



# RUNAU

Jiangsu Runau Electronics Manufacturing Co.,Ltd

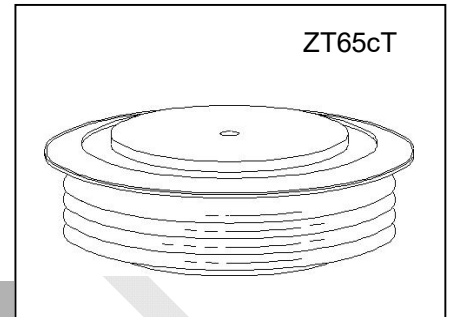
# ZK1500-Rectifier Diode

1000~1800V<sub>RRM</sub>

## FAST RECOVERY RECTIFIER

### Features:

- . All diffused structure
- . High surge rating
- . Blocking capability up to 1800 volts
- . Soft recovery
- . 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) |
|-------------|----------------------|----------------------|
| ZK1500-10   | 1000                 | 1100                 |
| ZK1500-12   | 1200                 | 1325                 |
| ZK1500-14   | 1400                 | 1525                 |
| ZK1500-16   | 1600                 | 1750                 |
| ZK1500-18   | 1800                 | 2000                 |

V<sub>RRM</sub> = Repetitive peak reverse voltage

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

|   |                  |                    |
|---|------------------|--------------------|
| Repetitive peak reverse leakage current | I <sub>RRM</sub> | 15 mA<br>50 mA (3) |
|---|------------------|--------------------|

### Conducting - on state

| Parameter                                     | Symbol               | Min. | Max.                | Typ. | Units            | Conditions  |
|---|----------------------|------|---------------------|------|------------------|---|
| Average forward current                       | I <sub>F(AV)</sub>   |      | 1500                |      | A                | Sinewave 180°, T <sub>c</sub> = 70 °C   |
| RMS forward current                           | I <sub>FRMS</sub>    |      | 2355                |      | A                |   |
| Peak one cycle surge (non repetitive) current | I <sub>FSM</sub>     |      | 21000               |      | A                | 10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 125 °C |
| I square t                                    | I <sup>2</sup> t     |      | 2.2X10 <sup>6</sup> |      | A <sup>2</sup> s | 8.3 msec and 10.0 msec  |
| Peak forward voltage                          | V <sub>FM</sub>      |      | 2.20                |      | V                | I <sub>FM</sub> = 3000A; Duty cycle ≤ 0.01%                                     |
| Reverse Recovery Current (4)                  | I <sub>RM(REC)</sub> |      | *                   |      | A                | I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max     |
| Reverse Recovery Charge (4)                   | Q <sub>rr</sub>      |      | *                   |      | μC               | I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max     |
| Reverse Recovery Time (4)                     | t <sub>rr</sub>      |      | 6                   |      | μs               | I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max     |

Notes:

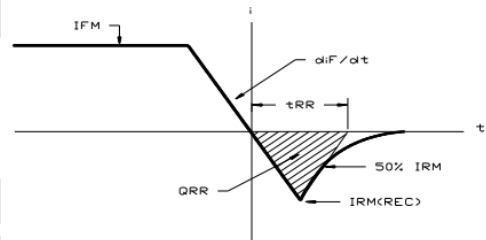
All ratings are specified for T<sub>j</sub>=25 °C, unless otherwise stated

(1) All voltage ratings are specified for an applied 50Hz/60zHz sinusoidal waveform over the temperature range -40 to +125°C.

(2) 10 msec. max. pulse width

(3) Maximum value for T<sub>j</sub> = 125°C.

(4) See parameter definition below :



REVERSE RECOVERY CHARACTERISTIC

\* For guaranteed maximum values, contact factory

| Parameter                             | Symbol            | Min. | Max.            | Typ. | Units | Conditions   |
|---------------------------------------|-------------------|------|-----------------|------|-------|--|
| Operating temperature                 | $T_j$             | -40  | +125            |      | °C    |  |
| Storage temperature                   | $T_{stg}$         | -40  | +140            |      | °C    |  |
| Thermal resistance - junction to case | $R_{\Theta(j-c)}$ |      | 0.016           |      | °C/W  | Double sided cooled<br>(1) @ 2000 lb.; (2) @ 800 lb. |
| Thermal resistance - junction to case | $R_{\Theta(j-c)}$ |      | 0.032           |      | °C/W  | Single sided cooled<br>(1) @ 2000 lb.; (2) @ 800 lb. |
| Thermal resistance - case to heatsink | $R_{\Theta(c-s)}$ |      | 0.0045<br>0.009 |      | °C/W  | Double sided cooled *<br>Single sided cooled *       |
| Mounting force                        | P                 |      |                 | 28   | kN    |  |
| Weight                                | W                 |      |                 | 650  | g     |  |

\* Mounting surfaces smooth, flat and greaseless

**CASE OUTLINE AND DIMENSIONS**

