

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} **6000V**
I_{F(AV)} **412A**
I_{FSM} **8500A**

VOLTAGE RATINGS

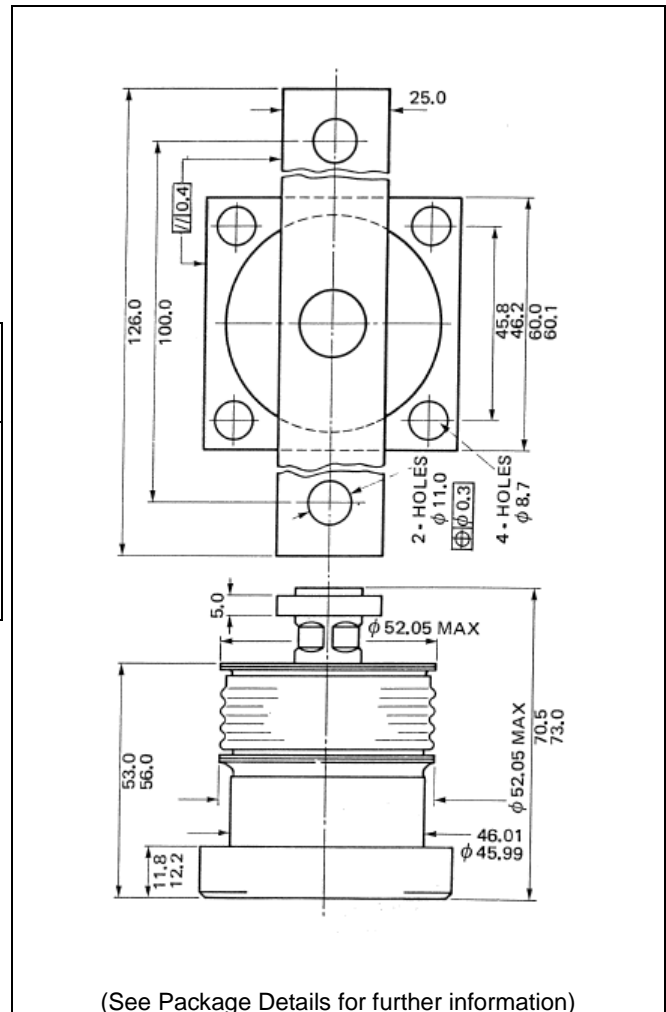
Part and Ordering Number	Repetitive Peak Voltages V _{RRM} V	Conditions
S1112SXU60 to S1112SXU40	6000 to 4000	V _{RSM} = V _{RRM} +100V

ORDERING INFORMATION

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

For example:

S1112SXU60 for a 6000V anode to base device
S1112SXD60 for a 6000V 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	412	A
I _{F(RMS)}	RMS value	-	648	A
I _F	Continuous (direct) on-state current	-	532	A

SURGE RATINGS

Symbol	Parameter	Test Conditions	Max.	Units
I _{FSM}	Surge (non-repetitive) on-state current	10ms half sine, T _{case} = 150°C	8.5	kA
I ² t	I ² t for fusing	V _R = 50% V _{RRM} - ¼ sine	0.361	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, $T_{case} = 150^{\circ}C$	-	2.6	V
I_{RM}	Peak reverse current	At V_{DRM} , $T_{case} = 150^{\circ}C$	-	75	mA
Q_S	Total stored charge	$I_F = 1000A$, $dI_{RR}/dt = 3A/\mu s$	-	3000	μC
I_{rr}	Peak reverse recovery current	$T_{case} = 150^{\circ}C$, $V_R = 100V$	-	85	A
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	0.97	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.872	$m\Omega$

CURVES

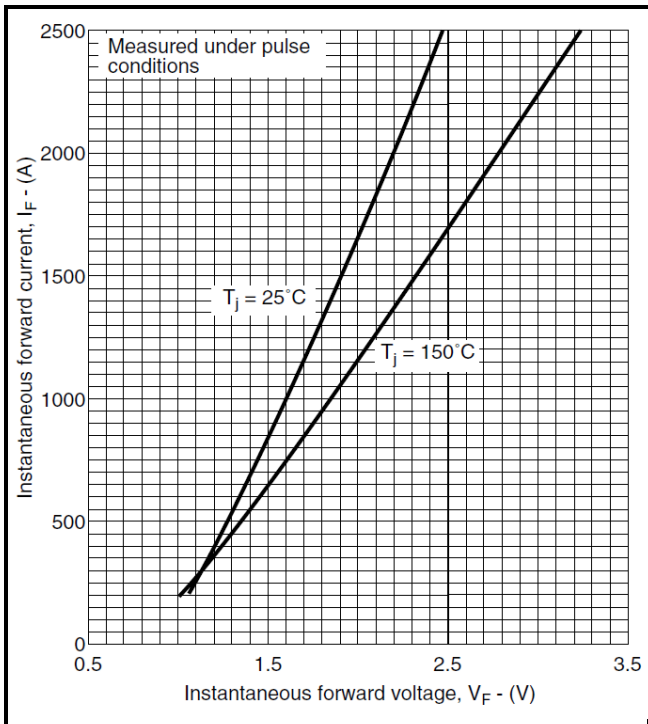


Fig.2 Maximum & minimum on-state characteristics

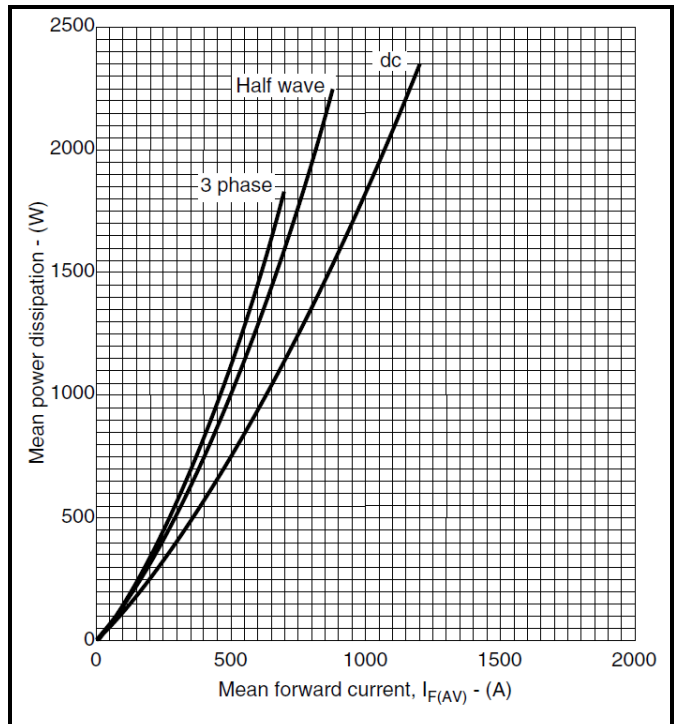


Fig.3 Dissipation curves

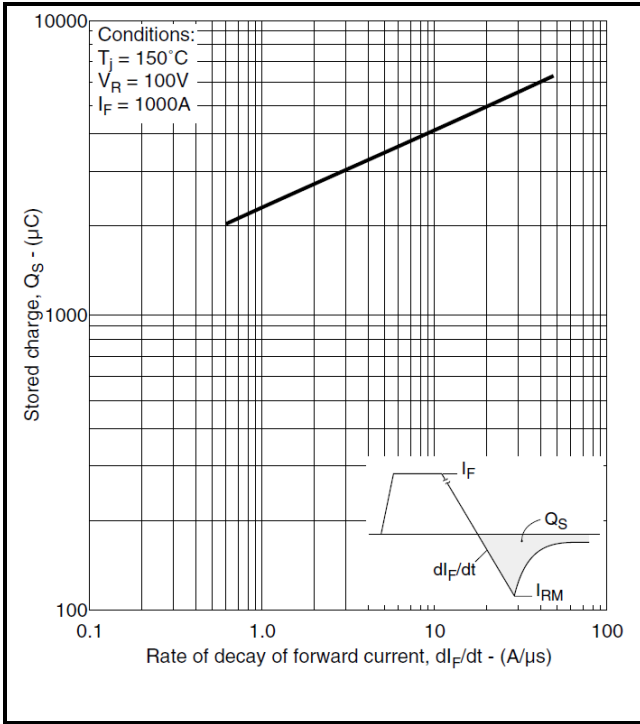


Fig.4 Total stored charge

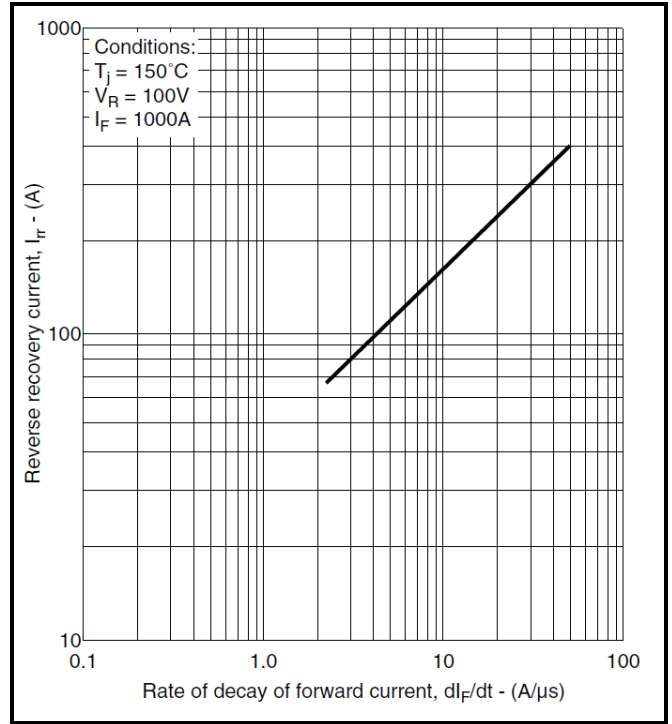


Fig.5 Maximum reverse recovery current

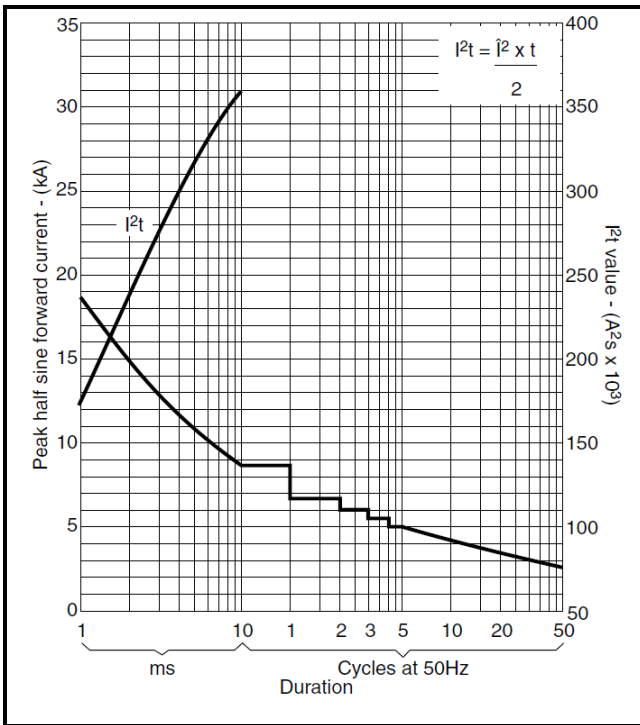


Fig.6 Surge (Non-Repetitive) Forward current vs time

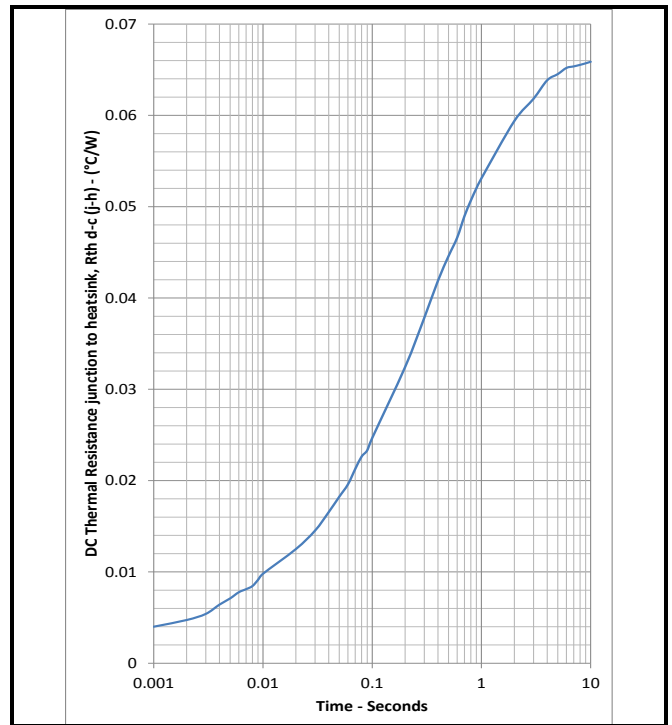
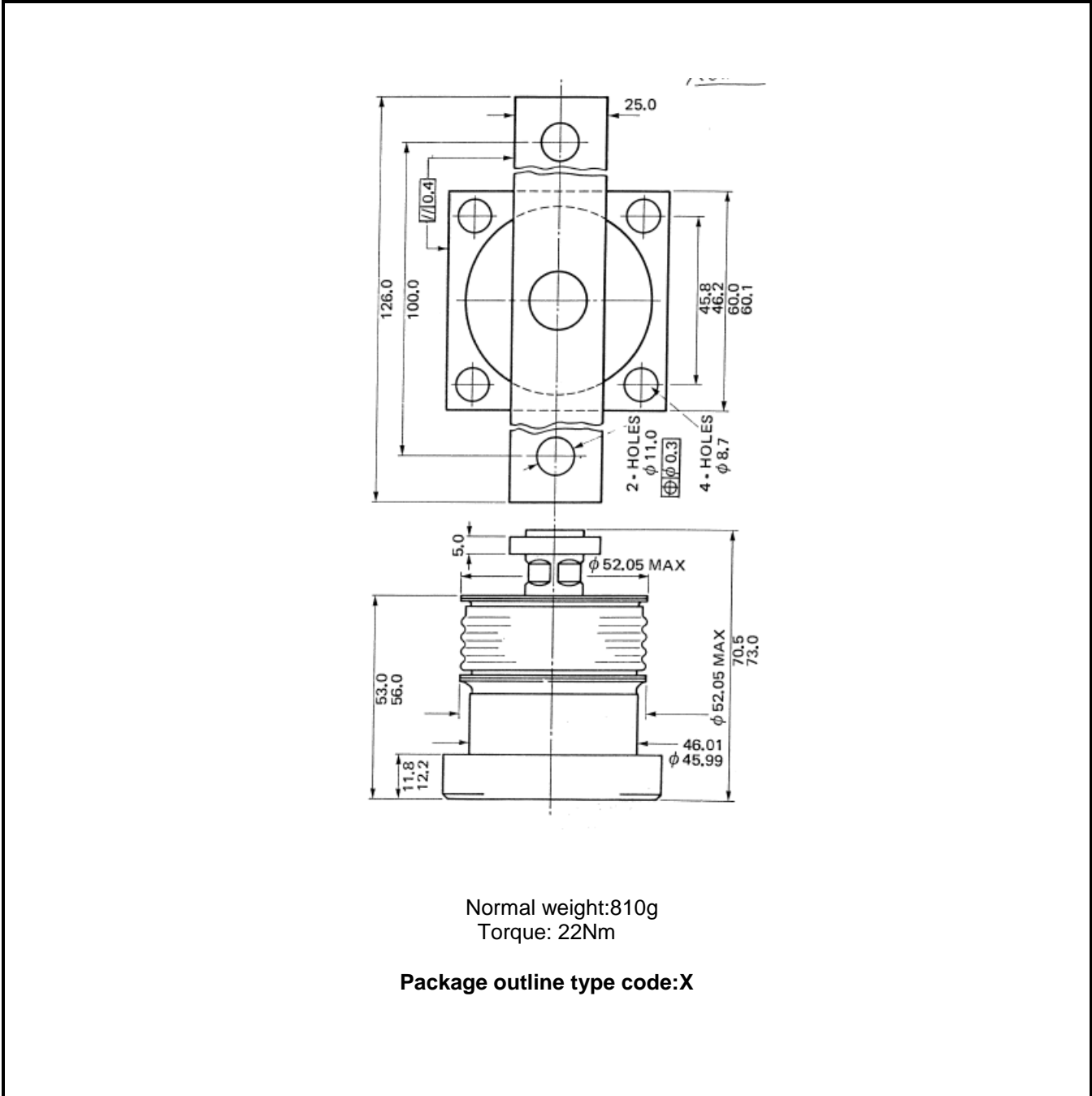


Fig.7 Maximum (limit) transient thermal impedance-junction to heatsink

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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Extended exposure to conditions outside the product ratings may affect reliability leading to premature product failure. Use outside the product ratings is likely to cause permanent damage to the product. In extreme conditions, as with all semiconductors, this may include potentially hazardous rupture, a large current to flow or high voltage arcing, resulting in fire or explosion. Appropriate application design and safety precautions should always be followed to protect persons and property.

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Target Information:	This is the most tentative form of information and represents a very preliminary specification. No actual design work on the product has been started.
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