

FD2000DU-120

HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

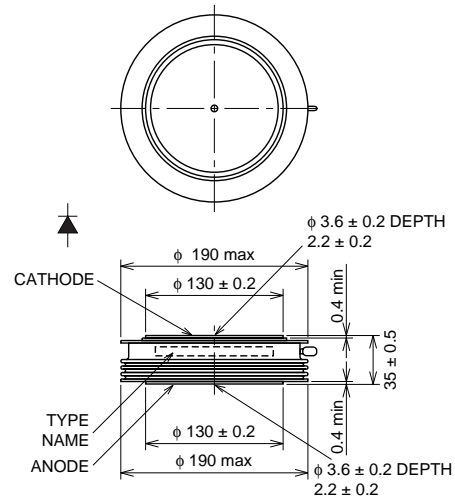
FD2000DU-120



- IF(AV) Average forward current 1700A
- VRRM Repetitive peak reverse voltage 6000V
- QRR Reverse recovery charge 1500μC
- Press pack type

OUTLINE DRAWING

Dimension in mm



APPLICATION

High-power inverters, Fly-wheel diodes in DC choppers, Power supplies as high frequency rectifiers

MAXIMUM RATINGS

| Symbol | Parameter | Voltage class | | Unit |
|--------|-------------------------------------|---------------|--|------|
| | | 120 | | |
| VRRM | Repetitive peak reverse voltage | 6000 | | V |
| VRSM | Non-repetitive peak reverse voltage | 6000 | | V |
| VR(DC) | DC reverse voltage | 4800 | | V |

| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------|-----------------------------------|---|-----------------------|------------------|
| IF(RMS) | RMS forward current | | 2670 | A |
| IF(AV) | Average forward current | f = 60Hz, sine wave θ = 180°, Tf = 65°C | 1700 | A |
| IFSM | Surge forward current | One half cycle at 60Hz, non-repetitive | 40 | kA |
| I ² t | Current-squared, time integration | One cycle at 60Hz | 6.7 × 10 ⁶ | A ² s |
| Tj | Junction temperature | | -40 ~ +125 | °C |
| Tstg | Storage temperature | | -40 ~ +150 | °C |
| — | Mounting force required | Recommended value 108 | 98 ~ 118 | kN |
| — | Weight | Standard value | 4600 | g |

ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|----------|---------------------------------|--|--------|-----|-------|------|
| | | | Min | Typ | Max | |
| IRRM | Repetitive peak reverse current | Tj = 125°C, VRRM Applied | — | — | 300 | mA |
| VFM | Forward voltage | Tj = 125°C, IFM = 6300A, Instantaneous measurement | — | — | 5.0 | V |
| QRR | Reverse recovery charge | IFM = 2000A, diF/dt = -30A/μs, VR = 150V, Tj = 125°C | — | — | 1500 | μC |
| Rth(j-f) | Thermal resistance | Junction to fin | — | — | 0.009 | °C/W |

Aug.1998

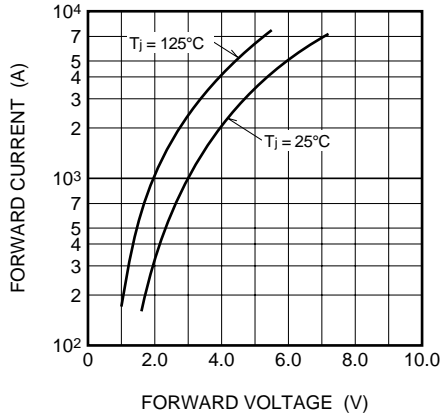


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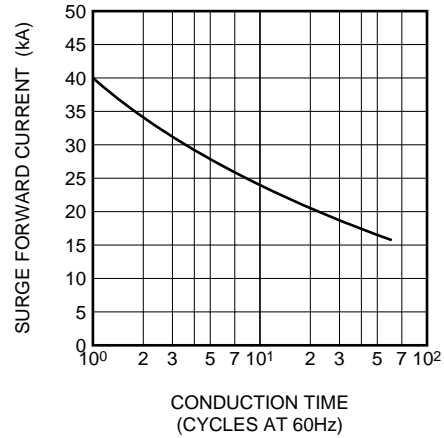
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PERFORMANCE CURVES

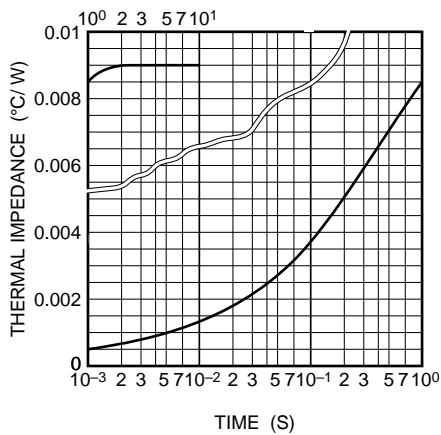
MAXIMUM FORWARD CHARACTERISTICS



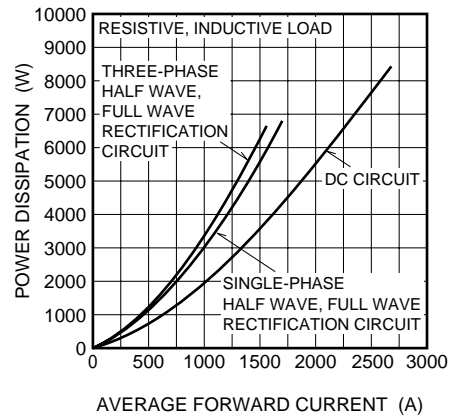
RATED SURGE FORWARD CURRENT



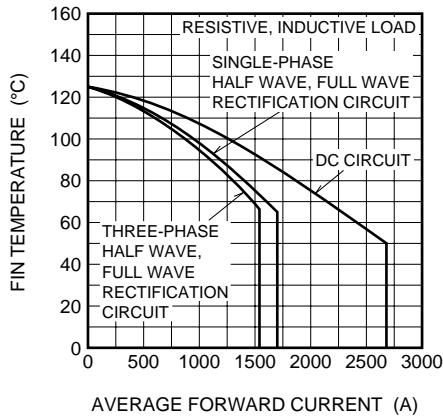
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



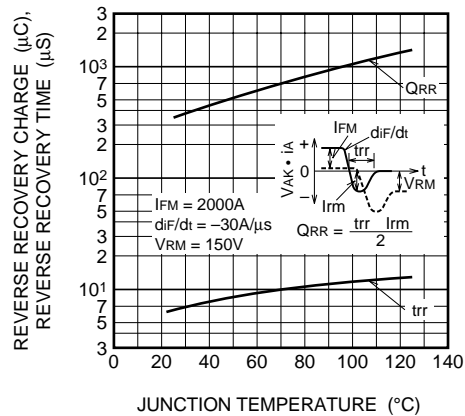
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE (TYPICAL)



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