---|---|---|---|---|
| Diode forward voltage | $V_F$ | $I_F$ = 40 A, $T_j$ = 25 °C | 1.4 | 1.4 | 1.4 | 1.4 | V |
| Reverse current | $I_R$ | $V_R$ = 100 V, $T_j$ = 25 °C | 25 | 25 | 25 | 25 | µA |
| | | $V_R$ = 100 V, $T_j$ = 125 °C | 10 | 10 | 10 | 10 | mA |
| **Recovery Time** | | | | | | | |
| Maximum reverse recovery time | $T_{RR}$ | $I_F$=0.5 A, $I_R$=1.0 A, $I_{RR}$= 0.25 A | 500 | 500 | 500 | 500 | nS |
| **Thermal characteristics** | | | | | | | |
| Thermal resistance, junction - case | $R_{thJC}$ | | 0.8 | 0.8 | 0.8 | 0.8 | °C/W |

Figure .1-Typical Forward Characteristics



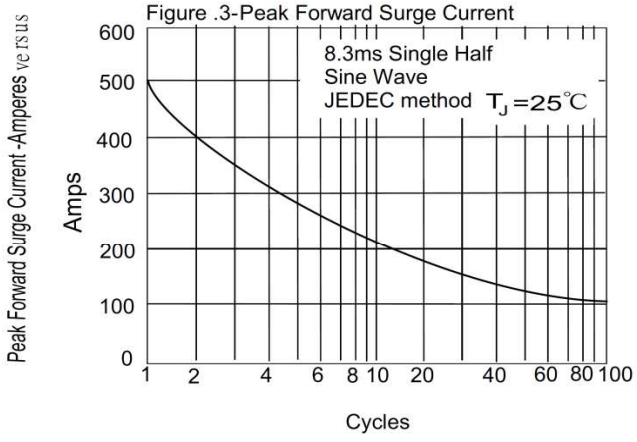

Instantaneous Forward Voltage - Volts

Figure .2-Forward Derating Curve



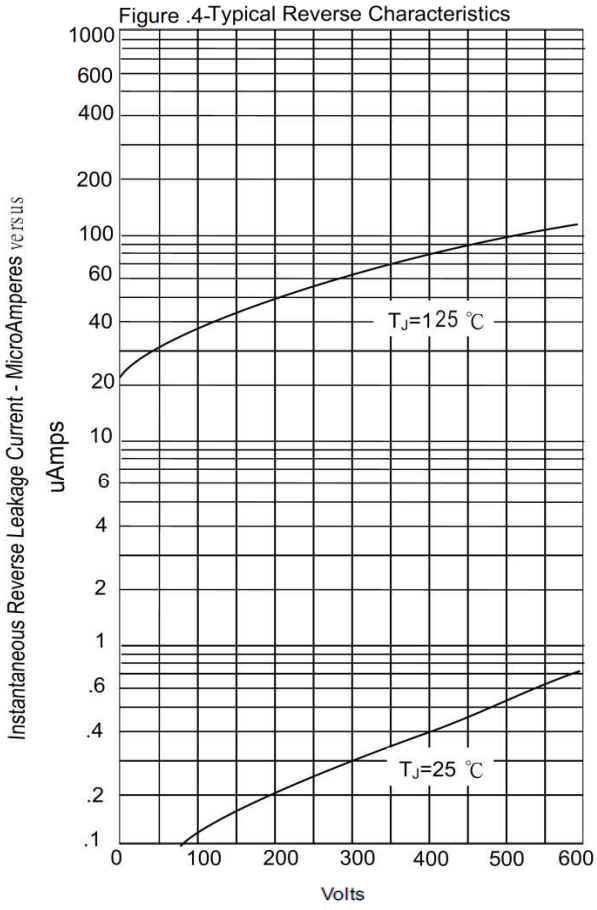

Case Temperature - ℃

Figure .3-Peak Forward Surge Current




Number Of Cycles At 60Hz - Cycles

Figure .4-Typical Reverse Characteristics




Percent Of Rated Peak Reverse Voltage - Volts