



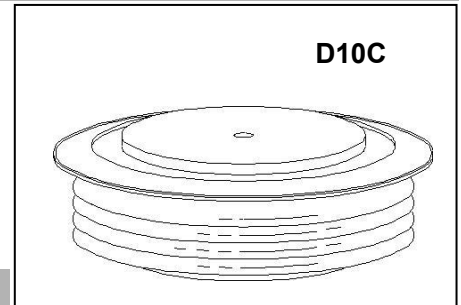
ZP1750- RECTIFIER DIODE

3800-4500V_{RRM}

GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

Features:

- . All diffused structure
- . High surge rating
- . Blocking capability up to 4500 volts
- . Ceramic housing hermetic package
- . Pressure assembled device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

| Device Type | V _{RRM} (1) | V _{RSM} (1) |
|-------------|----------------------|----------------------|
| ZP1750-38 | 3800 | 3900 |
| ZP1750-40 | 4000 | 4100 |
| ZP1750-42 | 4200 | 4300 |
| ZP1750-44 | 4400 | 4500 |
| ZP1750-45 | 4500 | 4600 |

V_{RRM} = Repetitive peak reverse voltage

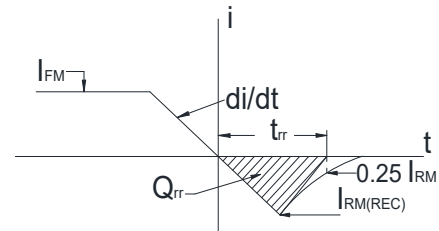
V_{RSM} = Non repetitive peak reverse voltage (2)

| Repetitive peak reverse leakage current | I _{RRM} | 5mA 70 mA (3) |
|---|------------------|------------------|
| | | |

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 :



reverse recovery characteristic

Conducting - on state

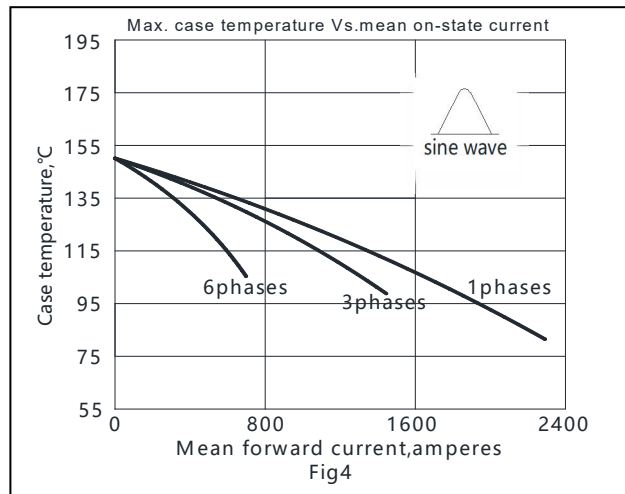
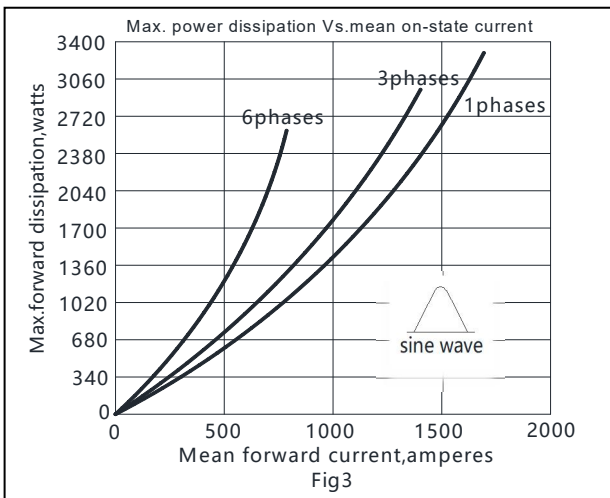
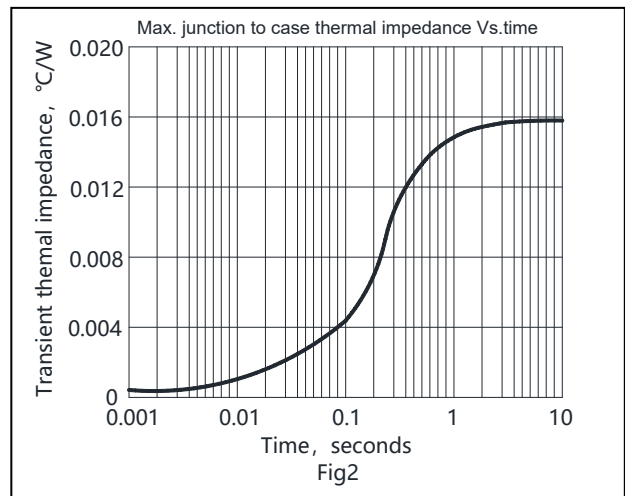
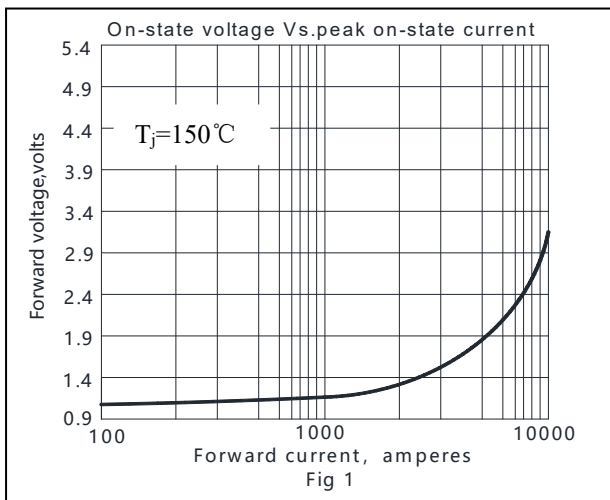
| Parameter | Symbol | Min. | Max. | Typ. | Units | Conditions |
|---|----------------------|------|------------------------|------|------------------|---|
| Average forward current | I _{F(AV)} | | 1750 | | A | Sinewave 180°, T _c =100°C |
| RMS forward current | I _{FRMS} | | 2748 | | A | Nominal value |
| Peak one cycle surge (non repetitive) current | I _{FSM} | | 26250 | | A | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T _j =150°C |
| I square t | I ² t | | 68.9 × 10 ⁷ | | A ² s | 10 msec |
| Peak forward voltage | V _{FM} | | 1.65 | | V | I _{FM} = 3000A; T _j =25°C |
| Threshold voltage | V _{FO} | | 0.95 | | V | T _j =150°C, I = 0.5 π I _{F(AV)} to 1.5 π I _{F(AV)} |
| Slope resistance | r _F | | 0.22 | | 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 _{jmax} |
| Reverse Recovery Charge (4) | Q _{rr} | | | 5000 | μC | I _{FM} = 500 A; di/dt = -10 A/s; T _{jmax} |
| Reverse Recovery Time (4) | t _{rr} | | | | μs | I _{FM} = 500 A; di/dt = -10 A/s; T _{jmax} |

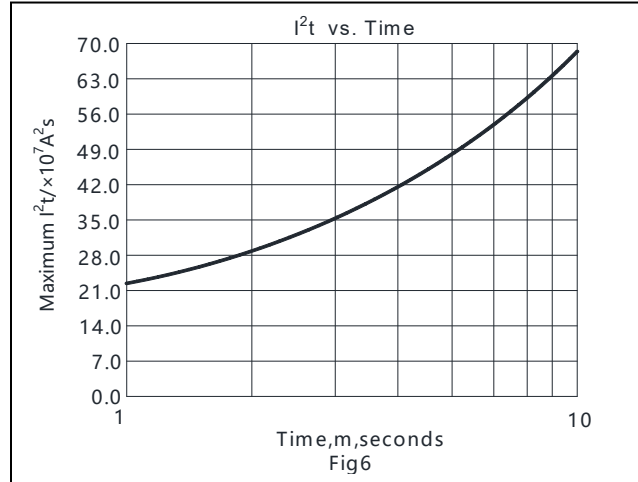
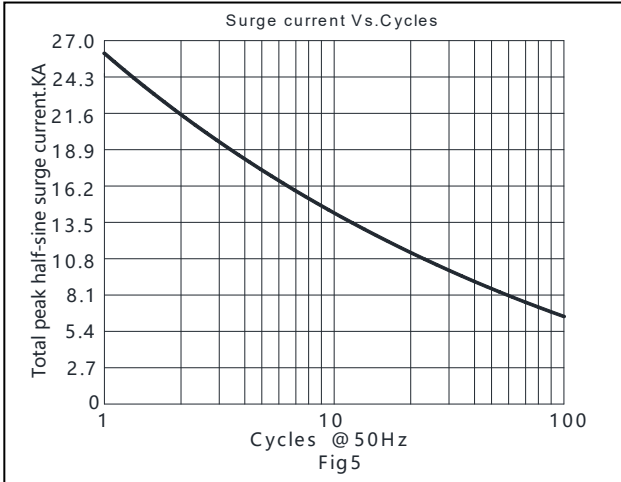
| Parameter | Symbol | Min. | Max. | Typ. | Units | Conditions |
|---------------------------------------|-------------------|------|--------|------|-------|---------------------|
| Operating temperature | T_j | -40 | +150 | | °C | |
| Storage temperature | T_{stg} | -40 | +150 | | °C | |
| Thermal resistance - junction to case | $R_{\theta(j-c)}$ | | 0.015 | | °C/W | Double sided cooled |
| Thermal resistance - case to heatsink | $R_{\theta(c-s)}$ | | 0.0045 | | °C/W | Double sided cooled |
| Mounting force | F | 27 | 33 | 30 | kN | |
| Weight | m | | | 0.72 | kg. | |

* Mounting surfaces smooth, flat and greaseless

Graph

ZP1750-RECTIFIER DIODE





CASE OUTLINE AND DIMENSIONS

