TR2906SZ

Rectifier Diode

APPLICATIONS

- Rectification
- Freewheel Diode
- DC Motor Control
- Power Supplies
- Welding
- Battery Chargers

KEY PARAMETERS

V_{RRM}	4000V
$I_{F(AV)}$	4350A
I_{FSM}	83000A

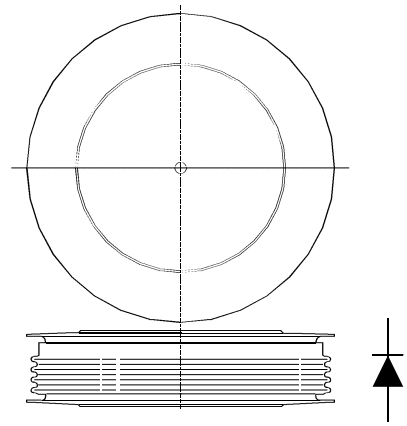
FEATURES

- Double Side Cooling
- High Surge Capability

VOLTAGE RATINGS

Type Number	Repetitive Peak Reverse Voltage V_{RRM} V	Conditions
TR2906SZ40	4000	$V_{RSM} = V_{RRM} + 100V$
TR2906SZ39	3900	
TR2906SZ38	3800	
TR2906SZ37	3700	
TR2906SZ36	3600	
TR2906SZ35	3500	

Lower voltage grades available



Package outline type code: Z

Fig. 1 See Package Details for further information

CURRENT RATINGS

Symbol	Parameter	Conditions	Max.	Units
Double Side Cooled				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 100°C	4350	A
$I_{F(RMS)}$	RMS value	T_{case} = 100°C	6830	A
I_F	Continuous (direct) forward current	T_{case} = 100°C	6160	A
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load, T_{case} = 100°C	2795	A
$I_{F(RMS)}$	RMS value	T_{case} = 100°C	4390	A
I_F	Continuous (direct) forward current	T_{case} = 100°C	3640	A

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SURGE RATINGS

Symbol	Parameter	Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; T_{case} = 150°C	66.5	kA
I^2t	I^2t for fusing	V_R = 50% V_{RRM} - 1/4 sine	22.0 x 10^6	A^2s
I_{FSM}	Surge (non-repetitive) forward current	10ms half sine; T_{case} = 150°C	83	kA
I^2t	I^2t for fusing	V_R = 0	34.5 x 10^6	A^2s

THERMAL AND MECHANICAL DATA

Symbol	Parameter	Conditions		Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance - junction to case	Double side cooled	dc	-	0.0065	°C/W
		Single side cooled	Anode dc	-	0.013	°C/W
			Cathode dc	-	0.013	°C/W
$R_{th(c-h)}$	Thermal resistance - case to heatsink	Clamping force 83.0kN with mounting compound	Double side	-	0.001	°C/W
			Single side	-	0.002	°C/W
T_{vj}	Virtual junction temperature	On-state (conducting)		-	160	°C
		Reverse (blocking)		-	150	°C
T_{stg}	Storage temperature range			-55	150	°C
-	Clamping force			75.0	91.0	kN

CHARACTERISTICS

Symbol	Parameter	Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 3000A peak, T_{case} = 25°C	-	1.06	V
I_{RRM}	Peak reverse current	At V_{RRM}, T_{case} = 150°C	-	400	mA
V_{TO}	Threshold voltage	At T_{vj} = 150C	-	0.78	V
r_T	Slope resistance	At T_{vj} = 150C	-	0.0763	mΩ

CURVES

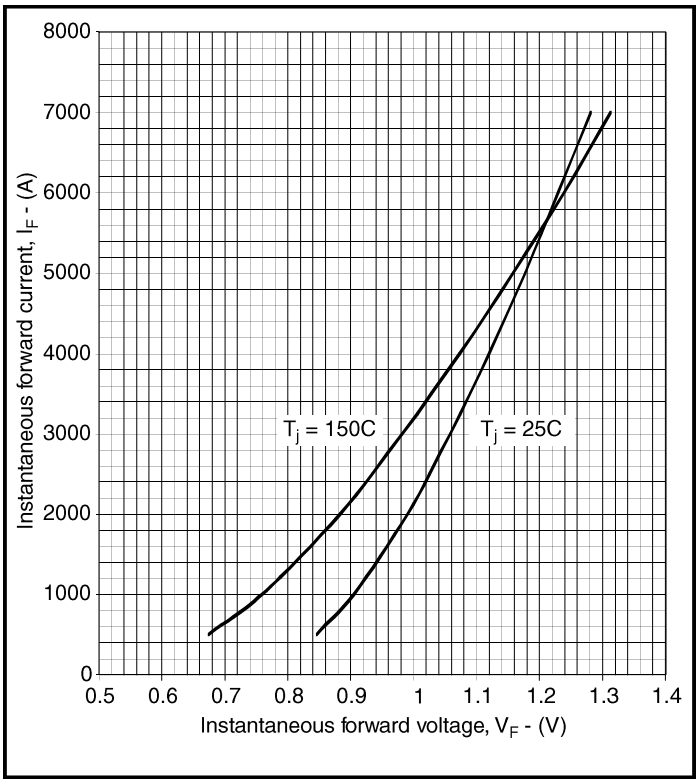


Fig. 1 Maximum (limit) forward characteristics

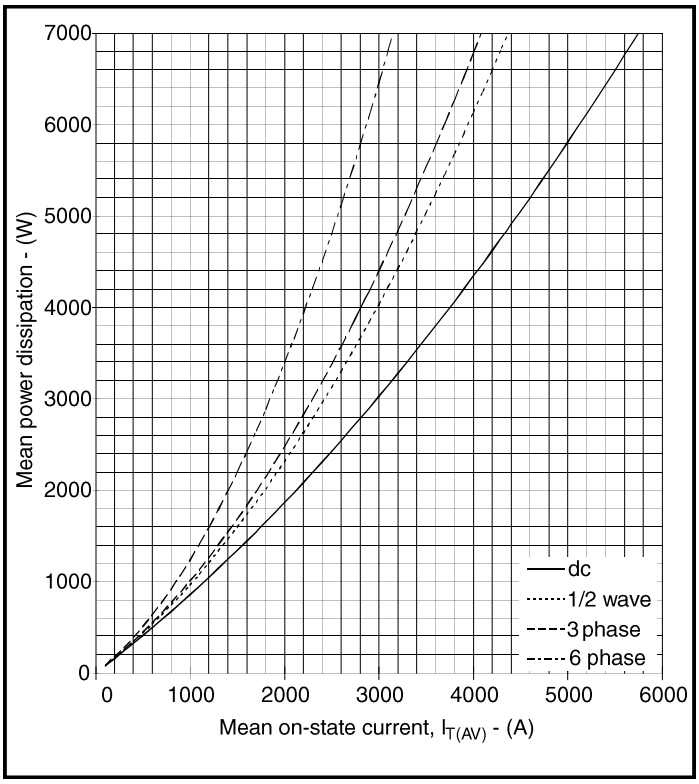


Fig. 2 Power loss curves

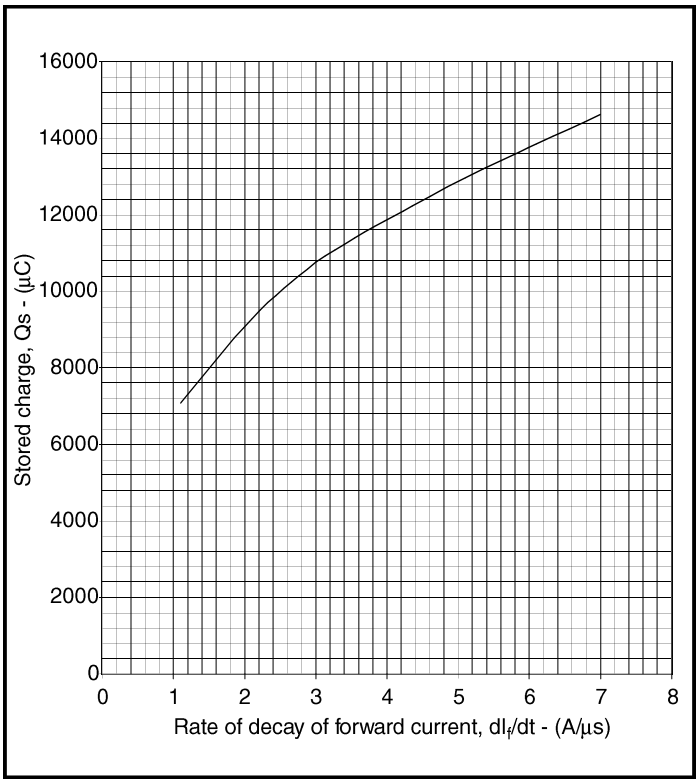


Fig. 3 Stored charge

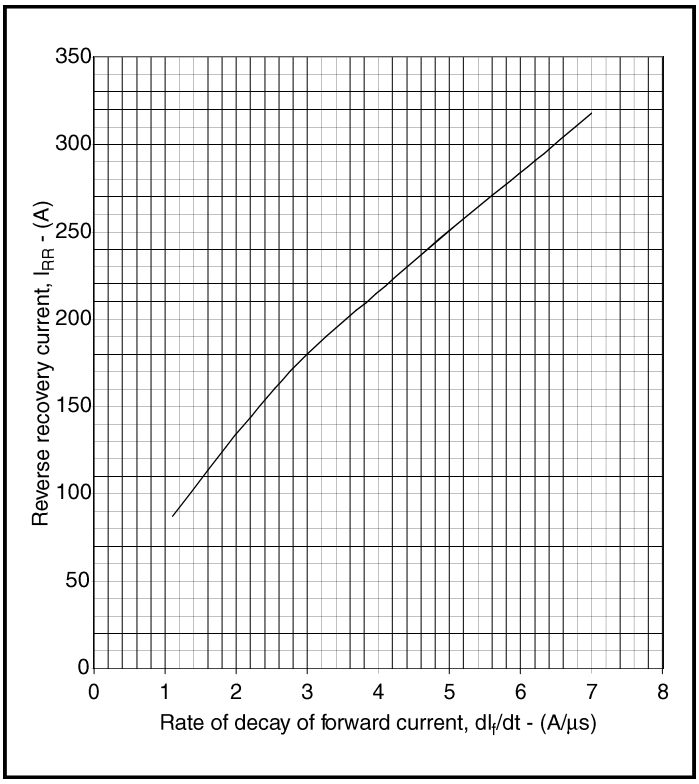


Fig. 4 Reverse recovery current

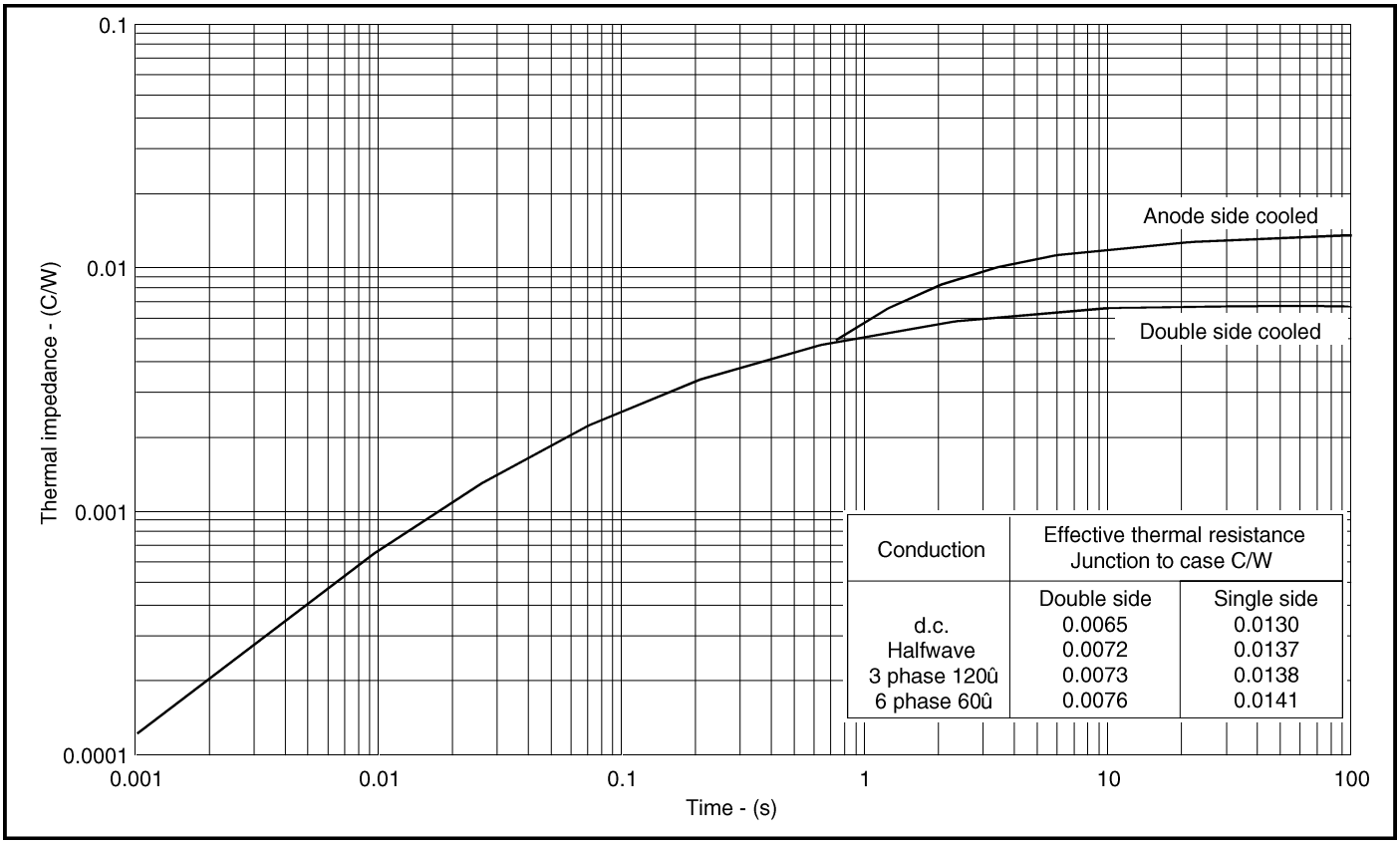
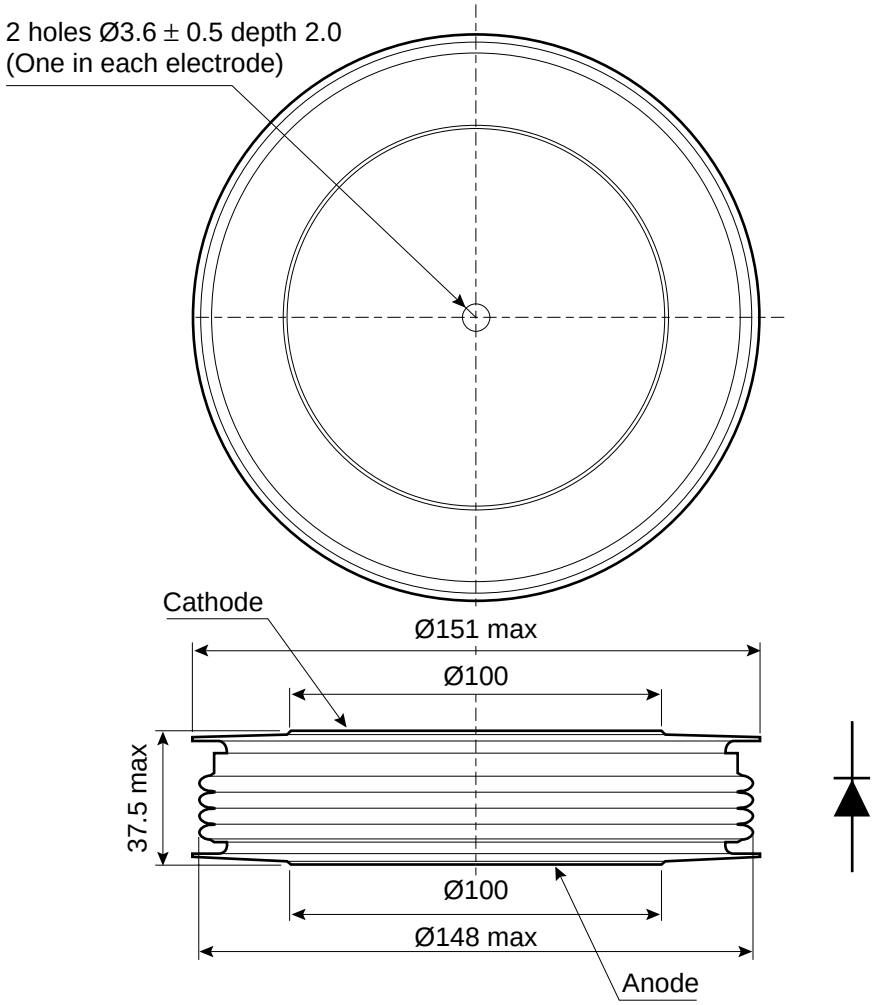


Fig. 5 Maximum (limit) transient thermal impedance - junction to case - (C/W)

PACKAGE DETAILS

For further package information, please contact your local Customer Service Centre. All dimensions in mm, unless stated otherwise. DO NOT SCALE.



Nominal weight: 2800g
Clamping force: 83kN ±10%

Package outline type code: Z