

High power cycling capability
 Low on-state and switching losses
 Optimized for line frequency rectifiers
 Designed for traction and industrial applications

Rectifier Diode Type D243-800-44

| | | | | | | | | |
|---------------------------------|-----------|------|------|-----------|---------------|------|------|--|
| Average forward current | | | | I_{FAV} | 800 A | | | |
| Repetitive peak reverse voltage | | | | V_{RRM} | 3200 ÷ 4400 V | | | |
| V_{RRM} , V | 3200 | 3400 | 3600 | 3800 | 4000 | 4200 | 4400 | |
| Voltage code | 32 | 34 | 36 | 38 | 40 | 42 | 44 | |
| T_j , °C | -60 ÷ 150 | | | | | | | |

MAXIMUM ALLOWABLE RATINGS

| Symbols and parameters | | Units | Values | Test conditions | |
|------------------------|--------------------------------------|-------------------|----------------------|---|--|
| ON-STATE | | | | | |
| I_{FAV} | Average forward current | A | 800 790 | $T_c=99\text{ °C}$; Double side cooled; $T_c=100\text{ °C}$; Double side cooled; 180° half-sine wave; 50 Hz | |
| I_{FRMS} | RMS forward current | A | 1256 | $T_c=99\text{ °C}$; Double side cooled; 180° half-sine wave; 50 Hz | |
| I_{FSM} | Surge forward current | kA | 13.5 16.0 | $T_j=T_{j\max}$ $T_j=25\text{ °C}$ | 180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V}$; |
| | | | 15.0 17.0 | $T_j=T_{j\max}$ $T_j=25\text{ °C}$ | 180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V}$; |
| I^2t | Safety factor | $A^2s \cdot 10^3$ | 910 1280 | $T_j=T_{j\max}$ $T_j=25\text{ °C}$ | 180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V}$; |
| | | | 930 1195 | $T_j=T_{j\max}$ $T_j=25\text{ °C}$ | 180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V}$; |
| BLOCKING | | | | | |
| V_{RRM} | Repetitive peak reverse voltages | V | 3200 ÷ 4400 | $T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz; | |
| V_{RSM} | Non-repetitive peak reverse voltages | V | 3300 ÷ 4500 | $T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz; single pulse; | |
| V_R | Reverse continuous voltages | V | $0.75 \cdot V_{RRM}$ | $T_j = T_{j\max}$; | |
| THERMAL | | | | | |
| T_{stg} | Storage temperature | °C | -60 ÷ 50 | | |
| T_j | Operating junction temperature | °C | -60 ÷ 150 | | |
| MECHANICAL | | | | | |
| F | Mounting force | kN | 14.0 ÷ 16.0 | | |
| a | Acceleration | m/s^2 | 50 | Device unclamped | |
| | | | 100 | Device clamped | |

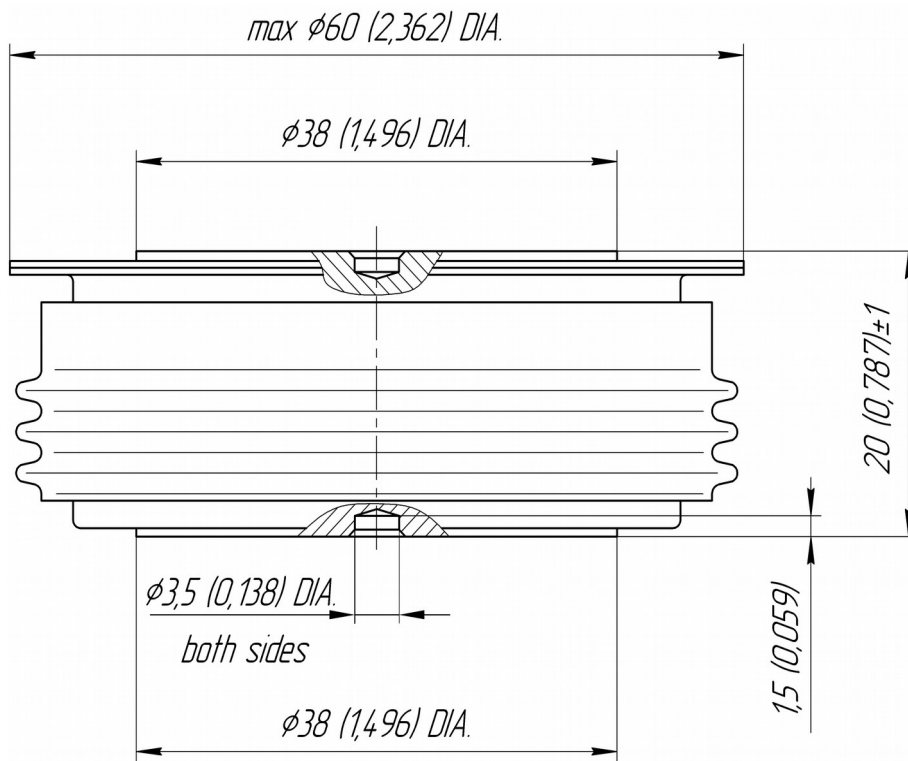
CHARACTERISTICS

| Symbols and parameters | | Units | Values | Conditions |
|------------------------|---|--------------------|------------------|--|
| ON-STATE | | | | |
| V_{FM} | Peak forward voltage, max | V | 2.00 | $T_j=25\text{ }^\circ\text{C}; I_{FM}=2512\text{ A}$ |
| $V_{F(TO)}$ | Forward threshold voltage, max | V | 1.00 | $T_j=T_{j\text{ max}};$ |
| r_T | Forward slope resistance, max | m Ω | 0.500 | $0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$ |
| BLOCKING | | | | |
| I_{RRM} | Repetitive peak reverse current, max | mA | 70 | $T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$ |
| THERMAL | | | | |
| R_{thjc} | Thermal resistance, junction to case, max | $^\circ\text{C/W}$ | 0.0320 | Double side cooled |
| R_{thjc-A} | | | 0.0704 | Direct current |
| R_{thjc-K} | | | 0.0576 | Cathode side cooled |
| R_{thck} | Thermal resistance, case to heatsink, max | $^\circ\text{C/W}$ | 0.0060 | Direct current |
| MECHANICAL | | | | |
| w | Weight, typ | g | 260 | |
| D_s | Surface creepage distance | mm (inch) | 23.69 (0.933) | |
| D_a | Air strike distance | mm (inch) | 19.10 (0.752) | |

PART NUMBERING GUIDE

| | | | | |
|---|-----|-----|----|---|
| D | 243 | 800 | 44 | N |
| 1 | 2 | 3 | 4 | 5 |

1. D — Rectifier Diode
2. Design version
3. Average forward current, A
4. Voltage code
5. Ambient conditions: N – normal; T – tropical



All dimensions in millimeters (inches)