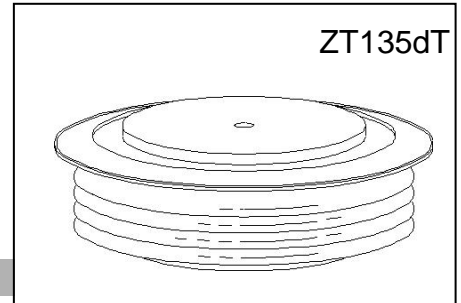




HIGH POWER FREE FLOATING TYPE RECTIFIER DIODE

Features:

- . Free-floating silicon technology
- . Low on-state and switching losses
- . Blocking capability up to 5600 volts
- . Optimum power handling capability
- . Pressure assembled device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

| Device Type | V _{RRM} (1) | V _{RSM} (1) |
|-------------|----------------------|----------------------|
| ZP6000-44 | 4400 | 4600 |
| ZP6000-48 | 4800 | 5000 |
| ZP6000-52 | 5200 | 5400 |
| ZP6000-56 | 5600 | 5800 |

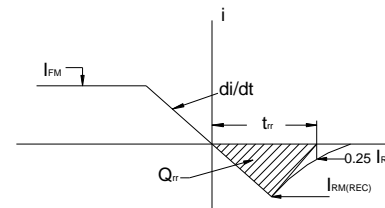
Notes:

All ratings are specified for T_j=25 °C, unless otherwise stated

- (1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to +150 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for T_j = 150 °C.
- (4) See parameter definition below :

V_{RRM} = Repetitive peak reverse voltage
 V_{RSM} = Non repetitive peak reverse voltage (2)

| | | |
|---|------------------|-------------------|
| Repetitive peak reverse leakage current | I _{RRM} | 5 mA 50 mA (3) |
|---|------------------|-------------------|



REVERSE RECOVERY CHARACTERIST

Conducting - on state

| Parameter | Symbol | Min. | Max. | Typ. | Units | Conditions |
|---|----------------------|------|-----------------------|------|------------------|---|
| Average forward current | I _{F(AV)} | | 6000 | | A | Sinewave 180°, T _c =85°C |
| RMS forward current | I _{FRMS} | | 9420 | | A | Nominal value |
| Peak one cycle surge (non repetitive) current | I _{FSM} | | 94000 | | A | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T _j = 150 °C |
| I square t | I ² t | | 4.5 × 10 ⁷ | | A ² s | 10 msec |
| Peak forward voltage | V _{FM} | | 1.20 | | V | I _{FM} = 5000A;T _j =25°C |
| Threshold voltage | V _{FO} | | 0.790 | | V | T _j =150°C,I=0.5 π I _{F(AV)} to 1.5 π I _{F(AV)} |
| Slope resistance | r _F | | 0.070 | | mΩ | T _j =150°C,I=0.5 π I _{F(AV)} to 1.5 π I _{F(AV)} |
| Reverse Recovery Current (4) | I _{RM(REC)} | | | | A | I _{FM} = 500 A; di/dt = -10 A/s;T _j max |
| Reverse Recovery Charge (4) | Q _{rr} | | | | μC | I _{FM} = 500 A; di/dt = -10 A/s;T _j max |
| Reverse Recovery Time (4) | t _{rr} | | | | μs | I _{FM} = 500 A; di/dt = -10 A/s;T _j max |

| Parameter | Symbol | Min. | Max. | Typ. | Units | Conditions |
|---------------------------------------|-------------------|------|--------|------|-------|---------------------|
| Operating temperature | T_j | -40 | +150 | | °C | |
| Storage temperature | T_{stg} | -40 | +150 | | °C | |
| Thermal resistance - junction to case | $R_{\Theta(j-c)}$ | | 0.0040 | | °C/W | Double sided cooled |
| Thermal resistance - case to heatsink | $R_{\Theta(c-s)}$ | | 0.0010 | | °C/W | Double sided cooled |
| Mounting force | P | | | 120 | kN | |
| Weight | W | | | 3.60 | kg. | |

* Mounting surfaces smooth, flat and greaseless

CASE OUTLINE AND DIMENSIONS

