



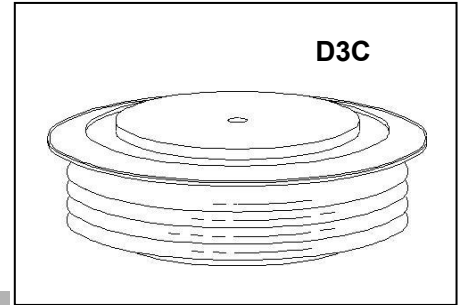
# ZK630- FAST RECOVERY DIODE

1000-1800V<sub>RRM</sub>

## FAST RECOVERY RECTIFIER DIODE

### Features:

- . All diffused structure
- . High surge rating
- . Blocking capability up to 1800 volts
- . Soft recovery
- . Ceramic housing hermetic package
- . Pressure assembled device



## ELECTRICAL CHARACTERISTICS AND RATINGS

### Reverse Blocking

Device Type	V <sub>RRM</sub> (1)	V <sub>RSM</sub> (1)
ZK630-10	1000	1100
ZK630-12	1200	1300
ZK630-14	1400	1500
ZK630-16	1600	1700
ZK630-18	1800	1900

V<sub>RRM</sub> = Repetitive peak reverse voltage

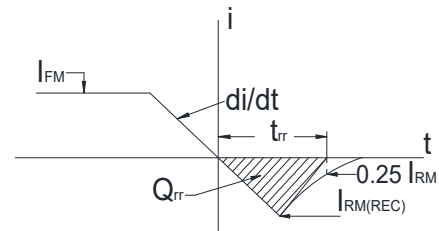
V<sub>RSM</sub> = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage current	I <sub>RRM</sub>	15 mA 35 mA (3)
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Notes:

All ratings are specified for T<sub>j</sub>=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<sub>j</sub> = 125 °C.
- (4) See parameter definition below :



reverse recovery characteristic

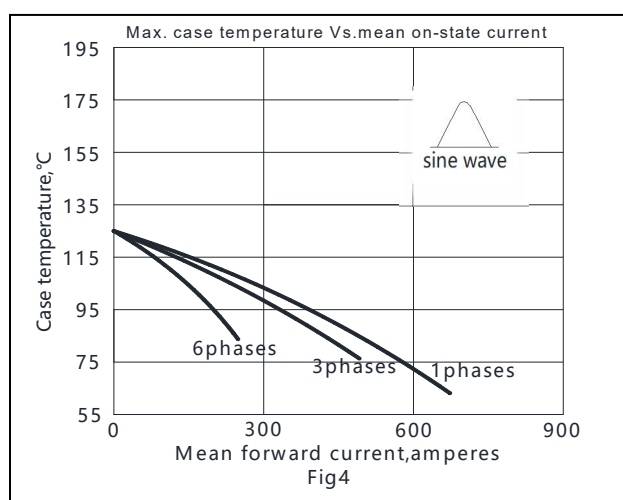
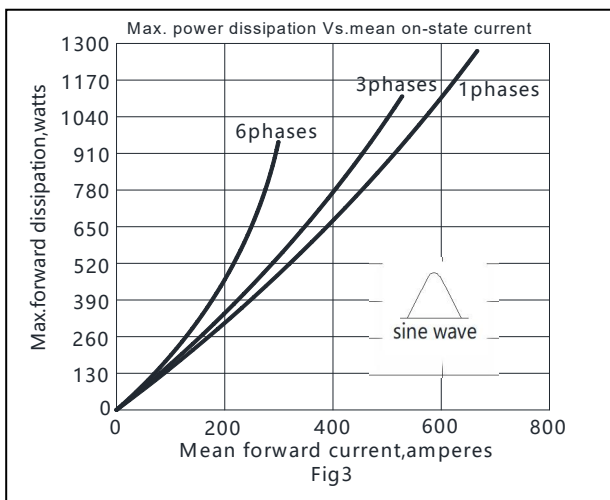
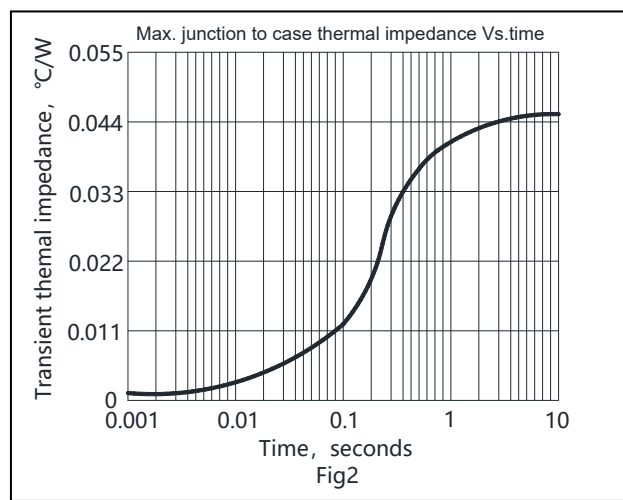
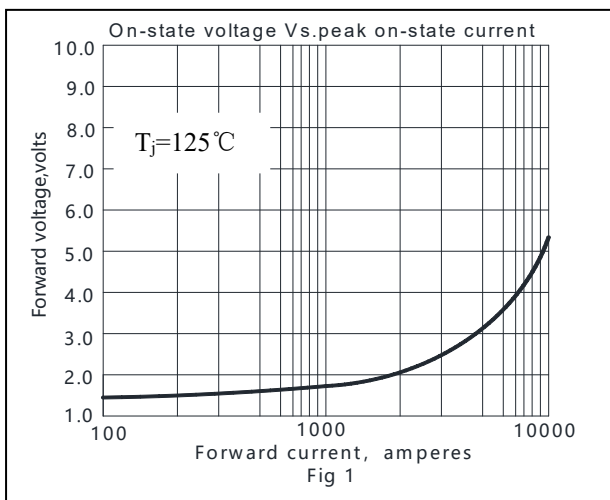
### Conducting - on state

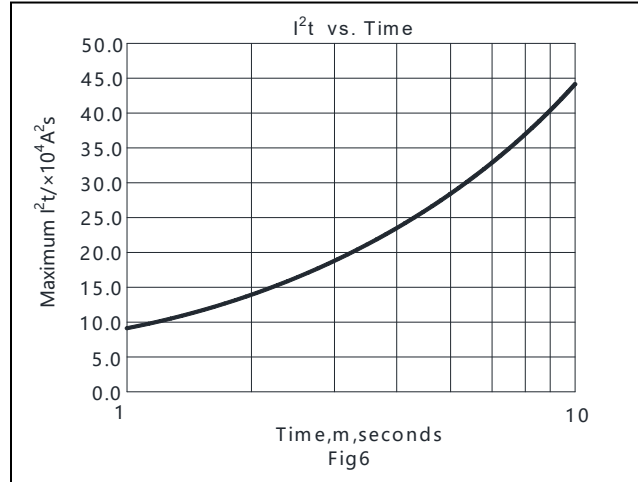
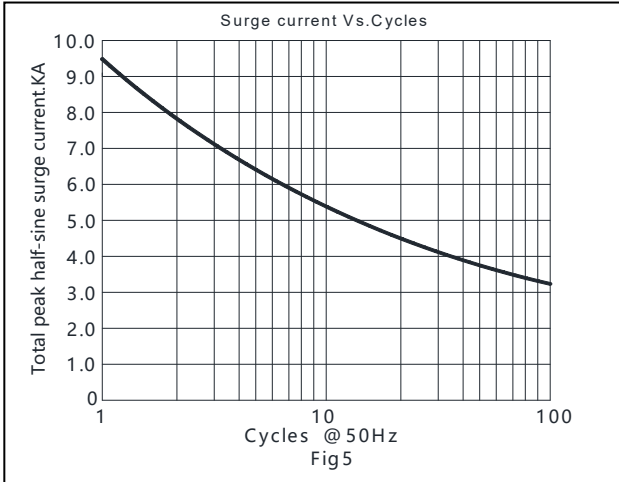
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	I <sub>F(AV)</sub>		630		A	Sinewave 180°, T <sub>c</sub> =70°C
RMS forward current	I <sub>FRMS</sub>		990		A	
Peak one cycle surge (non repetitive) current	I <sub>FSM</sub>		9450		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> =125°C
I square t	I <sup>2</sup> t		44.6 × 10 <sup>4</sup>		A <sup>2</sup> s	8.3 msec and 10.0 msec
Peak forward voltage	V <sub>FM</sub>		2.30		V	I <sub>FM</sub> = 1500A; Duty cycle ≤ 0.01%
Threshold voltage	V <sub>FO</sub>		1.30		V	T <sub>j</sub> =125°C, I = 0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub>
Slope resistance	r <sub>F</sub>		0.40		mΩ	T <sub>j</sub> =125°C, I = 0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub>
Reverse Recovery Current (4)	I <sub>RM(REC)</sub>		*		A	I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max
Reverse Recovery Charge (4)	Q <sub>rr</sub>		*		μC	I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max
Reverse Recovery Time (4)	t <sub>rr</sub>		5		μs	I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs; T <sub>j</sub> max

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	$R_{\Theta(j-c)}$		0.045		°C/W	Double sided cooled
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.090		°C/W	Single sided cooled
Thermal resistance - case to heatsink	$R_{\Theta(c-s)}$		0.010 0.020		°C/W	Double sided cooled * Single sided cooled *
Mounting force	F			13	kN	
Weight	m			0.2	kg.	

\* Mounting surfaces smooth, flat and greaseless

**Graph**





CASE OUTLINE AND DIMENSIONS

