



High-end Power Semiconductor Manufacturer

ZP6100A 4600-5500V 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}		6140 A		
Repetitive peak reverse voltage		V_{RRM}		4600 – 5500 V		
V_{RRM} , V	4600	4800	5000	5200	5400	5500
Voltage code	46	48	50	52	54	55
T_j , °C	-40 – 150					

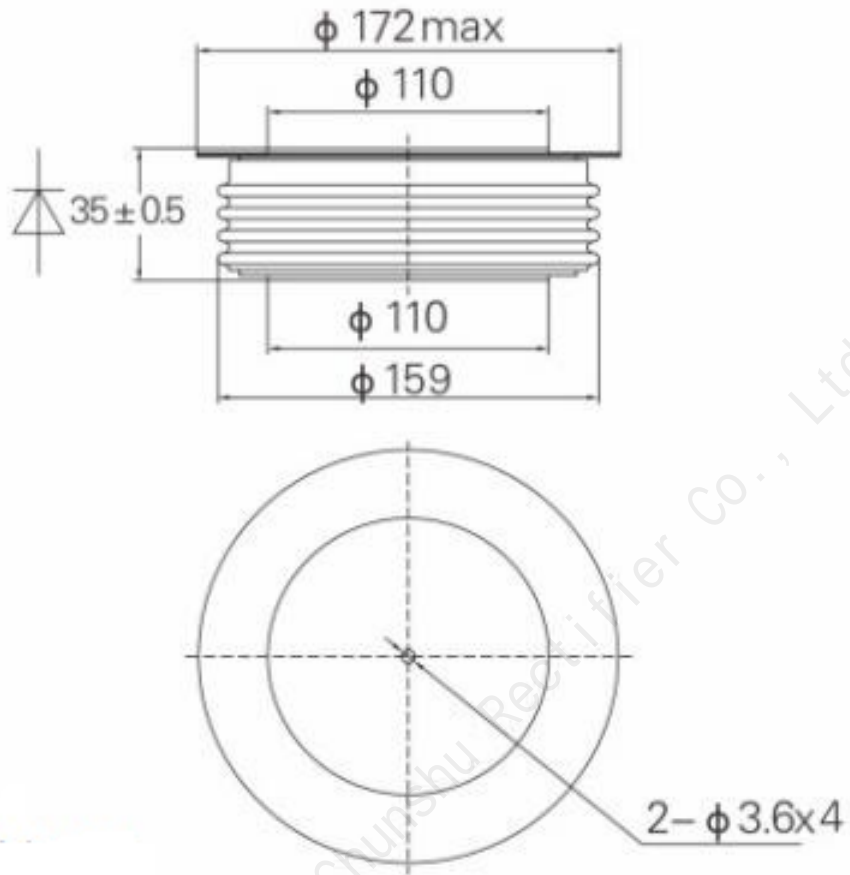
MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	6140	$T_c=100\text{ }^\circ\text{C}$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	9600	$T_c=100\text{ }^\circ\text{C}$	
I_{FSM}	Surge forward current	kA	96.9	$T_j=T_{j\text{ max}}$	180° half-sine wave; ($t_p=10\text{ ms}$); $V_R=0\text{ V}$;
I^2t	Safety factor	$A^2s \cdot 10^4$	4694.8	$T_j=T_{j\text{ max}}$	180° half-sine wave; ($t_p=10\text{ ms}$)
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	4600-5500	$T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave	
V_{RSM}	Non-repetitive peak reverse voltages	V	4700-5600	$T_j=25, 150\text{ }^\circ\text{C}$; $I_{RRM} \leq 400\text{ mA}$; $V_R=V_{RRM}$; $t_p=10\text{ ms}$	
THERMAL					
T_{stg}	Storage temperature	°C	-40-150		
T_j	Operating junction temperature	°C	-40-150		
MECHANICAL					
F	Mounting force	kN	120.0		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	1.21	$T_j=150\text{ }^\circ\text{C}; I_{TM}=6000\text{ A}$
$V_{F(TO)}$	Forward threshold voltage, max	V	0.79	$T_j=T_{j\text{ max}}$
r_T	Forward slope resistance, max	m Ω	0.070	
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	400	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.004	
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.001	
MECHANICAL				
w	Weight, typ	g	3600	

OVERALL DIMENSIONS



ZT130DT

All dimensions in millimeters

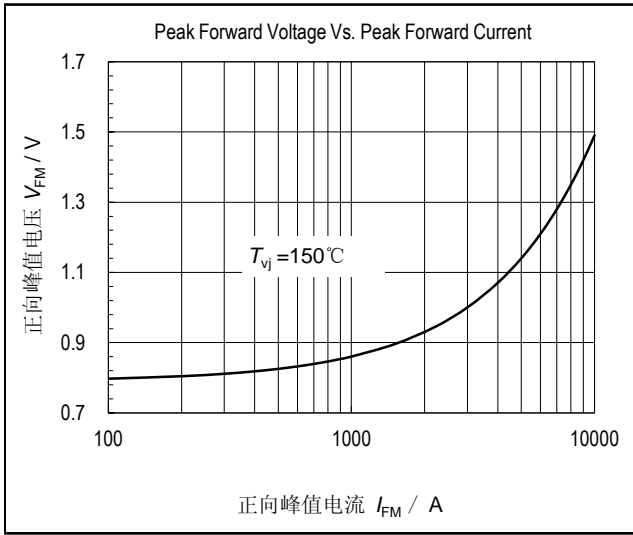


图1. 正向伏安特性曲线

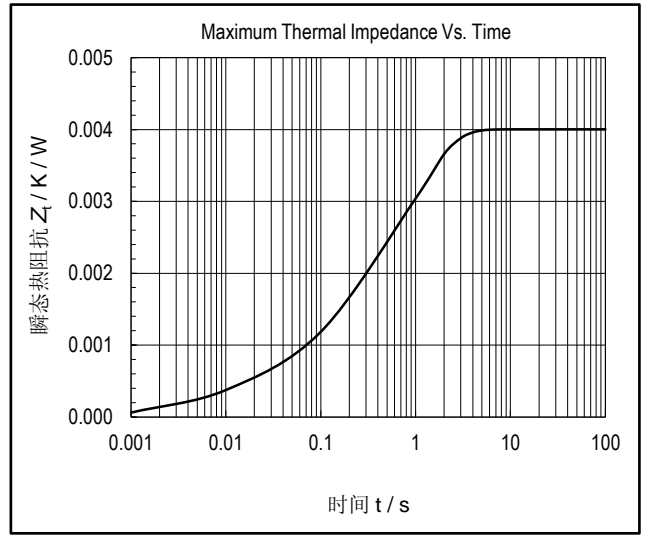


图2. 瞬态热阻抗曲线

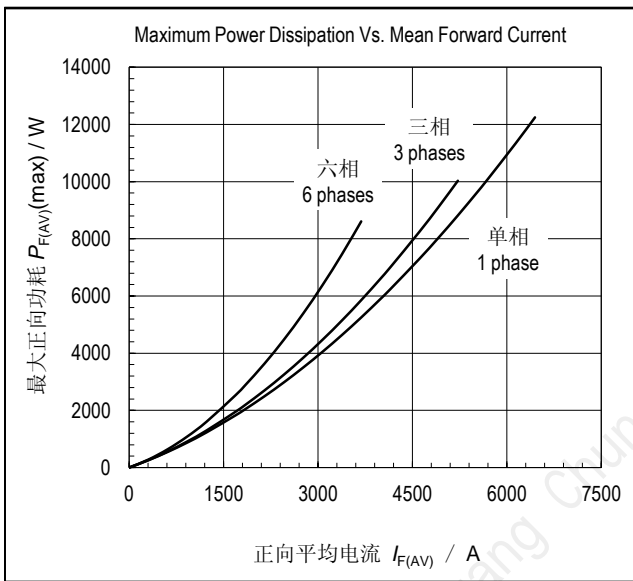


图3. 最大正向功耗与正向平均电流的关系曲线

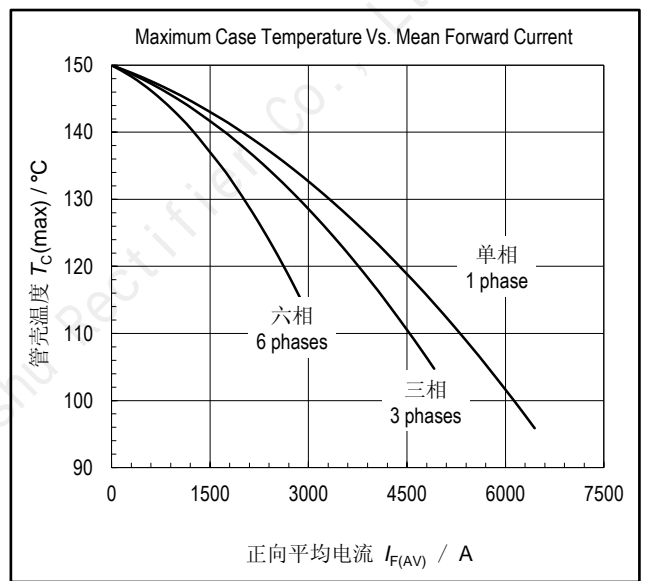


图4. 管壳温度与正向平均电流的关系曲线

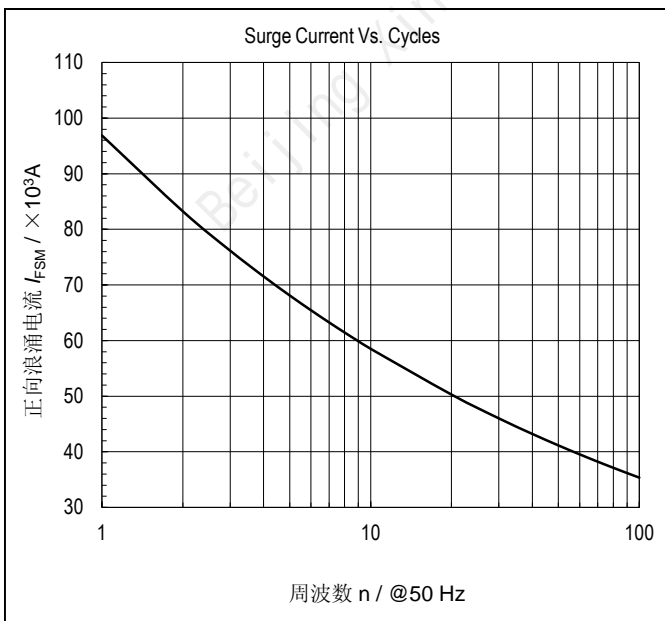


图5. 正向浪涌电流与周波数的关系曲线

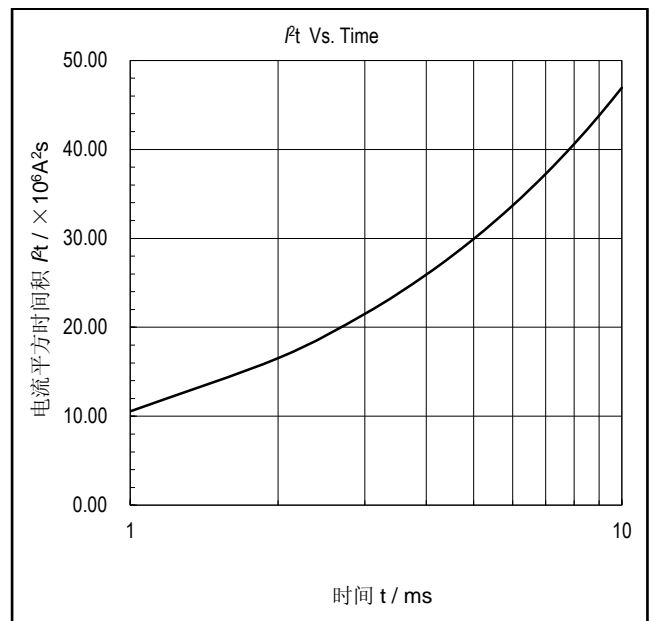


图6. I^2t 特性曲线