



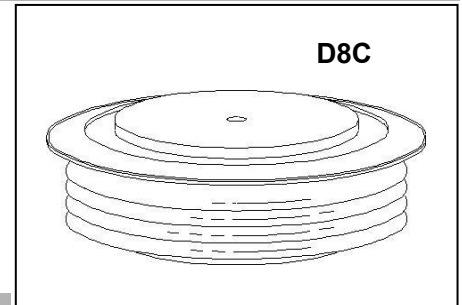
ZK1000- FAST RECOVERY DIODE

4000-4500V_{RRM}

FAST RECOVERY RECTIFIER DIODE

Features:

- . All diffused structure
- . High surge rating
- . Blocking capability up to 4500 volts
- . Soft recovery
- . Ceramic housing hermetic package
- . Pressure assembled device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V _{RRM} (1)	V _{RSM} (1)
ZK1000-40	4000	4100
ZK1000-42	4200	4300
ZK1000-45	4500	4600

V_{RRM} = Repetitive peak reverse voltage

V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage current	I _{RRM}	50mA
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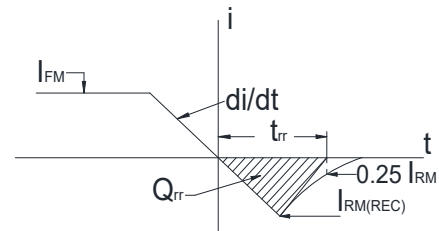
Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	I _{F(AV)}		1000		A	Sinewave 180°, T _c = 70°C
RMS forward current	I _{FRMS}		1570		A	
Peak one cycle surge (non repetitive) current	I _{FSM}		15000		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T _j = 125°C
I square t	I ² t		11.2 × 10 ⁵		A ² s	8.3 msec and 10.0 msec
Peak forward voltage	V _{FM}		2.80		V	I _{FM} = 3000A; Duty cycle ≤ 0.01%
Threshold voltage	V _{FO}		1.30		V	T _j = 125°C
Slope resistance	r _F		0.45		mΩ	1000A to 3000A
Reverse Recovery Current (4)	I _{RM(REC)}		*		A	I _{FM} = 1000 A; dI _F /dt = 10 A/μs; T _j max
Reverse Recovery Charge (4)	Q _{rr}		*		μC	I _{FM} = 1000 A; dI _F /dt = 10 A/μs; T _j max
Reverse Recovery Time (4)	t _{rr}		10		μs	I _{FM} = 1000 A; dI _F /dt = 10 A/μs; T _j max

Notes:

All ratings are specified for T_j = 25 °C, unless otherwise stated

- (1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40°C to +125 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for T_j = 125 °C.
- (4) See parameter definition below :

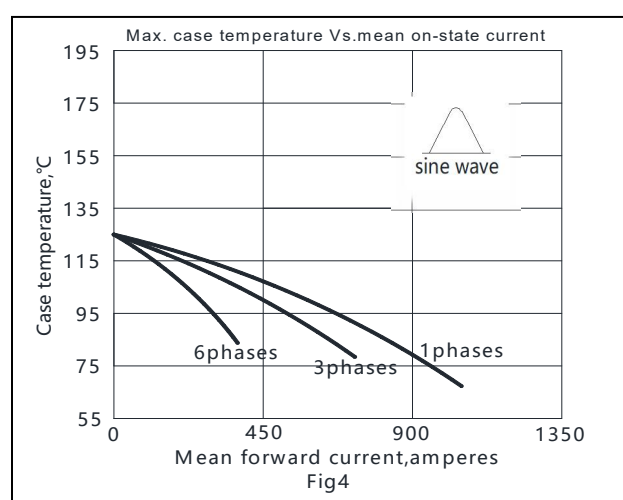
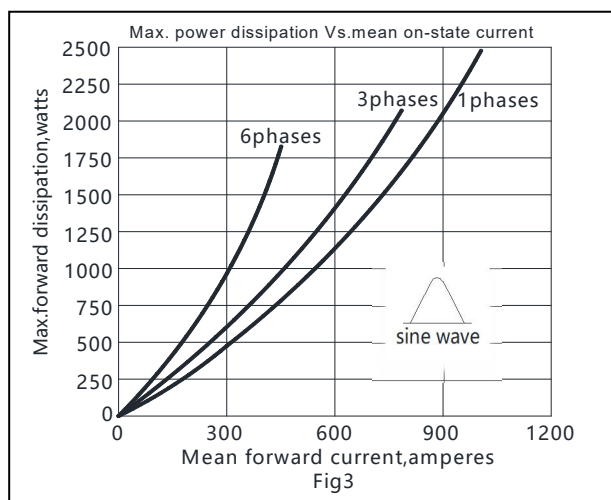
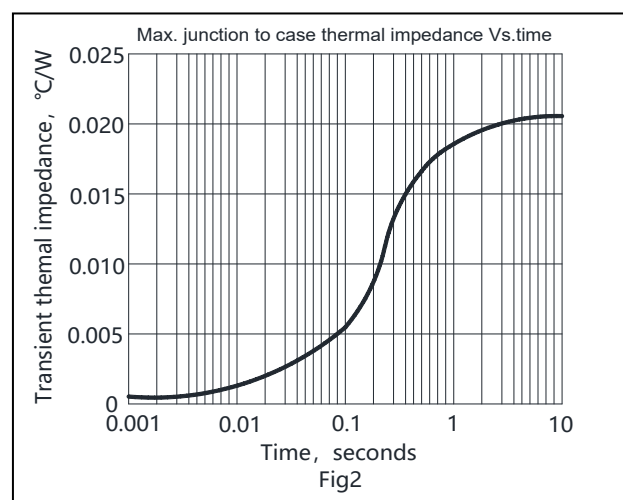
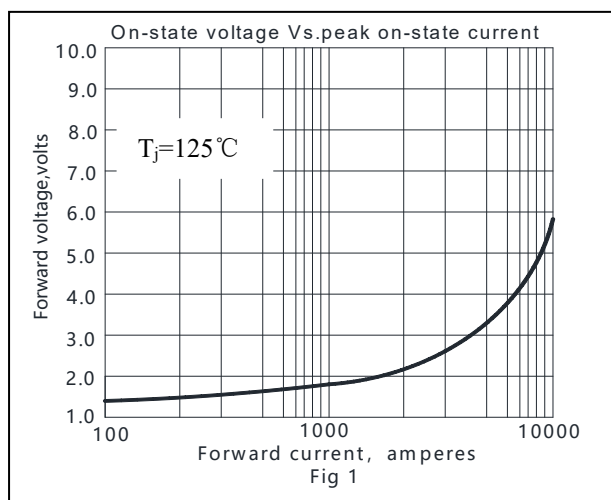


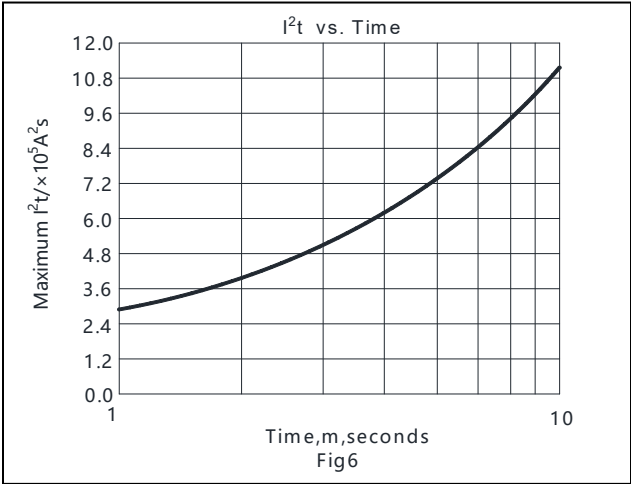
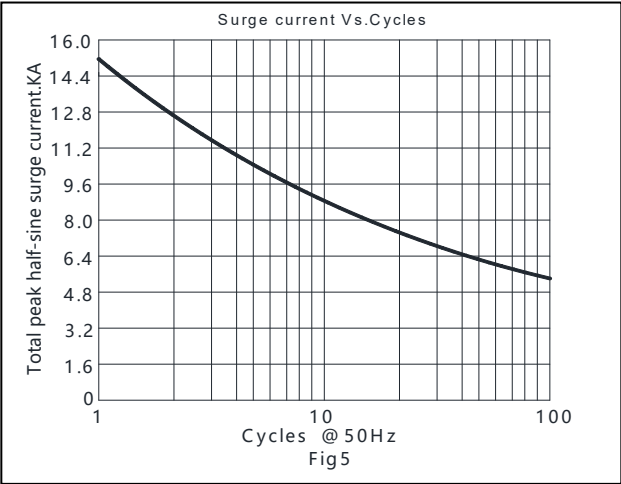
reverse recovery characteristic

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	$R_{\Theta(j-c)}$		0.022		°C/W	Double sided cooled
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.044		°C/W	Single sided cooled
Thermal resistance - case to heatsink	$R_{\Theta(c-s)}$		0.005 0.010		°C/W	Double sided cooled * Single sided cooled *
Mounting force	F			25	kN	
Weight	m			0.46	kg.	

* Mounting surfaces smooth, flat and greaseless

Graph





CASE OUTLINE AND DIMENSIONS

