

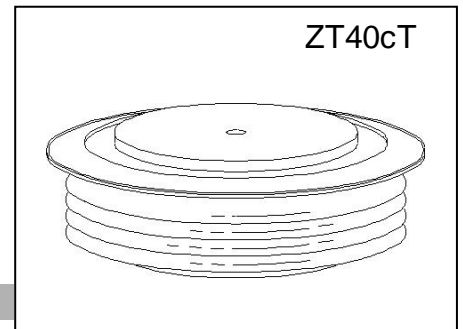


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**FAST RECOVERY RECTIFIER DIODE**

**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 <sub>RRM</sub> (1)	V <sub>RSM</sub> (1)
ZK500-40	4000	4200
ZK500-42	4200	4400
ZK500-44	4400	4600
ZK500-45	4500	4700

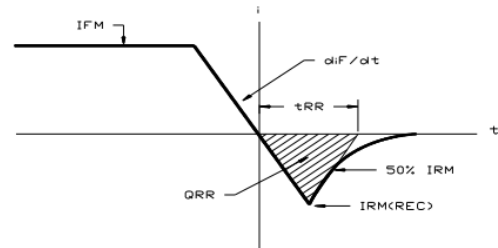
V<sub>RRM</sub> = Repetitive peak reverse voltage  
 V<sub>RSM</sub> = Non repetitive peak reverse voltage (2)

Repetitive peak reverse current	I <sub>RRM</sub>	10 mA 15 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 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>		500		A	Sinewave 180°, T <sub>c</sub> = 70°C
RMS forward current	I <sub>FRMS</sub>		785		A	
Peak one cycle surge (non repetitive) current	I <sub>FSM</sub>		7500		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 125°C
I square t	I <sup>2</sup> t		4.0x10 <sup>5</sup>		A <sup>2</sup> s	8.3 msec and 10.0 msec
Peak forward voltage	V <sub>FM</sub>		4.00		V	I <sub>FM</sub> = 1000A; Duty cycle ≤ 0.01%
Reverse Recovery Current (4)	I <sub>RM(REC)</sub>		*		A	I <sub>FM</sub> = 1000 A; diF/dt = 10 A/μs; T <sub>j</sub> max
Reverse Recovery Charge (4)	Q <sub>rr</sub>		*		μC	I <sub>FM</sub> = 1000 A; diF/dt = 10 A/μs; T <sub>j</sub> max
Reverse Recovery Time (4)	t <sub>rr</sub>		8		μs	I <sub>FM</sub> = 1000 A; diF/dt = 10 A/μs; T <sub>j</sub> max

\* For guaranteed maximum values, contact factory

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	$R_{\Theta(j-c)}$		0.039		°C/W	Double sided cooled (1) @ 2000 lb.; (2) @ 800 lb.
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.078		°C/W	Single sided cooled (1) @ 2000 lb.; (2) @ 800 lb.
Thermal resistance - case to heatsink	$R_{\Theta(c-s)}$		0.008 0.016		°C/W	Double sided cooled * Single sided cooled *
Mounting force	P			15	kN	
Weight	W			260	g	

\* Mounting surfaces smooth, flat and greaseless

**CASE OUTLINE AND DIMENSIONS**

