

FEATURES

- Low losses for high efficiency
- Hermetically sealed for long operational life
- Easily mounted down with 4 M8 bolts on 46mm centres
- Available with flying lead, full and half bar connections on request
- Available anode to base and cathode to base
- Selections available for parallel operation

KEY PARAMETERS

V_{RRM} **5000V**
I_{F(AV)} **470A**
I_{FSM} **9200A**

VOLTAGE RATINGS

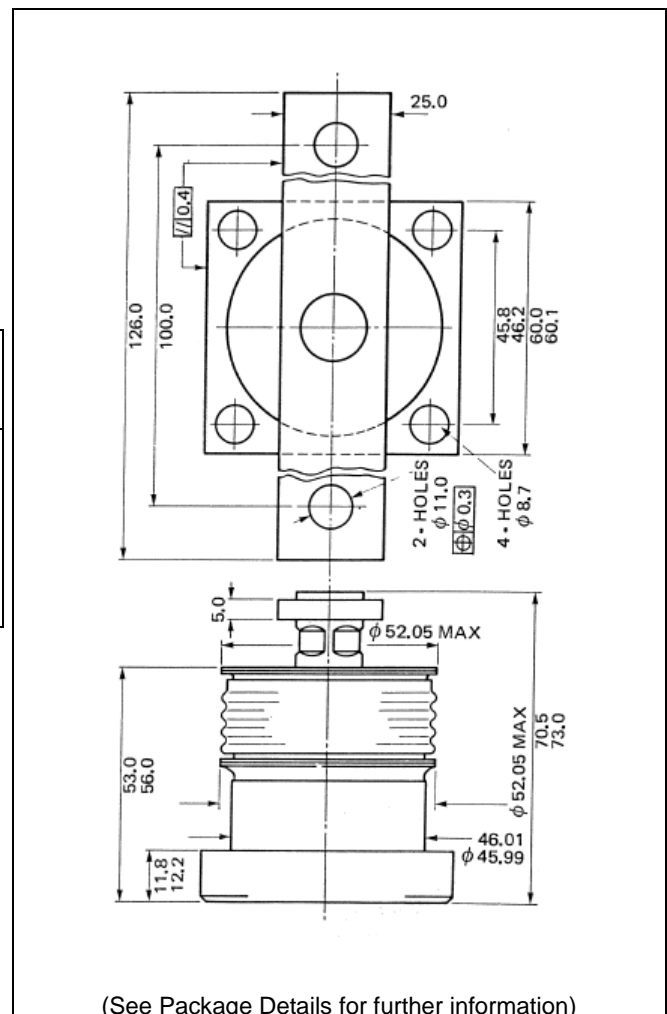
Part and Ordering Number	Repetitive Peak Voltages V _{RRM} V	Conditions
S1109SXU50 to S1109SXU30	5000 to 3000	V _{RSM} = V _{RRM} +100V

ORDERING INFORMATION

When ordering, select the required part number shown in the Voltage Ratings selection table.

For example:

S1109SXU50 for a 5000V anode to base device
S1109SXD50 for a 5000V cathode to base device



(See Package Details for further information)

Fig. 1 Package outline

CURRENT RATINGS

T_{case} = 100°C unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Single Side Cooled (Anode side)				
I _{F(AV)}	Mean forward current	Half wave resistive load	470	A
I _{F(RMS)}	RMS value	-	736	A
I _F	Continuous (direct) on-state current	-	580	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I _{FSM}	Surge (non-repetitive) on-state current	10ms half sine, T _{case} = 150°C	9.2	kA
I ² t	I ² t for fusing	V _R = 50% V _{RRM} - ¼ sine	0.441	MA ² s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
R _{th(j-c)}	Thermal resistance – junction to heatsink	dc	-	0.065	°C/W
		Half wave		0.065	°C/W
		3 phase		0.078	°C/W
T _{vj}	Virtual junction temperature	On-state (conducting)	-	150	°C
		Reverse (blocking)	-	150	°C
T _{stg}	Storage temperature range		-55	165	°C
Torque	Clamping torque		0	22	Nm

CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 1800A peak, $T_{case} = 150^{\circ}C$	-	2.1	V
I_{RM}	Peak reverse current	At V_{DRM} , $T_{case} = 150^{\circ}C$	-	50	mA
Q_S	Total stored charge	$I_F = 1000A$, $dI_{RR}/dt = 3A/\mu s$	-	2800	μC
I_{rr}	Peak reverse recovery current	$T_{case} = 150^{\circ}C$, $V_R = 100V$	-	80	A
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	0.88	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.687	$m\Omega$

CURVES

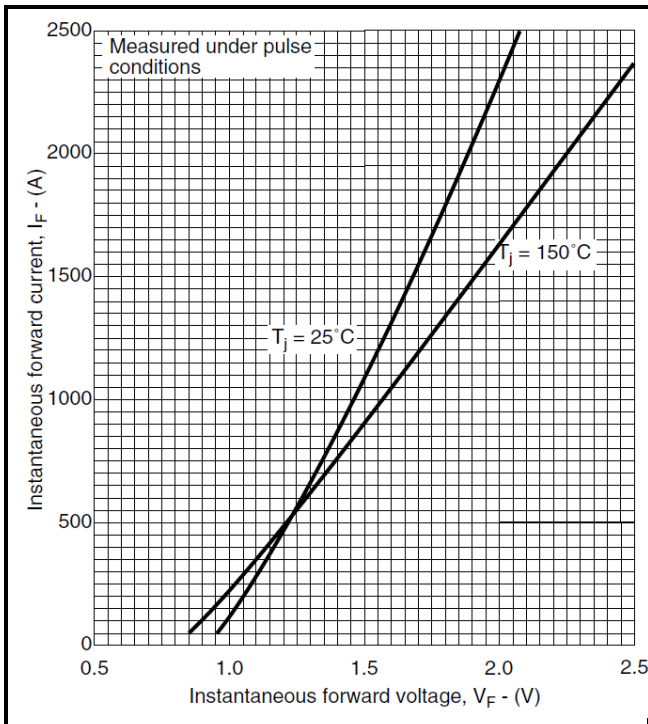


Fig.2 Maximum & minimum on-state characteristics

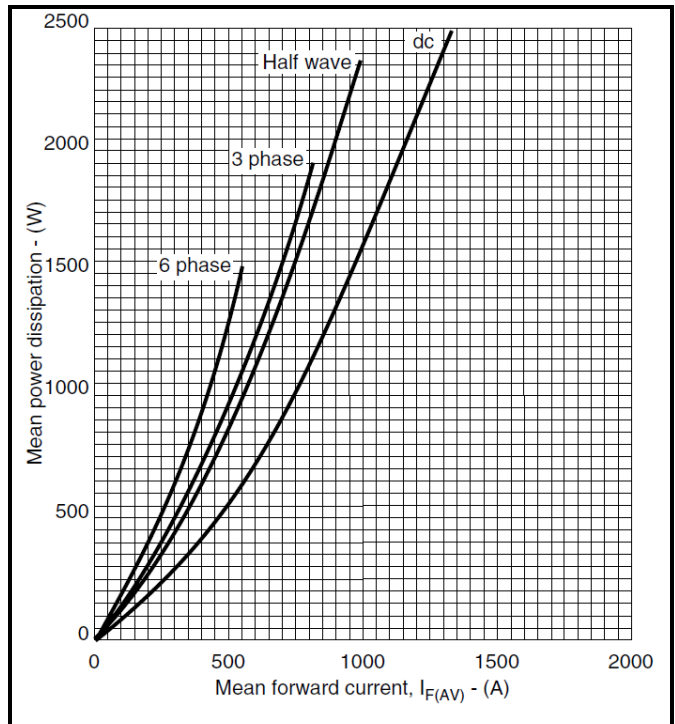


Fig.3 Dissipation curves

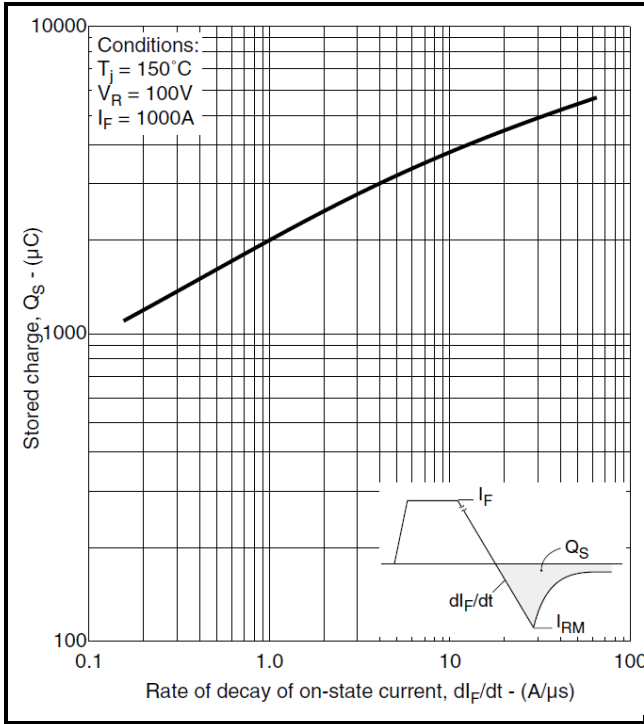


Fig.4 Total stored charge

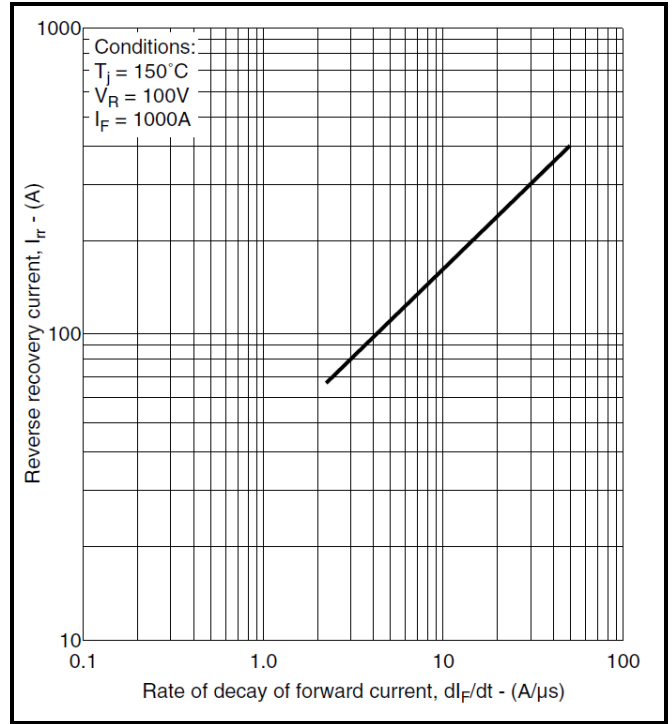


Fig.5 Maximum reverse recovery current

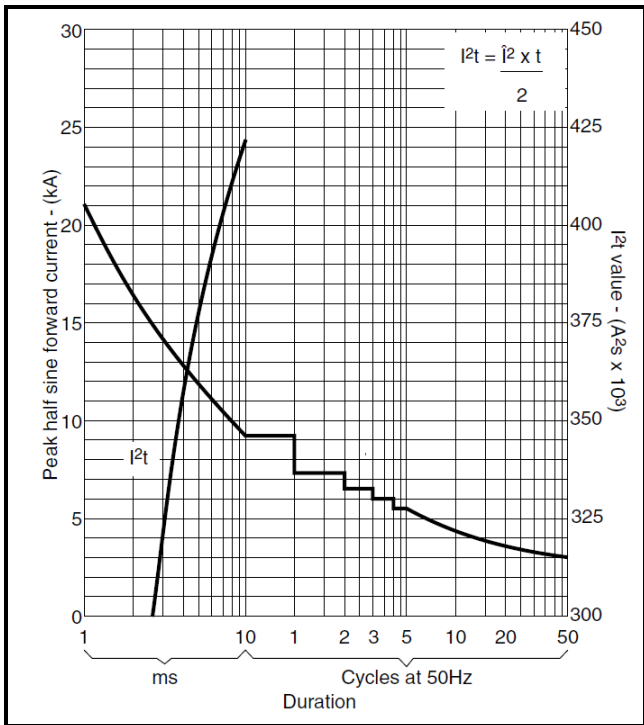


Fig.5 Surge (Non-Repetitive) Forward current vs time

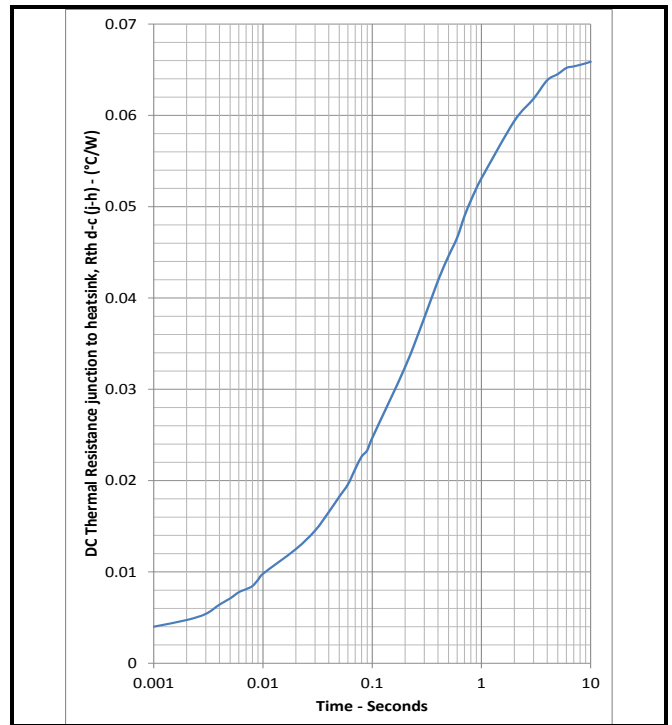
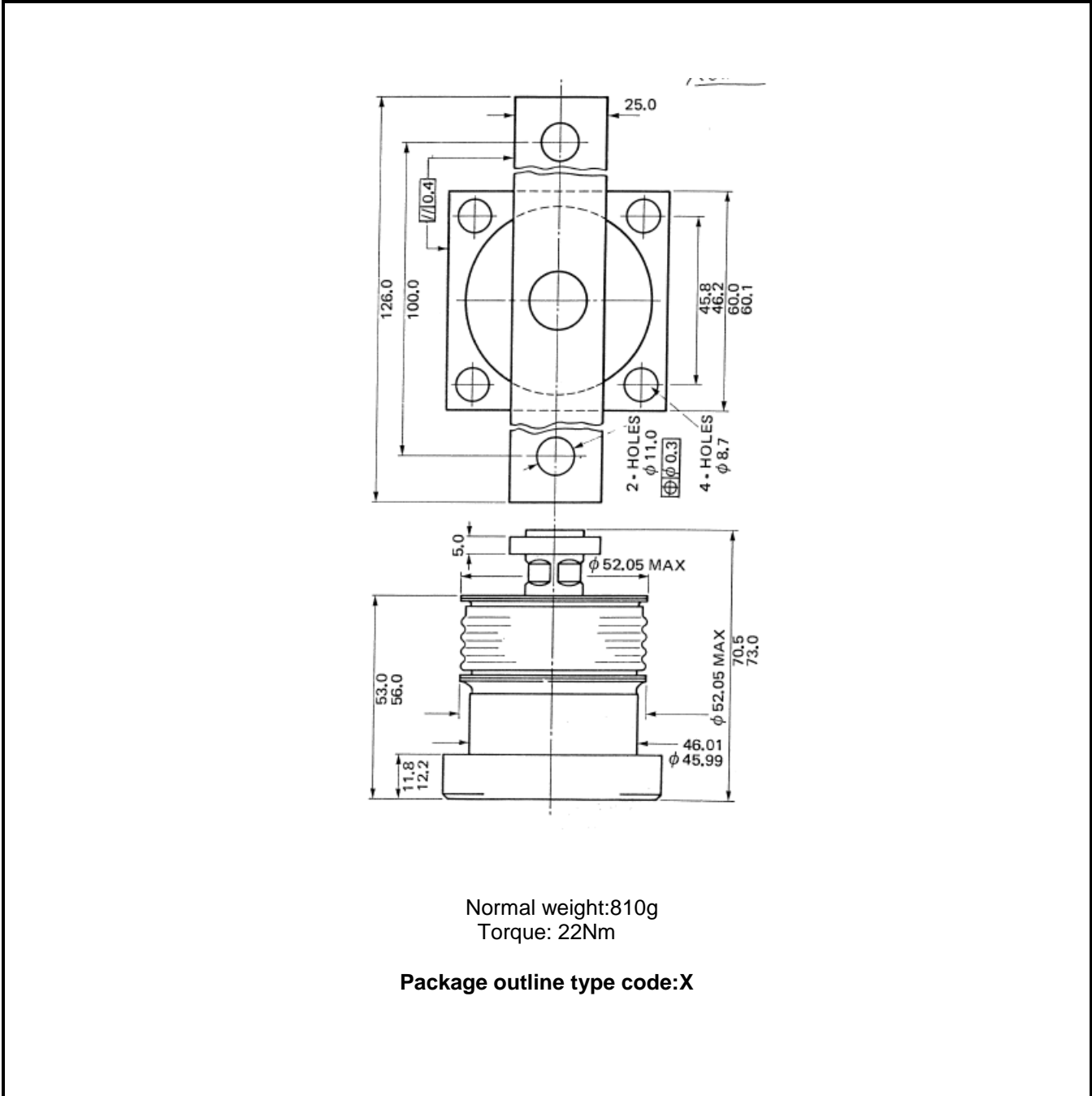


Fig.7 Maximum (limit) transient thermal impedance-junction to heatsink

PACKAGE DETAILS

For further package information, please contact Customer Services. All dimensions in mm, unless stated otherwise. DO NOT SCALE.



Note:
Some packages may be supplied with gate and or tags.

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