



High-end Power Semiconductor Manufacturer

ZP500A 5600-6500V 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}		500 A		
Repetitive peak reverse voltage		V_{RRM}		5600-6500 V		
V_{RRM} , V	5600	5800	6000	6200	6400	6500
Voltage code	56	58	60	62	64	65
T_j , °C	-60 - 150					

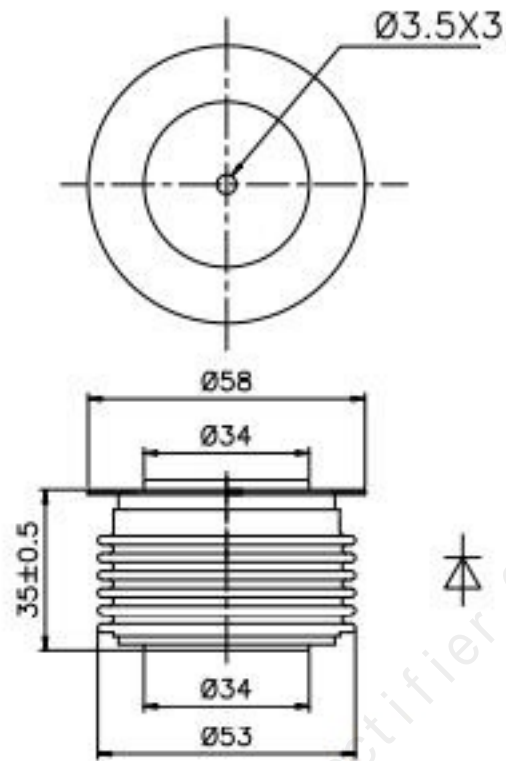
MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	500	$T_c=100\text{ }^\circ\text{C}$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	9.5	$T_j=T_{j\max}$	180° half-sine wave; ($t_p=10\text{ ms}$); $V_R=0.6V_{RRM}$
I^2t	Safety factor	$A^2s\cdot 10^3$	451	$T_j=T_{j\max}$	180° half-sine wave; ($t_p=10\text{ ms}$); $V_R=0.6V_{RRM}$
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	5600-6500	$t_p=10\text{ ms}$; $T_j=T_{j\max}$	
THERMAL					
T_{stg}	Storage temperature	°C	-40-160		
T_j	Operating junction temperature	°C	-60-150		
MECHANICAL					
F	Mounting force	kN	10-20		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	2.20	$T_j=25\text{ }^\circ\text{C}; I_{FM}=1000\text{ A}; F=20\text{kN}$
$V_{F(TO)}$	Forward threshold voltage, max	V	0.89	$T_j=T_{j\text{ max}};$
r_T	Forward slope resistance, max	$\text{m}\Omega$	1.05	
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	50	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C}/\text{W}$	0.045	At 180° sine; double side cooled Clamping force 20.0kN
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C}/\text{W}$	0.008	
MECHANICAL				
w	Weight, typ	g	340	

OVERALL DIMENSIONS



ZT40DT

All dimensions in millimeters

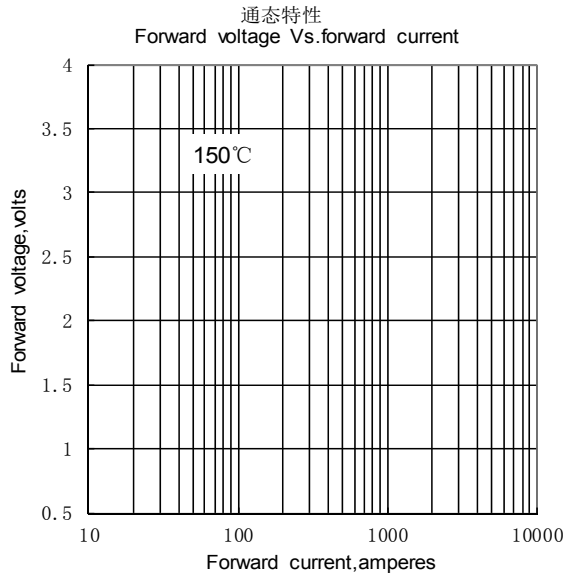


Fig.1

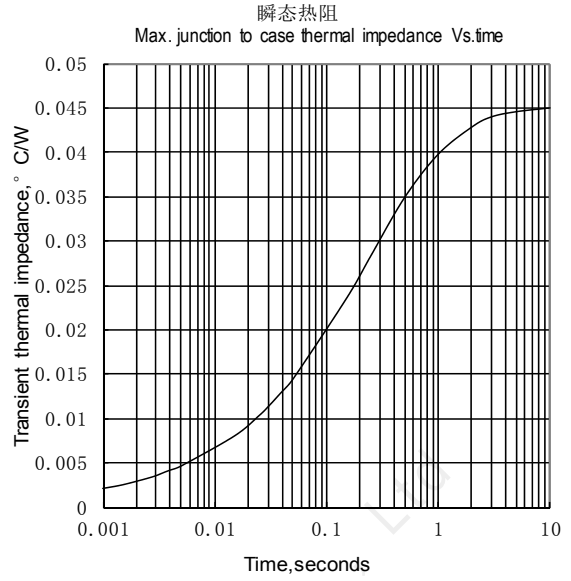


Fig.2

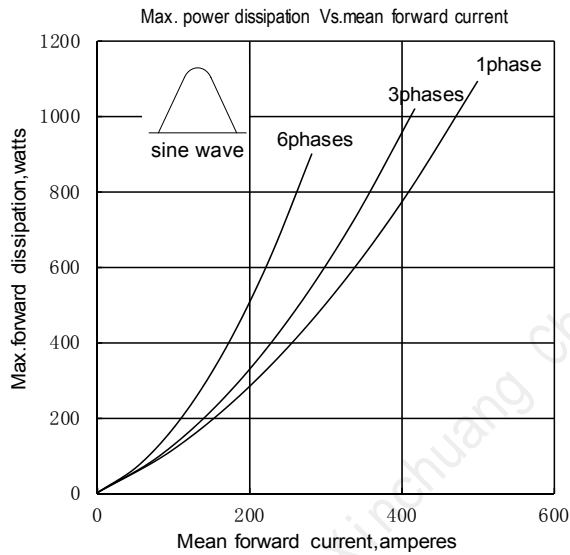


Fig.3

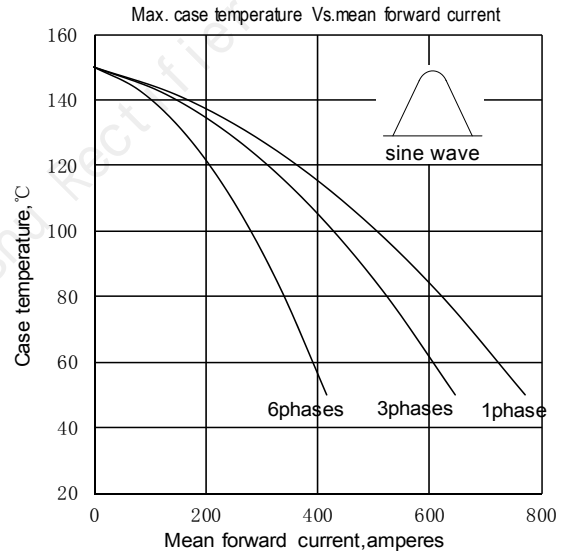


Fig.4

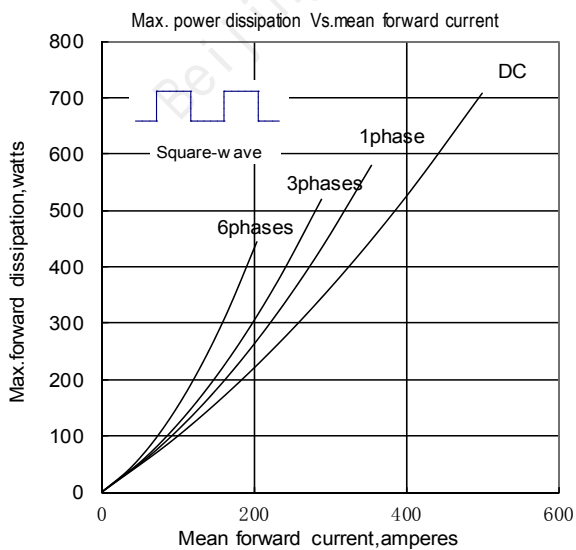


Fig.5

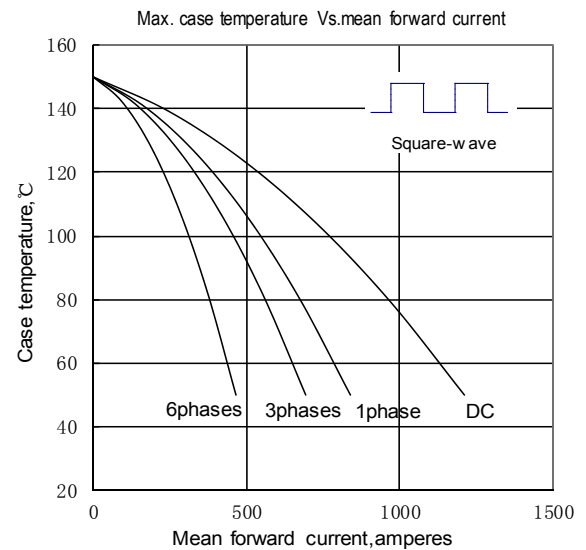


Fig.6

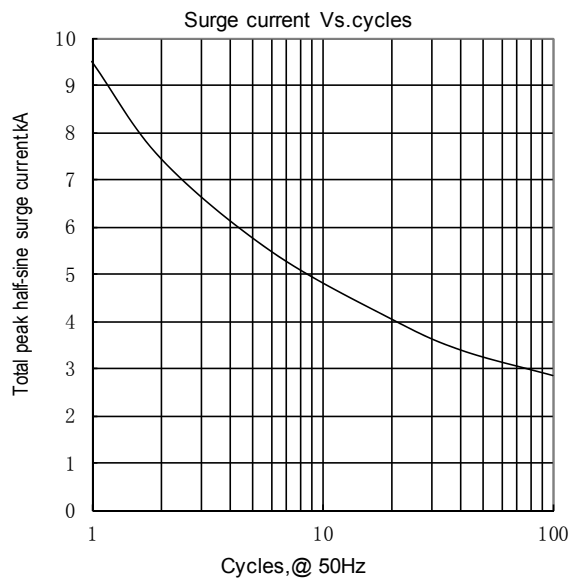


Fig.7

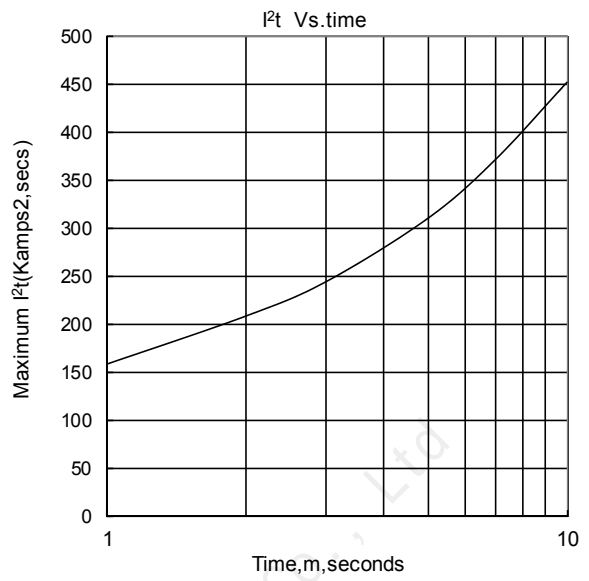


Fig.8