

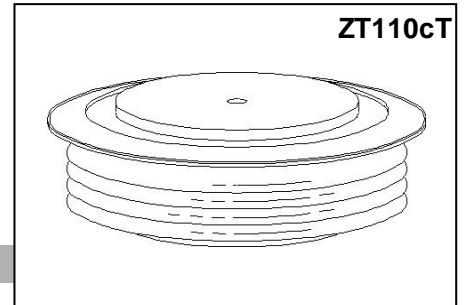


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**GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER**

**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**

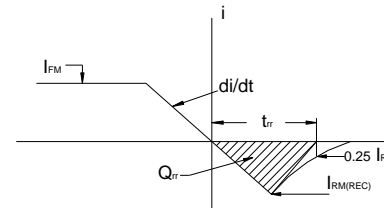
| Device Type | V <sub>RRM</sub> (1) | V <sub>RSM</sub> (1) |
|-------------|----------------------|----------------------|
| ZP5200-36   | 3600                 | 3800                 |
| ZP5200-38   | 3800                 | 4000                 |
| ZP5200-40   | 4000                 | 4200                 |
| ZP5200-42   | 4200                 | 4400                 |
| ZP5200-45   | 4500                 | 4700                 |

V<sub>RRM</sub> = Repetitive peak reverse voltage  
 V<sub>RSM</sub> = Non repetitive peak reverse voltage (2)

|                                 |                  |                    |
|---------------------------------|------------------|--------------------|
| Repetitive peak reverse leakage | I <sub>RRM</sub> | 5 mA<br>200 mA (3) |
|---------------------------------|------------------|--------------------|

Notes:

- All ratings are specified for T<sub>j</sub>=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<sub>j</sub> = 150°C.
  - (4) See parameter definition below:



REVERSE RECOVERY CHARACTERIST

**Conducting - on state**

| Parameter                                     | Symbol               | Min. | Max.                | Typ. | Units            | Conditions   |
|---|----------------------|------|---------------------|------|------------------|--|
| Average forward current                       | I <sub>F(AV)</sub>   |      | 5200                |      | A                | Sinewave, 180°, T <sub>c</sub> = 90°C  |
| RMS forward current                           | I <sub>FRMS</sub>    |      | 8164                |      | A                | Nominal value  |
| Peak one cycle surge (non repetitive) current | I <sub>FSM</sub>     |      | 78000               |      | A                | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 150 °C  |
| I square t                                    | I <sup>2</sup> t     |      | 3 × 10 <sup>7</sup> |      | A <sup>2</sup> s | 10 msec  |
| Peak forward voltage                          | V <sub>FM</sub>      |      | 1.35                |      | V                | I <sub>FM</sub> = 5000A; T <sub>j</sub> = 25°C                                   |
| Threshold voltage                             | V <sub>FO</sub>      |      | 0.8                 |      | V                | T <sub>j</sub> = 150°C, I = 0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub> |
| Slope resistance                              | r <sub>F</sub>       |      | 0.086               |      | mΩ               | T <sub>j</sub> = 150°C, I = 0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub> |
| Reverse Recovery Current (4)                  | I <sub>RM(REC)</sub> |      |                     |      | A                | I <sub>FM</sub> = 500 A; di/dt = -10 A/s; T <sub>jmax</sub>                      |
| Reverse Recovery Charge (4)                   | Q <sub>rr</sub>      |      |                     | 7000 | μC               | I <sub>FM</sub> = 500 A; di/dt = -10 A/s; T <sub>jmax</sub>                      |
| Reverse Recovery Time (4)                     | t <sub>rr</sub>      |      |                     |      | μs               | I <sub>FM</sub> = 500 A; di/dt = -10 A/s; T <sub>jmax</sub>                      |

| 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 | $R_{\Theta(j-c)}$ |      | 0.006  |      | °C/W  | Double sided cooled |
| Thermal resistance - case to heatsink | $R_{\Theta(c-s)}$ |      | 0.0015 |      | °C/W  | Double sided cooled |
| Mounting force                        | P                 | 65   | 85     | 80   | kN    |                     |
| Weight                                | W                 |      |        | 1.9  | kg.   |                     |

\* Mounting surfaces smooth, flat and greaseless

**CASE OUTLINE AND DIMENSIONS**

