



# R U N A U

Jiangsu Runau Electronics Manufacturing Co.,Ltd

# ZP3500-Rectifier Diode

2500 - 3500 V<sub>RRM</sub>

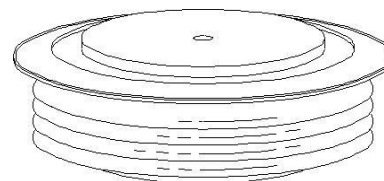
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## GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

### Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 3500 volts
- . Ceramic Housing Hermetic Package
- . Pressure Assembled Device

ZT80cT



## ELECTRICAL CHARACTERISTICS AND RATINGS

### Reverse Blocking

| Device Type | V <sub>RRM</sub> (1) | V <sub>RSM</sub> (1) |
|-------------|----------------------|----------------------|
| ZP3500-25   | 2500                 | 2700                 |
| ZP3500-26   | 2600                 | 2800                 |
| ZP3500-28   | 2800                 | 3000                 |
| ZP3500-30   | 3000                 | 3200                 |
| ZP3500-32   | 3200                 | 3400                 |
| ZP3500-35   | 3500                 | 3700                 |

Notes:

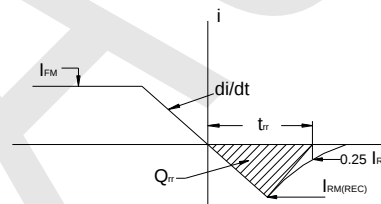
All ratings are specified for T<sub>j</sub>=25 °C unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to +160 °C.

(2) 10 msec. max. pulse width

(3) Maximum value for T<sub>j</sub> = 160 °C.

(4) See parameter definition below:



REVERSE RECOVERY CHARACTERISTIC

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>100 mA (3) |
|---------------------------------|------------------|--------------------|

### Conducting - on state

| Parameter                                     | Symbol               | Min. | Max.                 | Typ. | Units            | Conditions                                                                      |
|-----------------------------------------------|----------------------|------|----------------------|------|------------------|---------------------------------------------------------------------------------|
| Average forward current                       | I <sub>F(AV)</sub>   |      | 3500                 |      | A                | Sinewave, 180°, T <sub>c</sub> = 90°C                                           |
| RMS forward current                           | I <sub>FRMS</sub>    |      | 5495                 |      | A                | Nominal value                                                                   |
| Peak one cycle surge (non repetitive) current | I <sub>FSM</sub>     |      | 49000                |      | A                | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 160 °C |
| I square t                                    | I <sup>2</sup> t     |      | 12 × 10 <sup>6</sup> |      | A <sup>2</sup> s | 10 msec                                                                         |
| Peak forward voltage                          | V <sub>FM</sub>      |      | 1.35                 |      | V                | I <sub>FM</sub> = 3000A; T <sub>j</sub> = 25°C                                  |
| Threshold voltage                             | V <sub>FO</sub>      |      | 0.87                 |      | V                | T <sub>j</sub> = 160°C, I = 0.5π I <sub>F(AV)</sub> to 1.5π I <sub>F(AV)</sub>  |
| Slope resistance                              | r <sub>F</sub>       |      | 0.09                 |      | mΩ               | T <sub>j</sub> = 160°C, I = 0.5π I <sub>F(AV)</sub> to 1.5π 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>      |      |                      | 5500 | 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  | +160  |      | $^{\circ}\text{C}$   |                     |
| Storage temperature                   | $T_{\text{stg}}$  | -40  | +160  |      | $^{\circ}\text{C}$   |                     |
| Thermal resistance - junction to case | $R_{\Theta(j-c)}$ |      | 0.010 |      | $^{\circ}\text{C/W}$ | Double sided cooled |
| Thermal resistance - case to heatsink | $R_{\Theta(c-s)}$ |      | 0.003 |      | $^{\circ}\text{C/W}$ | Double sided cooled |
| Mounting force                        | P                 | 32   | 39    | 35   | kN                   |                     |
| Weight                                | W                 |      |       | 1.1  | kg.                  |                     |

\* Mounting surfaces smooth, flat and greaseless

## CASE OUTLINE AND DIMENSIONS

