

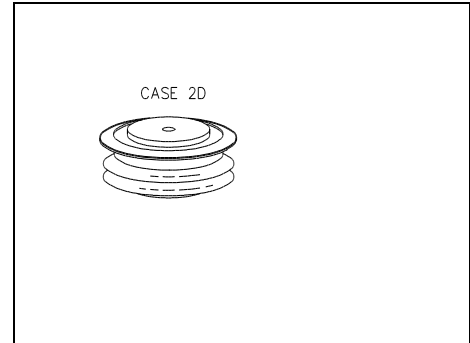
ZE650A– Fast Recovery Rectifier

500 - 1500 V_{RRM} ; 650 A avg

HIGH POWER Fast Recovery Rectifier

Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 1500 volts
- . Soft Reverse Recovery
- . Rugged Ceramic Hermetic Package
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
ZE650A/500V	500	600
ZE650A/600V	600	720
ZE650A/800V	800	960
ZE650A/1000V	1000	1150
ZE650A/1200V	1200	1300
ZE650A/1400V	1400	1400
ZE650A/1500V	1500	1600

V_{RRM} = Repetitive peak reverse voltage

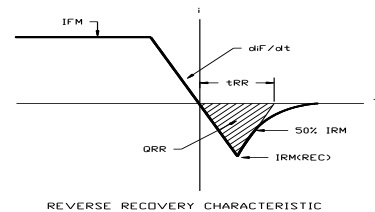
V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I_{RRM}	15 mA 40 mA (3)
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Notes:

All ratings are specified for $T_j=25^\circ\text{C}$ unless otherwise stated.

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



REVERSE RECOVERY CHARACTERISTIC

Conducting - on state

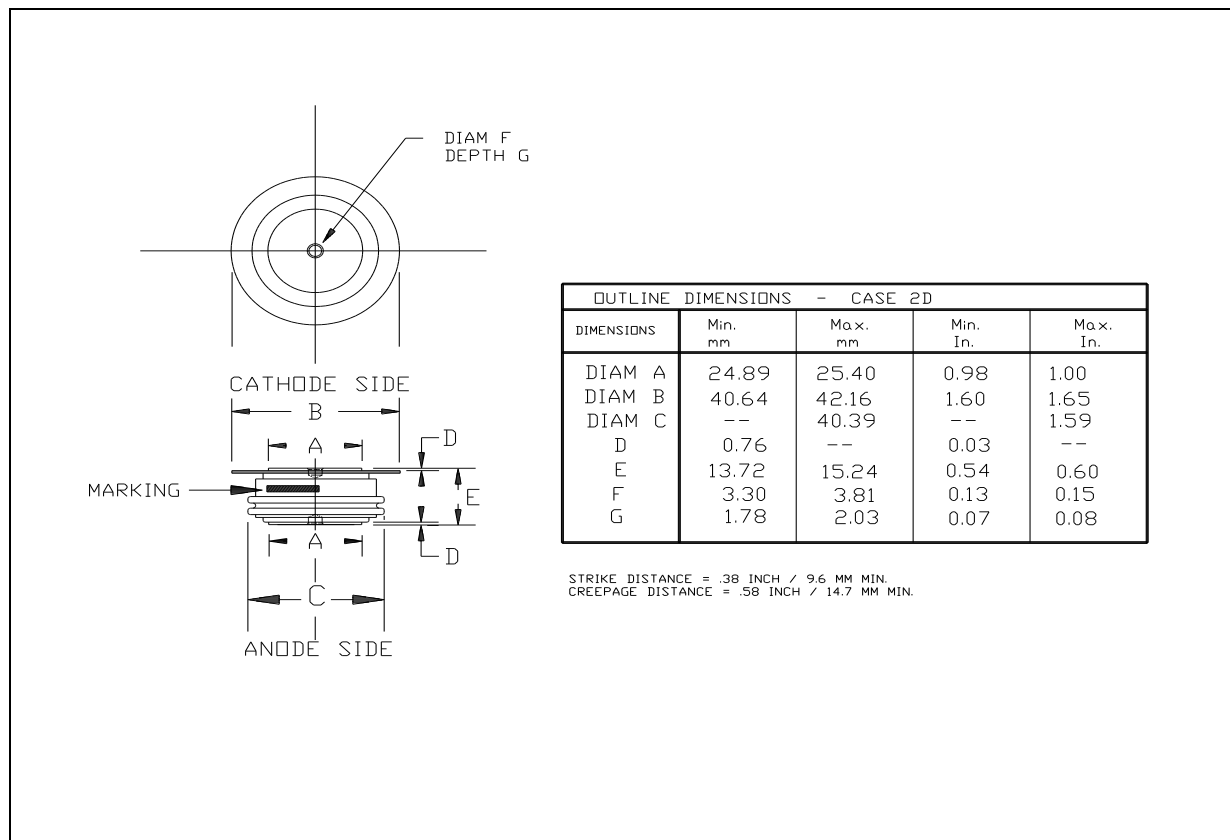
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	$I_{F(AV)}$		650		A	Sinewave, 180° conduction, $T_c = 65^\circ\text{C}$
RMS value of on-state current	I_{FRMS}		1000		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{FSM}		10000 9000		A A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, $T_j = 125^\circ\text{C}$ 10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 125^\circ\text{C}$
I square t	I^2t		410000		A^2s	8.3 msec and 10.0 msec
Peak on-state voltage	V_{FM}		1.85		V	$I_{FM} = 1500$ A; Duty cycle $\leq 0.01\%$
Reverse Recovery Current (4)	$I_{RM(REC)}$		*		A	$I_{FM} = 1000$ A; $dI_F/dt = 10$ A/ μs ; T_{jmax}
Reverse Recovery Charge (4)	Q_{rr}		120		μC	$I_{FM} = 1000$ A; $dI_F/dt = 10$ A/ μs ; T_{jmax}
Reverse Recovery Time (4)	t_{RR}		2		μs	

* 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	+125		°C	
Thermal resistance - junction to case	$R_{\theta(j-c)}$	0.045 (1)	0.055 (2)		°C/W	Double sided cooled (1) @ 2000 lb.; (2) @ 800 lb.
Thermal resistance - junction to case	$R_{\theta(j-c)}$	0.090 (1)	0.110 (2)		°C/W	Single sided cooled (1) @ 2000 lb.; (2) @ 800 lb.
Thermal resistance - case to sink	$R_{\theta(c-s)}$.030 .060		°C/W	Double sided cooled * Single sided cooled *
Mounting force	P	800 3.6	2500 11.2		lb. kN	
Weight	W			2.5 70	oz. g	

* Mounting surfaces smooth, flat and greased

CASE OUTLINE AND DIMENSIONS



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