



High-end Power Semiconductor Manufacturer

ZK2100A 4000-5000V Fast Recovery Diode

- Low switching losses
- Low reverse recovery charge High
- power cycling capability



Average forward current			I_{FAV}	2175 A		
Repetitive peak reverse voltage			V_{RRM}	4000–5000 V		
Reverse recovery time			t_{rr}	12.00 μ s		
V_{RRM} , V	4000	4200	4400	4600	4800	5000
Voltage code	40	42	44	46	48	50
T_j , °C	– 60 – 150					

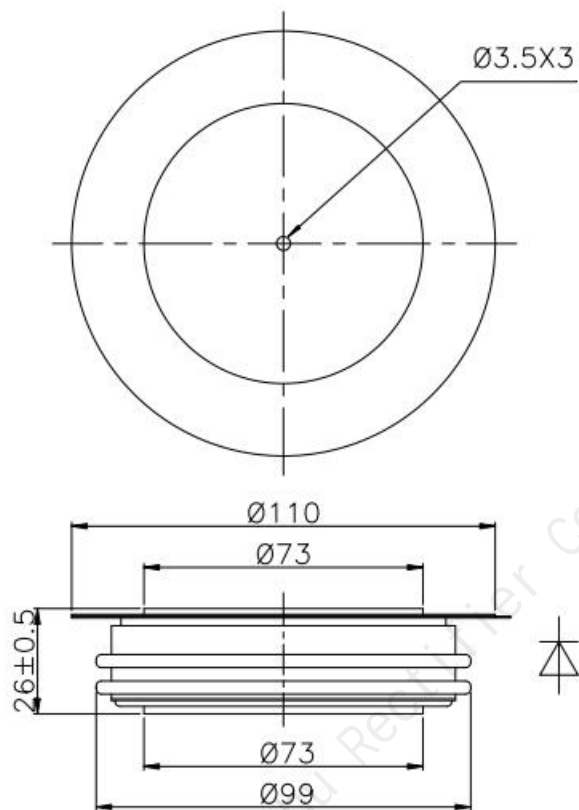
MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	2175	$T_c=85\text{ }^{\circ}\text{C}$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	30.0	$T_j=T_{j\text{ max}}$	180° half-sine wave; $t_p=10\text{ ms}$; $V_R=0.6V_{RRM}$
I^2t	Safety factor	$A^2s\cdot 10^3$	4500	$T_j=T_{j\text{ max}}$	180° half-sine wave; $t_p=10\text{ ms}$; $V_R=0.6V_{RRM}$
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	4000-5000	$t_p=10\text{ ms}$	
V_R	Reverse continuous voltages	V	$0.6\cdot V_{RRM}$	$T_j=T_{j\text{ max}};$	
THERMAL					
T_{stg}	Storage temperature	$^{\circ}\text{C}$	-40-160		
T_j	Operating junction temperature	$^{\circ}\text{C}$	-60 -150		
MECHANICAL					
F	Mounting force	kN	35- 47		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	3.00	$T_j=25\text{ }^{\circ}\text{C}; I_{TM}=3000\text{A}, F=40.0\text{kN}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.65	$T_j=T_{j\text{ max}};$	
r_T	Forward slope resistance, max	mΩ	0.25		
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	240	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$	
SWITCHING					
Q_{rr}	Total recovered charge, max	μC	2200	$I_{TM}=2000\text{A}, t_p=1000\mu\text{s},$ $-di/dt=20\text{A}/\mu\text{s},$ $V_R=50\text{V}$	
t_{rr}	Reverse recovery time ¹⁾ , max	μs	12.00		
THERMAL					
R_{thjc}	Thermal resistance, junction to case, max	°C/W	0.0100	Clamping force 40.0kN	Double side cooled
R_{thck}	Thermal resistance, case to heatsink, max	°C/W	0.0030	Clamping force 40.0kN	Double side cooled
MECHANICAL					
w	Weight, max	g	1100		

OVERALL DIMENSIONS



ZT80

All dimensions in millimeters