



# R U N A U

Jiangsu Runau Electronics Manufacturing Co.,Ltd

# ZP2000-Rectifier Diode

1800 - 2400 V<sub>RRM</sub>

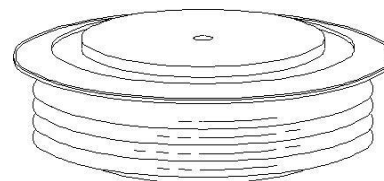
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## GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

### Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 2400 volts
- . Ceramic Housing Hermetic Package
- . Pressure Assembled Device

ZT55cT



## ELECTRICAL CHARACTERISTICS AND RATINGS

### Reverse Blocking

| Device Type | V <sub>RRM</sub> (1) | V <sub>RSM</sub> (1) |
|-------------|----------------------|----------------------|
| ZP2000-18   | 1800                 | 2000                 |
| ZP2000-20   | 2000                 | 2200                 |
| ZP2000-22   | 2200                 | 2400                 |

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>70 mA (3) |
|---------------------------------|------------------|-------------------|

Notes:

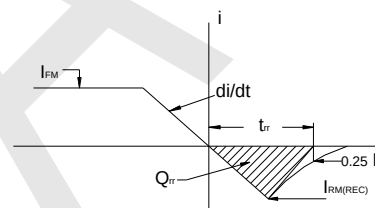
All ratings are specified for T<sub>j</sub>=25 °C unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to +175 °C.

(2) 10 msec. max. pulse width

(3) Maximum value for T<sub>j</sub> = 175 °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>   |      | 2000                  |      | A                | Sinewave, 180°, T <sub>c</sub> =100°C                                           |
| RMS forward current                           | I <sub>FRMS</sub>    |      | 3140                  |      | A                | Nominal value                                                                   |
| Peak one cycle surge (non repetitive) current | I <sub>FSM</sub>     |      | 24000                 |      | A                | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 175 °C |
| I square t                                    | I <sup>2</sup> t     |      | 2.9 × 10 <sup>6</sup> |      | A <sup>2</sup> s | 10 msec                                                                         |
| Peak forward voltage                          | V <sub>FM</sub>      |      | 1.45                  |      | V                | I <sub>FM</sub> = 3000A; T <sub>j</sub> =25°C                                   |
| Threshold voltage                             | V <sub>FO</sub>      |      | 0.82                  |      | V                | T <sub>j</sub> =175°C, I=0.5π I <sub>F(AV)</sub> to 1.5π I <sub>F(AV)</sub>     |
| Slope resistance                              | r <sub>F</sub>       |      | 0.16                  |      | mΩ               | T <sub>j</sub> =175°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>      |      |                       | 4000 | 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  | +175  |      | $^{\circ}\text{C}$   |                     |
| Storage temperature                   | $T_{\text{stg}}$  | -40  | +175  |      | $^{\circ}\text{C}$   |                     |
| Thermal resistance - junction to case | $R_{\Theta(j-c)}$ |      | 0.022 |      | $^{\circ}\text{C/W}$ | Double sided cooled |
| Thermal resistance - case to heatsink | $R_{\Theta(c-s)}$ |      | 0.005 |      | $^{\circ}\text{C/W}$ | Double sided cooled |
| Mounting force                        | P                 | 22   | 27    | 25   | kN                   |                     |
| Weight                                | W                 |      |       | 0.46 | kg.                  |                     |

\* Mounting surfaces smooth, flat and greaseless

## CASE OUTLINE AND DIMENSIONS

