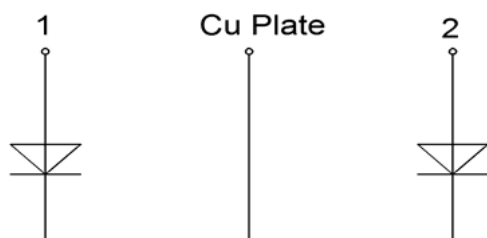


Features

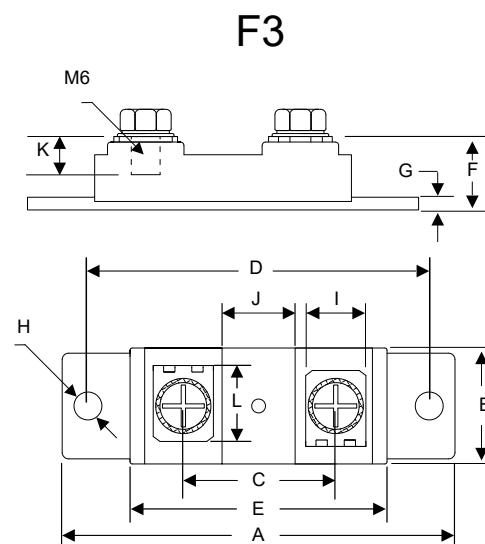
- Lead Free Finish/RoHS Compliant (NOTE 1)("P" Suffix designates RoHS Compliant. See ordering information)
- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

Applications

- Inversion Welder
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Power Factor Correction (PFC) Circuit
- Converter & Chopper



**400 Amp
FRED Modules
600 Volts**



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 3.602 | 3.642 | 91.50 | 92.50 | |
| B | 1.043 | 1.083 | 26.50 | 27.50 | |
| C | 1.358 | 1.398 | 34.50 | 35.50 | |
| D | 3.130 | 3.169 | 79.50 | 80.50 | |
| E | 2.343 | 2.382 | 59.50 | 60.50 | |
| F | 0.650 | 0.689 | 16.50 | 17.50 | |
| G | 0.110 | 0.126 | 2.80 | 3.20 | |
| H | 0.244 | 0.268 | 6.20 | 6.80 | ∅ |
| I | 0.543 | 0.559 | 13.80 | 14.20 | |
| J | 0.650 | 0.689 | 16.50 | 17.50 | |
| K | 0.335 | 0.374 | 8.50 | 9.50 | |
| L | 0.717 | 0.740 | 18.20 | 18.80 | |

Note:1. High Temperature Solder Exemptions Applied, See EU Directive Annex 7a.

Maximum Ratings

| Symbol | Conditions | Values | Units |
|--------------|--|-------------|----------------------|
| V_R | | 600 | V |
| V_{RRM} | | 600 | V |
| $I_{F(AV)}$ | $T_C=125^{\circ}\text{C}$, Per Diode | 200 | A |
| | $T_C=125^{\circ}\text{C}$, Per Moudle | 400 | A |
| | $T_C=125^{\circ}\text{C}$, 20KHz, Per Moudle | 300 | A |
| $I_{F(RMS)}$ | $T_C=125^{\circ}\text{C}$, Per Diode | 295 | A |
| I_{FSM} | 1/2 Cycle , 50Hz, Sine | 3500 | A |
| | 1/2 Cycle , 60Hz, Sine | 4000 | A |
| I^2t | $T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine | 61250 | A^2s |
| | $T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine | 80000 | A^2s |
| P_D | | 2080 | W |
| T_J | | -40 to +150 | $^{\circ}\text{C}$ |
| T_{STG} | | -40 to +125 | $^{\circ}\text{C}$ |
| Torque | Recommended (M6) | 3~4.7 | N·m |
| Torque | Recommended (M6) | 3~4.7 | N·m |
| Weight | | 92 | g |

Thermal Characteristics

| Symbol | Conditions | Values | Units |
|---------------|------------|--------|----------------------|
| $R_{th(j-c)}$ | Per diode | 0.06 | $^{\circ}\text{C/W}$ |

Electrical Characteristics

| Symbol | Conditions | Values | | | Units |
|-----------|--|--------|------|------|-------|
| | | Min. | Typ. | Max. | |
| I_{RM} | $V_R=600\text{V}$ | -- | -- | 1 | mA |
| | $V_R=600\text{V}$, $T_J=125^{\circ}\text{C}$ | -- | -- | 20 | mA |
| V_F | $I_F=200\text{A}$ | -- | 1.15 | 1.25 | V |
| | $I_F=200\text{A}$, $T_J=125^{\circ}\text{C}$ | -- | 1.05 | | V |
| trr | $I_F=1\text{A}$, $V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$ | -- | 50 | -- | ns |
| trr | $V_R=300\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=25^{\circ}\text{C}$ | -- | 130 | -- | ns |
| I_{RRM} | | -- | 14 | -- | A |
| trr | $V_R=300\text{V}$, $I_F=200\text{A}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_J=125^{\circ}\text{C}$ | -- | 220 | -- | ns |
| I_{RRM} | | -- | 22 | -- | A |

Performance Curves

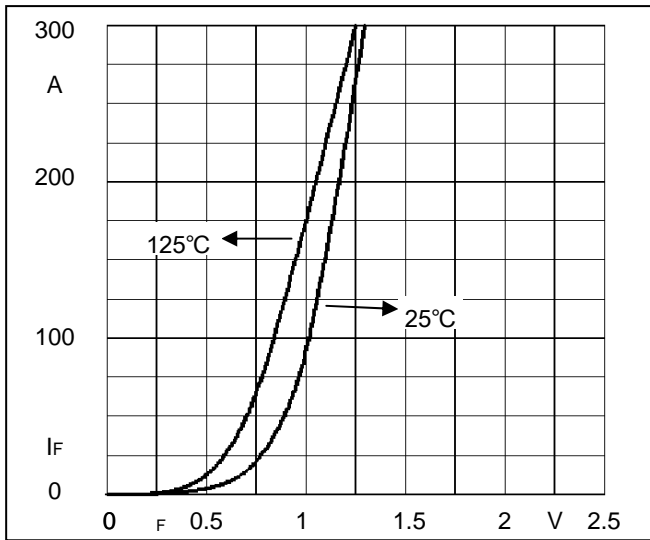


Fig1. Forward Voltage Drop vs Forward Current

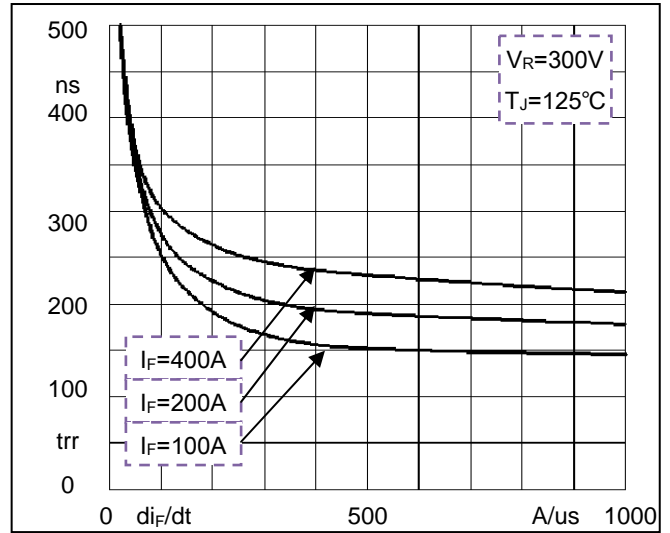


Fig2. Reverse Recovery Time vs di_F/dt

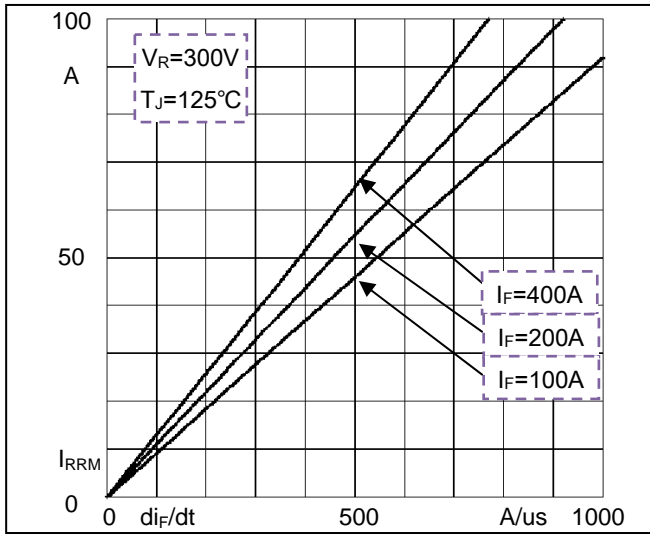


Fig3. Reverse Recovery Current vs di_F/dt

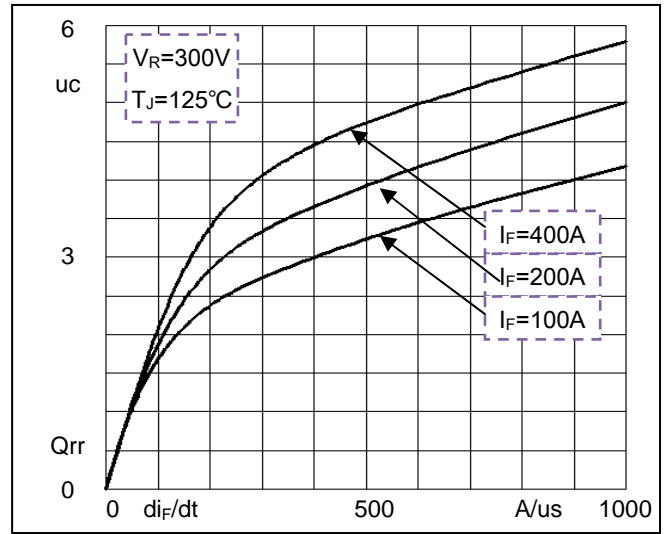


Fig4. Reverse Recovery Charge vs di_F/dt

Ordering Information

| Device | Packing |
|----------------|-----------------------------|
| Part Number-BP | Bulk: 10PCS/BOX ;100PCS/CTN |

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