



ZP7100 –Welding diodes

200 - 400 V_{RRM}; 7100 A avg

Welding diodes

Features:

- . All Diffused Structure
- . High current density
- . Very low on-state voltage drop
- . metal case with ceramic insulator
- . Ultra-low thermal resistance

ELECTRICAL CHARACTERISTICS AND RATINGS

Blocking - Off State

Device Type	V _{RRM} (1)	V _{RSM} (2)
ZP7100/02	200V	300V
ZP7100/04	400V	450V

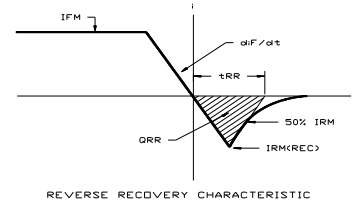
V_{RRM} = Repetitive peak reverse voltage
 V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I _{RRM}	15 mA 50 mA (3)
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Notes:

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

- (1) Half sine, f=50Hz, T_j = -40 to +170°C.
- (2) Half sine, 10 msec, T_j = -40 to +170°C.
- (3) Maximum junction temperature:T_j = 170 °C.
- (4) Parameters are defined below :

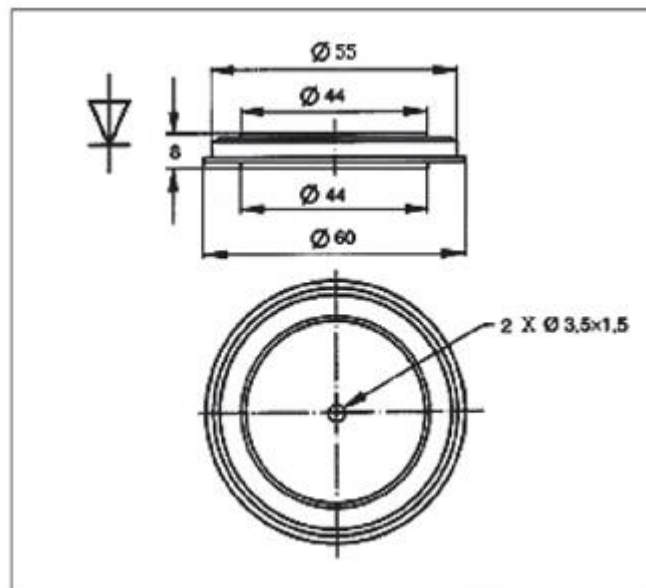


Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	I _{F(AV)}		7100		A	sine, 180° Conduction angle, T _c =85°C
RMS value of on-state current	I _{F(RMS)}		11200		A	
Peak one cycle surge (non repetitive) current	I _{FSM}		55000		A	10.0 msec ,sine, 180° Conduction angle, T _j = 170 °C
I ² t	I ² t		15100000		A ² s	10.0 msec, sine, T _j = 170 °C
Peak on-state voltage	V _{FM}		1.05		V	I _{FM} =5000 A; 25 °C
Threshold vottage	V _{TO}		0.74		V	T _j = 170 °C
Slope resistance	r _T		0.026		mΩ	T _j = 170 °C
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}				μs	

THERMAL AND MECHANICAL CHARACTERISTICS**ZP7100 –Welding diodes**

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating junction temperature range	T_j	-40	+170		°C	
Storage temperature	T_{stg}	-40	+170		°C	
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.01		°C/W	Double sided cooled
Thermal resistance - case to sink	$R_{\Theta(j-c)}$		0.02		°C/W	Single sided cooled
Creepage distance on the surface	D_s		4		mm	
Air breakdown distance	D_a		4		mm	
Mounting force	F	5000 22.2	6000 26.7		lb. kN	
Weight	W			5 140	oz. g	

CASE OUTLINE AND DIMENSIONS

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