Low switching losses
Low reverse recovery charge
High power cycling capability

# Fast Recovery Diode
# Type DF373-2000-36

| | | | | |
|---|---|---|---|---|
| Average forward current | | $I_{FAV}$ | 2000 A | |
| Repetitive peak reverse voltage | | $V_{RRM}$ | 3000 ÷ 3600 V | |
| Reverse recovery time | | $t_{rr}$ | 16.0 μs | |
| $V_{RRM}$, V | 3000 | 3200 | 3400 | 3600 |
| Voltage code | 30 | 32 | 34 | 36 |
| $T_j$, °C | – 60 ÷ 125 | | | |

## MAXIMUM ALLOWABLE RATINGS

| Symbols and parameters | | Units | Values | Test conditions | |
|---|---|---|---|---|---|
| **ON-STATE** | | | | | |
| $I_{FAV}$ | Average forward current | A | 2000<br>2910 | $T_c$=84 °C; Double side cooled;<br>$T_c$=55 °C; Double side cooled;<br>180° half-sine wave; 50 Hz | |
| $I_{FRMS}$ | RMS forward current | A | 3140 | $T_c$=84 °C; Double side cooled;<br>180° half-sine wave; 50 Hz | |
| $I_{FSM}$ | Surge forward current | kA | 40.0<br>46.0 | $T_j$=$T_{j\,max}$<br>$T_j$=25 °C | 180° half-sine wave; 50 Hz<br>($t_p$=10 ms); single pulse;<br>$V_R$=0 V; |
| | | | 42.0<br>48.0 | $T_j$=$T_{j\,max}$<br>$T_j$=25 °C | 180° half-sine wave; 60 Hz<br>($t_p$=8.3 ms); single pulse;<br>$V_R$=0 V; |
| $I^2t$ | Safety factor | $A^2s\cdot10^3$ | 8000<br>10580 | $T_j$=$T_{j\,max}$<br>$T_j$=25 °C | 180° half-sine wave; 50 Hz<br>($t_p$=10 ms); single pulse;<br>$V_R$=0 V; |
| | | | 7320<br>9560 | $T_j$=$T_{j\,max}$<br>$T_j$=25 °C | 180° half-sine wave; 60 Hz<br>($t_p$=8.3 ms); single pulse;<br>$V_R$=0 V; |
| **BLOCKING** | | | | | |
| $V_{RRM}$ | Repetitive peak reverse voltages | V | 3000÷3600 | $T_{j\,min}$< $T_j$ <$T_{j\,max}$;<br>180° half-sine wave; 50 Hz; | |
| $V_{RSM}$ | Non-repetitive peak reverse voltages | V | 3100÷3700 | $T_{j\,min}$< $T_j$ <$T_{j\,max}$;<br>180° half-sine wave; 50 Hz;single pulse; | |
| $V_R$ | Reverse continuous voltages | V | 0.75·$V_{RRM}$ | $T_j$=$T_{j\,max}$; | |
| **THERMAL** | | | | | |
| $T_{stg}$ | Storage temperature | °C | – 60 ÷ 125 | | |
| $T_j$ | Operating junction temperature | °C | – 60 ÷ 125 | | |
| **MECHANICAL** | | | | | |
| F | Mounting force | kN | 40.0 ÷ 50.0 | | |
| a | Acceleration | $m/s^2$ | 50<br>100 | Device unclamped<br>Device clamped | |

## CHARACTERISTICS

| Symbols and parameters | | Units | Values | Conditions | |
|---|---|---|---|---|---|
| **ON-STATE** | | | | | |
| $V_{FM}$ | Peak forward voltage, max | V | 2.10 | $T_j$=25 °C; $I_{FM}$=6280 A | |
| $V_{F(TO)}$ | Forward threshold voltage, max | V | 1.40 | $T_j=T_{j\ max}$; 0.5 π $I_{FAV}$ < $I_T$ < 1.5 π $I_{FAV}$ | |
| $r_T$ | Forward slope resistance, max | mΩ | 0.200 | | |
| **BLOCKING** | | | | | |
| $I_{RRM}$ | Repetitive peak reverse current, max | mA | 200 | $T_j=T_{j\ max}$; $V_R=V_{RRM}$ | |
| **SWITCHING** | | | | | |
| $Q_{rr}$ | Total recovered charge, max | μC | 7000 | $T_j=T_{j\ max}$; $I_{FM}$= $I_{FAV}$; $di_R/dt$=-100 A/μs; $V_R$=100 V; | |
| $t_{rr}$ | Reverse recovery time, max | μs | 16.0 | | |
| $I_{rrM}$ | Peak reverse recovery current, max | A | 875 | | |
| **THERMAL** | | | | | |
| $R_{thjc}$ | Thermal resistance, junction to case, max | °C/W | 0.0085 | Direct current | Double side cooled |
| $R_{thjc-A}$ | | | 0.0187 | | Anode side cooled |
| $R_{thjc-K}$ | | | 0.0153 | | Cathode side cooled |
| $R_{thck}$ | Thermal resistance, case to heatsink, max | °C/W | 0.0020 | Direct current | |
| **MECHANICAL** | | | | | |
| w | Weight, typ | g | 1500 | | |
| $D_s$ | Surface creepage distance | mm (inch) | 41.40 (1.630) | | |
| $D_a$ | Air strike distance | mm (inch) | 23.10 (0.909) | | |

### PART NUMBERING GUIDE

| DF | 373 | 2000 | 36 | T3 | N |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

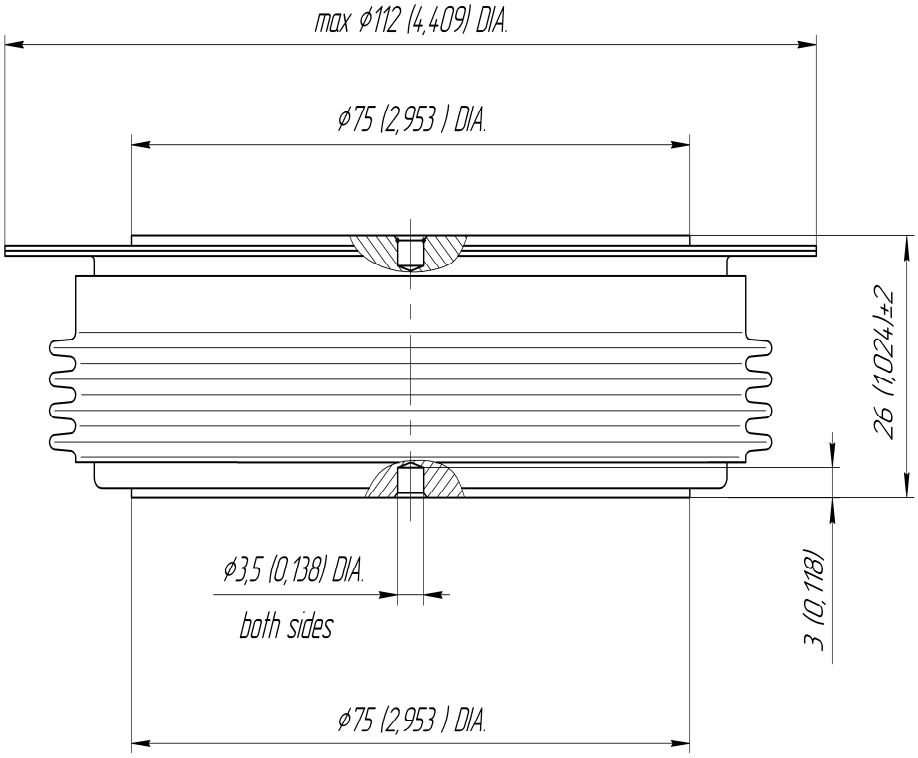
1. Fast recovery diode
2. Design version
3. Average forward current, A
4. Voltage code
5. Group of reverse recovery time
6. Ambient conditions: N – normal; T – tropical

### GROUP OF RECOVERY TIME

| Group Symbol | T3 |
|---|---|
| $t_{rr}$, μs | 16.0 |

## OVERALL DIMENSIONS

**Package type: D.F1**




All dimensions in millimeters (inches)

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