# FAST RECTIFIER DIODE

# DF141-80

- $V_{RRM}$ = **400-1600 V**
- $I_{F(AV)}$ = **80 A**($T_C$ = 79°C)
- $I_{FSM}$ = **2,5 kA**($t_p$=10ms)

- Small recovered time and charge
- Acceptable for series and parallel connections (low dispersion $Q_{rr}$, $V_{FM}$, $I_{RRM}$)

## MAXIMUM RATED VALUES

| Parameter and conditions | Symbol | Values | Units |
|---|---|---|---|
| Repetitive peak reverse voltage, $T_j$ = -60 …+ 150 °C | $V_{RRM}$ | 400-1600 | V |
| Non- repetitive peak reverse voltage, $T_j$ = -60 …+ 150 °C | $V_{RSM}$ | 500-1700 | |
| Repetitive peak reverse current, $T_j$ = 150 °C, $V_R = V_{RRM}$ | $I_{RRM}$ | 30 | mA |
| Maximum average forward current, $T_C$ = 79 °C, f = 50 Hz | $I_{F(AV)}$ | 80 | A |
| RMS forward current, $T_C$ = 79 °C, f = 50 Hz | $I_{FRMS}$ | 125 | |
| Surge non-repetitive current, $T_j$ = 150 °C, $V_R$ = 0, $t_p$ = 10 ms | $I_{FSM}$ | 2,5 | kA |
| Safety factor | $I^2t$ | $31{,}25 \cdot 10^3$ | $A^2s$ |
| Operation junction temperature range | $T_j$ | -60 … +150 | °C |
| Storage temperature range | $T_{stg}$ | -60 … +50 | |

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| ELECTRICAL CHARACTERISTICS | | | | | |
|---|---|---|---|---|---|
| **Parameter and conditions** | **Symbol** | **Values** | | | **Units** |
| | | **min** | **typ.** | **max** | |
| Maximum peak forward voltage, $T_j$ = 25 °C, $I_F$ = 250 A | $V_{FM}$ | - | - | 1,98 | V |
| On-state threshold voltage, $T_j$ = 150 °C, $I_F$ = 125 - 380 A | $V_{TO}$ | - | - | 1,10 | |
| On-state slope resistance, $T_j$ = 150 °C, $I_F$ = 125 - 380 A | $r_T$ | - | - | 4,4 | mΩ |
| Reverse recovery time $T_j$ = 150 °C, $I_F$ = 80 A, $di_F/dt$= -50 A/µs, $V_R$≥ 100 V | $t_{rr}$ | - | - | 1,6 | µs |
| **THERMAL PARAMETERS** | | | | | |
| Thermal resistance junction to case, DC per diode anode side cooled | $R_{th(j-c)}$ | - | - | 0,45 | °C/W |
| Thermal resistance case to heatsink, single side cooled | $R_{th(c-h)}$ | - | - | 0,10 | |
| **MECHANICAL PARAMETERS** | | | | | |
| Weight | w | - | 0,09 | - | kg |
| Torque | Md | 6 | - | 10 | Nm |

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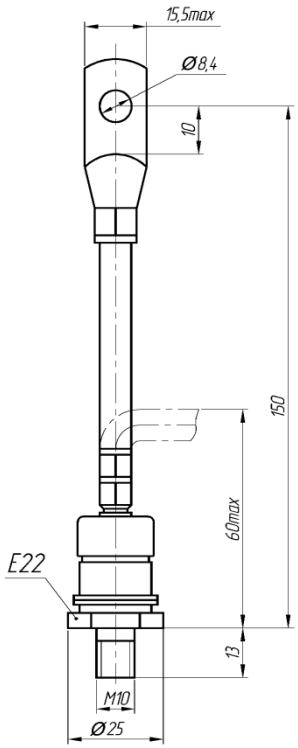



**1 – Anode, 2 - Cathode**

**Fig. 1. Device Outline Drawing**
(dimensions in mm)

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