

Optimum power handling
 Low switching losses
 Low reverse recovery charge
 High power cycling capability

Fast Recovery Stud Diode Type DF261-320-14

| | | | | |
|---------------------------------|------------|-------------------|------|------|
| Mean on-state current | I_{FAV} | 320 A | | |
| Repetitive peak reverse voltage | V_{RRM} | 800 ÷ 1400 V | | |
| Reverse recovery time | t_{rr} | 3.2 ÷ 6.3 μ s | | |
| V_{RRM} , V | 800 | 1000 | 1200 | 1400 |
| Voltage code | 8 | 10 | 12 | 14 |
| T_j , °C | - 60 ÷ 150 | | | |

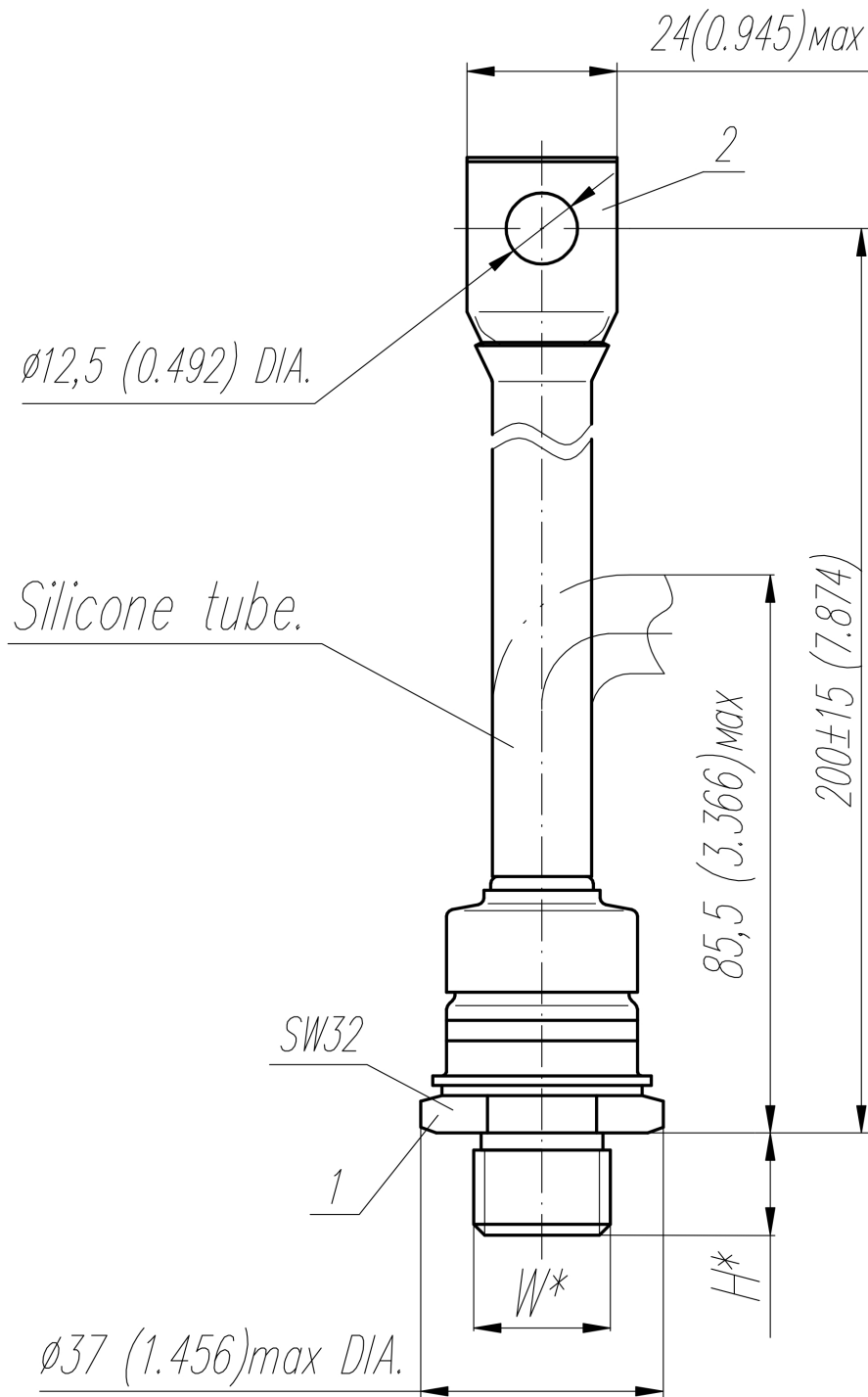
MAXIMUM ALLOWABLE RATINGS

| Symbols and parameters | | Units | Values | Test conditions |
|------------------------|--------------------------------------|-------------------|----------------------|---|
| ON-STATE | | | | |
| I_{FAV} | Average forward current | A | 320 445 | $T_c=90$ °C; $T_c=55$ °C; 180° half-sine wave; 50 Hz |
| I_{FRMS} | RMS forward current | A | 503 | $T_c=90$ °C; 180° half-sine wave; 50 Hz |
| I_{FSM} | Surge forward current | kA | 5.3 6.1 | $T_j=T_{jmax}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V; |
| | | | 6.0 6.9 | $T_j=T_{jmax}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V; |
| I^2t | Safety factor | $A^2s \cdot 10^3$ | 140 185 | $T_j=T_{jmax}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V; |
| | | | 145 195 | $T_j=T_{jmax}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V; |
| BLOCKING | | | | |
| V_{RRM} | Repetitive peak reverse voltages | V | 800÷1400 | $T_{jmin} < T_j < T_{jmax}$; 180° half-sine wave; 50 Hz; |
| V_{RSM} | Non-repetitive peak reverse voltages | V | 900÷1500 | $T_{jmin} < T_j < T_{jmax}$; 180° half-sine wave; 50 Hz; single pulse; |
| V_R | Reverse continuous voltages | V | $0.75 \cdot V_{RRM}$ | $T_j=T_{jmax}$; |
| THERMAL | | | | |
| T_{stg} | Storage temperature | °C | - 60 ÷ 50 | |
| T_j | Operating junction temperature | °C | - 60 ÷ 150 | |
| MECHANICAL | | | | |
| M | Tightening torque | Nm | 20 ÷ 30 | |
| a | Acceleration | m/s^2 | 100 | |

CHARACTERISTICS

| Symbols and parameters | | Units | Values | Conditions |
|------------------------|---|---------------------------|-----------------|--|
| ON-STATE | | | | |
| V_{FM} | Peak forward voltage, max | V | 1.70 | $T_j=25\text{ }^\circ\text{C}; I_{FM}=1005\text{ A}$ |
| $V_{F(TO)}$ | Forward threshold voltage, max | V | 1.20 | $T_j=T_{j\text{ max}};$ |
| r_T | Forward slope resistance, max | m Ω | 0.850 | $0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$ |
| BLOCKING | | | | |
| I_{RRM} | Repetitive peak reverse current, max | mA | 40 | $T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$ |
| SWITCHING | | | | |
| Q_{rr} | Total recovered charge, max | μC | 300 | $T_j=T_{j\text{ max}}; I_{FM}=320\text{ A};$ |
| t_{rr} | Reverse recovery time, max | μs | 3.2 ÷ 6.3 | $di_R/dt=-100\text{ A}/\mu\text{s};$ |
| I_{rrM} | Peak reverse recovery current, typ | A | 188 | $V_R=100\text{ V};$ |
| THERMAL | | | | |
| R_{thjc} | Thermal resistance, junction to case, max | $^\circ\text{C}/\text{W}$ | 0.1000 | Direct current |
| MECHANICAL | | | | |
| w | Weight, typ | g | 250 | |
| D_s | Surface creepage distance | mm (inch) | 12.4 (4.882) | |
| D_a | Air strike distance | mm (inch) | 12.4 (4.882) | |

| PART NUMBERING GUIDE | | | | | | | GROUP OF RECOVERY TIME | | | | |
|--|-----|-----|---|----|----|---|------------------------|-----|----|----|-----|
| DF | 261 | 320 | | 14 | K4 | N | Group Symbol | K4 | H4 | E4 | C4 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | $t_{rr}, \mu\text{s}$ | 3.2 | 4 | 5 | 6.3 |
| 1. Fast recovery diode 2. Design version 3. Average forward current, A 4. Polarity: X – Cathode to Stud; Anode to Stud – no symbol 5. Voltage code 6. Group of reverse recovery time 7. Ambient conditions: N – normal; T – tropical | | | | | | | | | | | |



| Type of screw | W | H |
|------------------------------------|--------------|----|
| Metric Screw Type A | M16x1,5 – 8g | 13 |
| Metric Screw Type B (upon request) | M20x1,5 – 8g | 15 |

| Polarity | Example of code designation | Reference designation | Colors | |
|----------|-----------------------------|-----------------------|------------|----------|
| | | | Anode | Cathode |
| Normal | Anode to stud | DF261-320-14 | - | Red tube |
| Reverse | Cathode to stud | DF261-320X-14 | Black tube | - |

All dimensions in millimeters (inches)