

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}	4000V
$I_{F(AV)}$	570A
I_{FSM}	12000A

VOLTAGE RATINGS

Part and Ordering Number	Repetitive Peak Voltages V_{RRM} V	Conditions
S1107SXU40 to S1107SXU25	4000 to 2500	$V_{RSM} = V_{RRM} + 100V$

ORDERING INFORMATION

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

For example:

S1107SXU40 for a 4000V anode to base device
S1107SXD40 for a 4000V cathode to base device

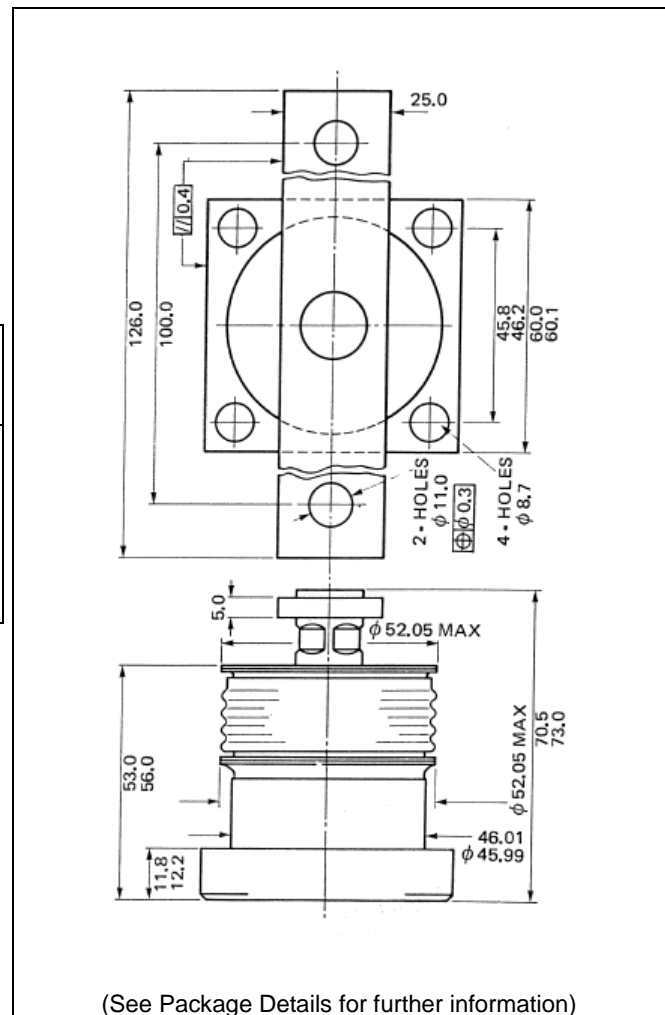


Fig. 1 Package outline

CURRENT RATINGS

$T_{case} = 100^{\circ}\text{C}$ unless stated otherwise

Symbol	Parameter	Test Conditions	Max.	Units
Single Side Cooled (Anode side)				
$I_{F(AV)}$	Mean forward current	Half wave resistive load	570	A
$I_{F(RMS)}$	RMS value	-	895	A
I_F	Continuous (direct) on-state current	-	750	A

SURGE RATINGS

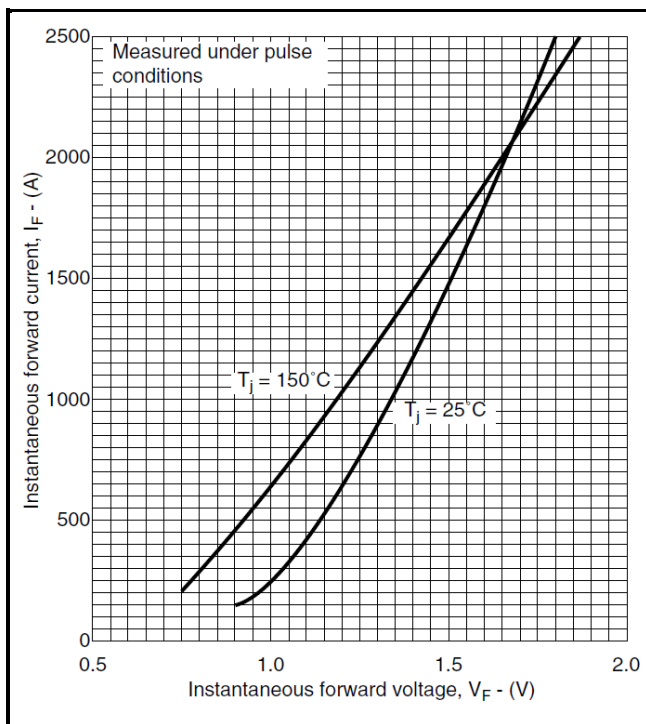
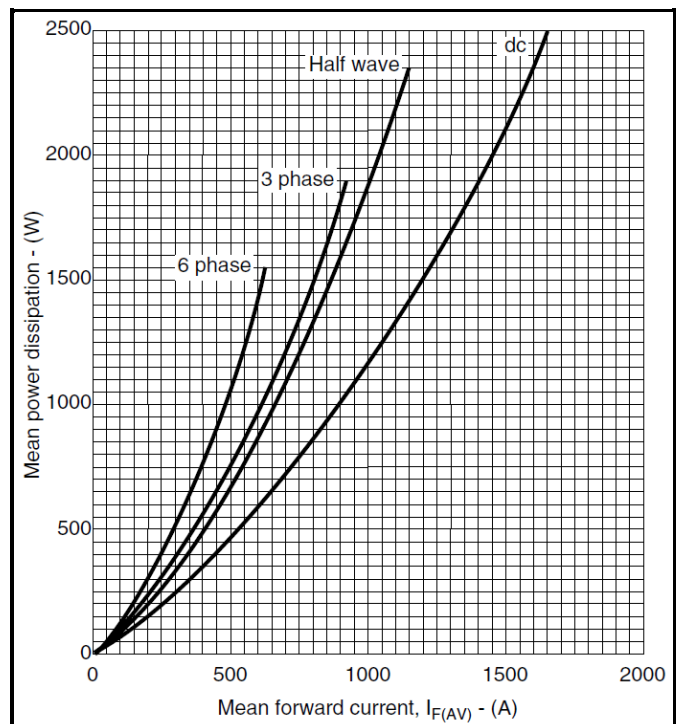
Symbol	Parameter	Test Conditions	Max.	Units
I_{FSM}	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 150^{\circ}\text{C}$	12	kA
I^2t	I^2t for fusing	$V_R = 50\% V_{RRM} - \frac{1}{4}$ sine	0.72	MA^2s

THERMAL AND MECHANICAL RATINGS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
$R_{th(j-c)}$	Thermal resistance – junction to heatsink	dc	-	0.065	$^{\circ}\text{C/W}$
		Half wave		0.065	$^{\circ}\text{C/W}$
		3 phase		0.078	$^{\circ}\text{C/W}$
T_{vj}	Virtual junction temperature	On-state (conducting)	-	150	$^{\circ}\text{C}$
		Reverse (blocking)	-	150	$^{\circ}\text{C}$
T_{sig}	Storage temperature range		-55	165	$^{\circ}\text{C}$
Torque	Clamping torque		0	22	Nm

CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Max.	Units
V_{FM}	Forward voltage	At 1800A peak, $T_{case} = 150^{\circ}C$	-	1.55	V
I_{RM}	Peak reverse current	At V_{DRM} , $T_{case} = 150^{\circ}C$	-	50	mA
Q_S	Total stored charge	$I_F = 1000A$, $dI_{RR}/dt = 3A/\mu s$	-	2000	μC
I_{rr}	Peak reverse recovery current	$T_{case} = 150^{\circ}C$, $V_R = 100V$	-	80	A
V_{TO}	Threshold voltage	At $T_{vj} = 150^{\circ}C$	-	0.75	V
r_T	Slope resistance	At $T_{vj} = 150^{\circ}C$	-	0.44	$m\Omega$

CURVES

Fig.2 Maximum & minimum on-state characteristics

Fig.3 Dissipation curves

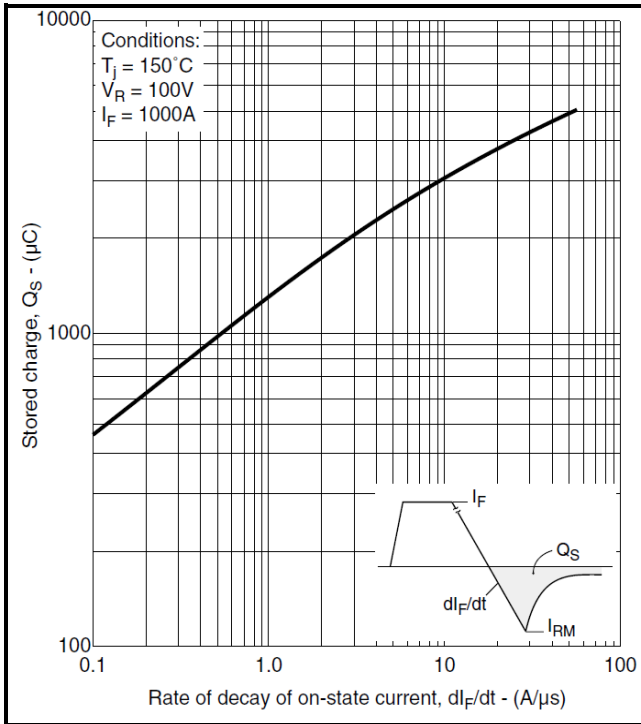


Fig.4 Total stored charge

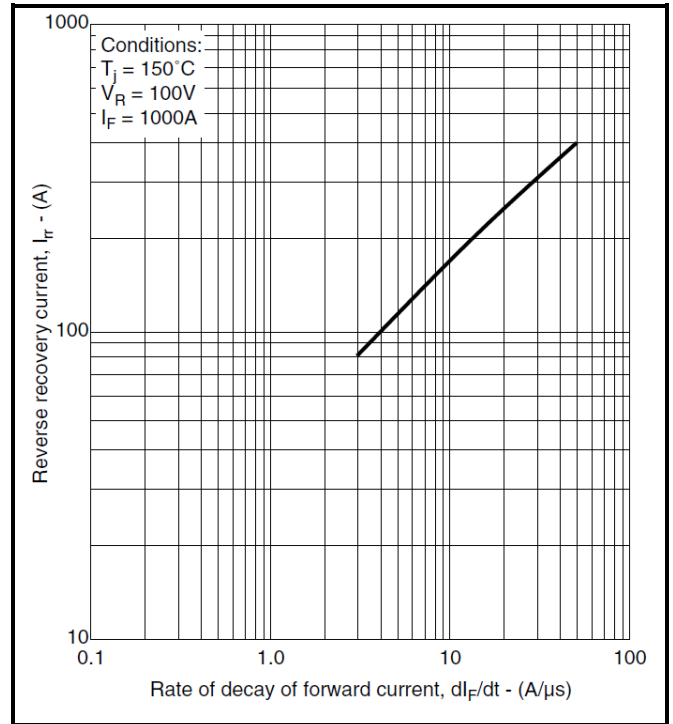


Fig.5 Maximum reverse recovery current

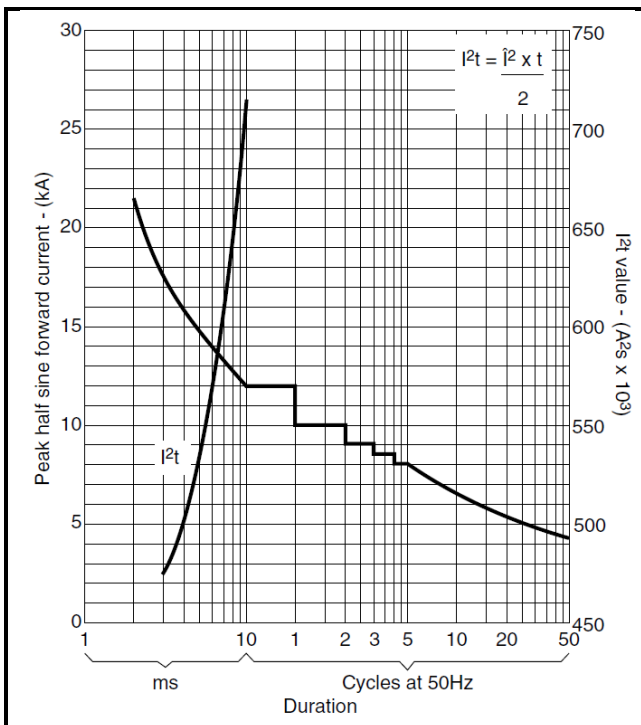


Fig.5 Surge (Non-Repetitive) Forward current vs time

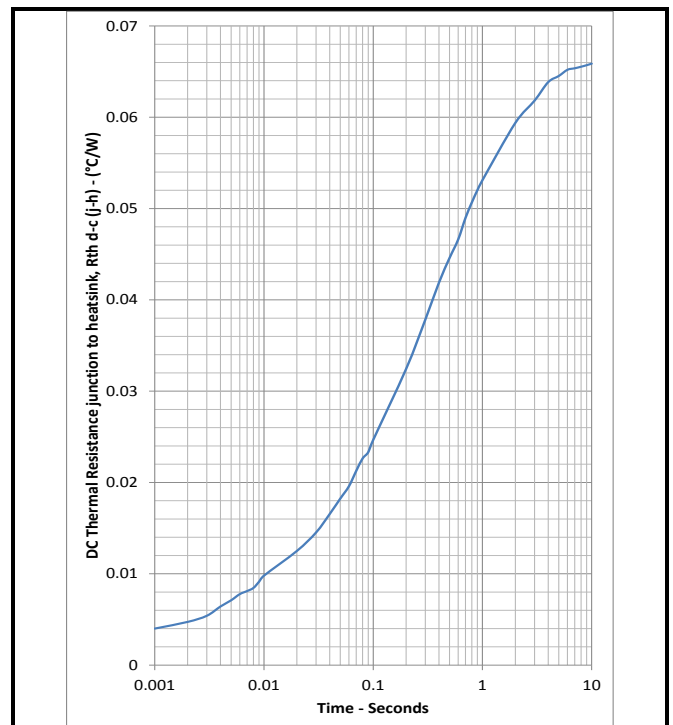
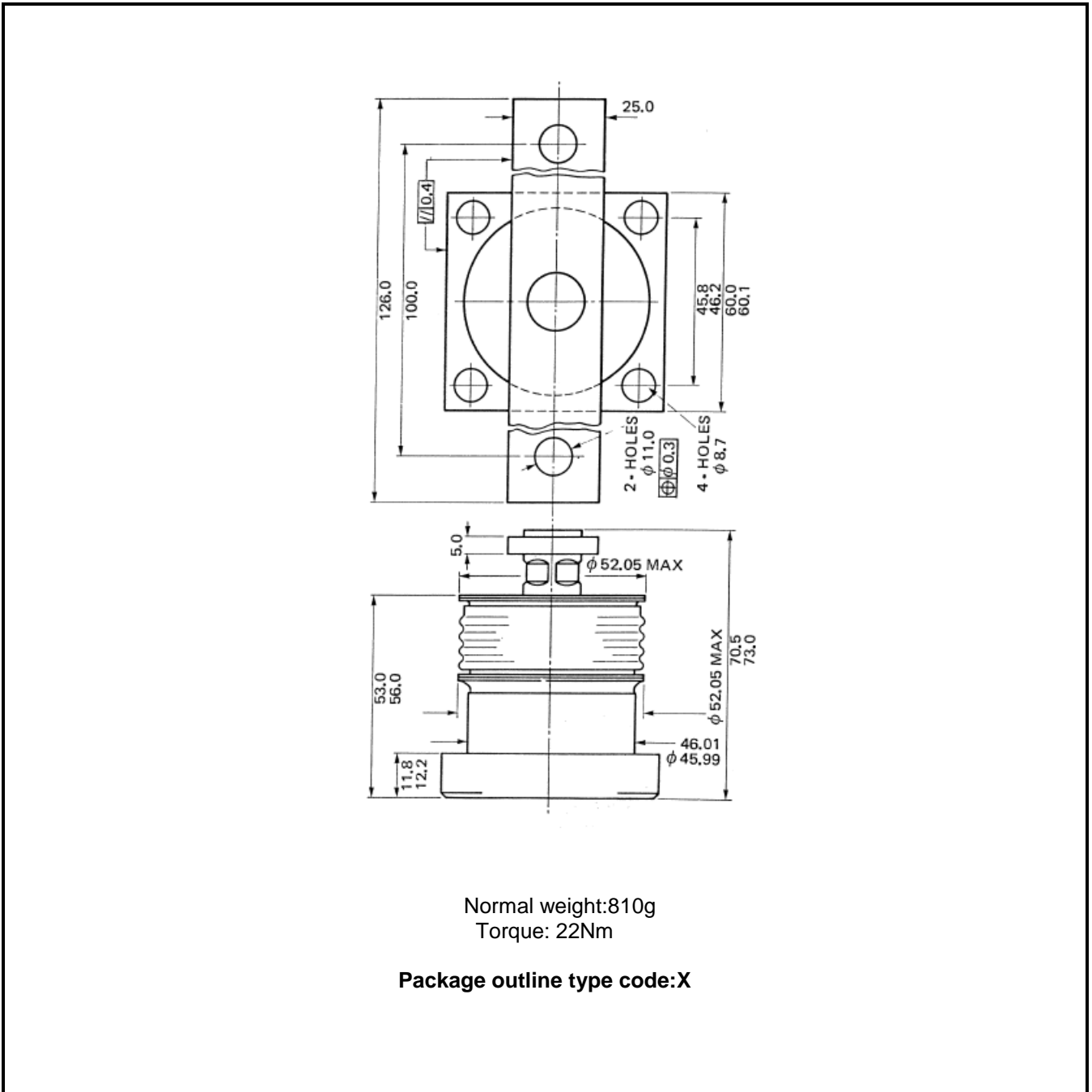


Fig.7 Maximum (limit) transient thermal impedance-junction to heatsink

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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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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We annotate datasheets in the top right hand corner of the front page, to indicate product status if it is not yet fully approved for production. The annotations are as follows:-

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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No Annotation:	The product has been approved for production and unless otherwise notified by Dynex any product ordered will be supplied to the current version of the data sheet prevailing at the time of our order acknowledgement.

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