



High-end Power Semiconductor Manufacturer

ZP200A 4600-6000V Standard Rectifier Diode

- High power cycling capability
- Low on-state and switching losses
- Optimized for line frequency rectifiers
- Designed for traction and industrial applications



Average forward current				I_{FAV}		200 A		
Repetitive peak reverse voltage				V_{RRM}		4600 – 6000 V		
V_{RRM} , V	4600	4800	5000	5200	5400	5600	5800	6000
Voltage code	46	48	50	52	54	56	58	60
T_j , °C	-60 – 150							

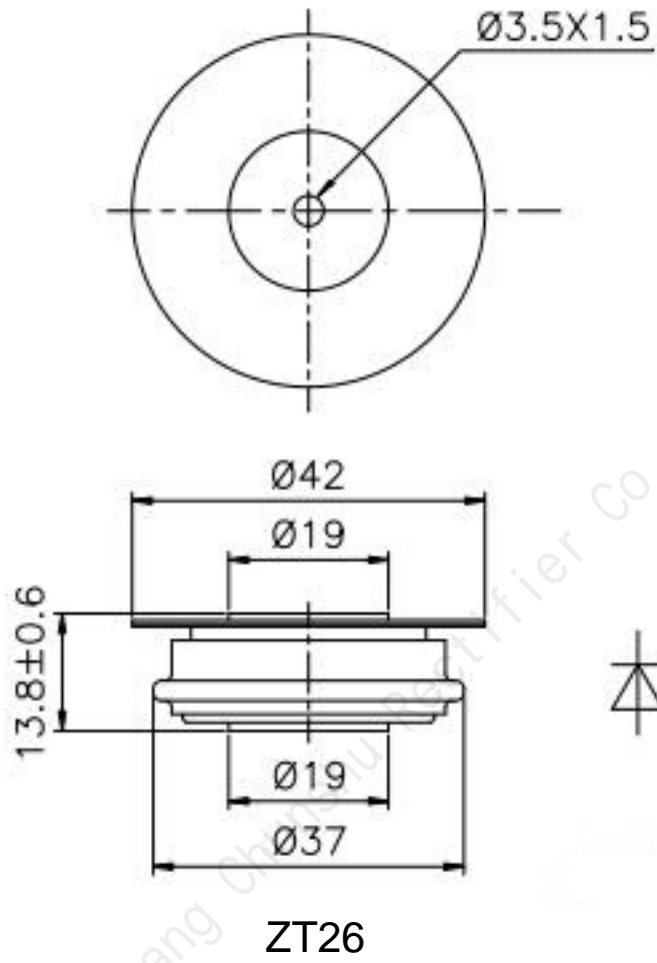
MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions
ON-STATE				
I_{FAV}	Average forward current	A	200	$T_c=100$ °C; Double side cooled; 180° half-sine wave; 50 Hz
I_{FRMS}	RMS forward current	A	314	$T_c=116$ °C; Double side cooled; 180° half-sine wave; 50 Hz
I_{FSM}	Surge forward current	kA	3.0 3.5	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V;
			4.0 4.6	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V;
I^2t	Safety factor	$A^2s \cdot 10^3$	45 60	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V;
			65 85	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V;
BLOCKING				
V_{RRM}	Repetitive peak reverse voltages	V	4600– 6000	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz;
V_{RSM}	Non-repetitive peak reverse voltages	V	4700– 6100	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz; single pulse;
V_R	Reverse continuous voltages	V	$0.75 \cdot V_{RRM}$	$T_j = T_{j\max}$;
THERMAL				
T_{stg}	Storage temperature	°C	-60 – 150	
T_j	Operating junction temperature	°C	-60 – 150	
MECHANICAL				
F	Mounting force	kN	5.0– 7.0	
a	Acceleration	m/s^2	50	Device unclamped
			100	Device clamped

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	2.51	$T_j=25\text{ }^\circ\text{C}; I_{FM}=628\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.11	$T_j=T_{j\text{ max}};$	
r_T	Forward slope resistance, max	m Ω	2.620	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$	
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	35	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$	
THERMAL					
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.070	Direct current	Double side cooled
R_{thjc-A}			0.154		Anode side cooled
R_{thjc-K}			0.126		Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.010	Direct current	
MECHANICAL					
w	Weight, typ	g	65		
D_s	Surface creepage distance	mm (inch)	11.74 (0.462)		
D_a	Air strike distance	mm (inch)	11.60 (0.457)		

OVERALL DIMENSIONS



All dimensions in millimeters