

### 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

$V_{RRM}$	<b>6000V</b>
$I_{F(AV)}$	<b>412A</b>
$I_{FSM}$	<b>8500A</b>

### 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

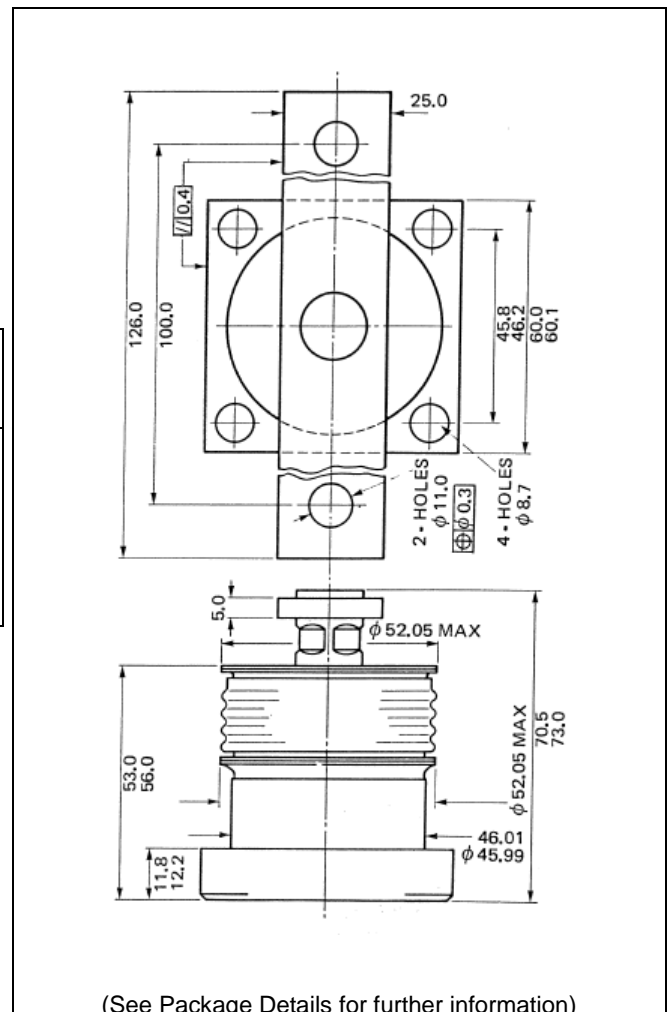


Fig. 1 Package outline

## CURRENT RATINGS

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

Symbol	Parameter	Test Conditions	Max.	Units
<b>Single Side Cooled (Anode side)</b>				
$I_{F(AV)}$	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

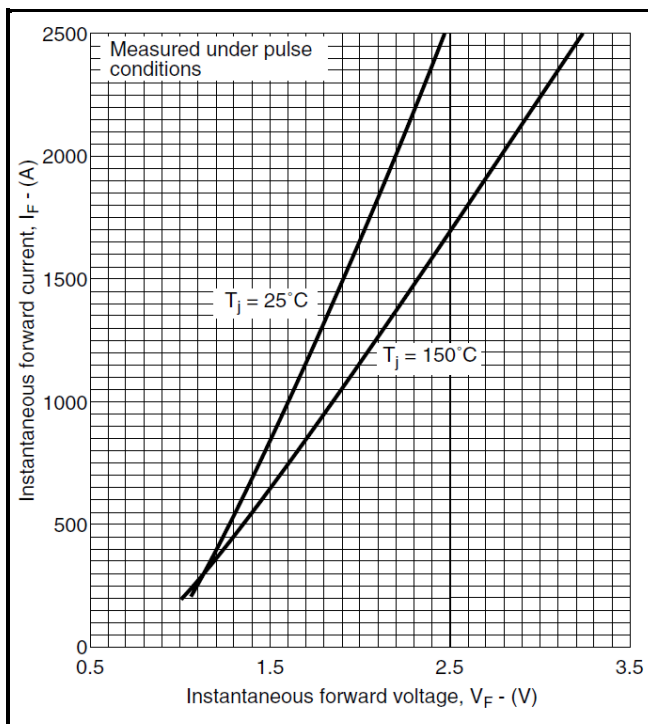
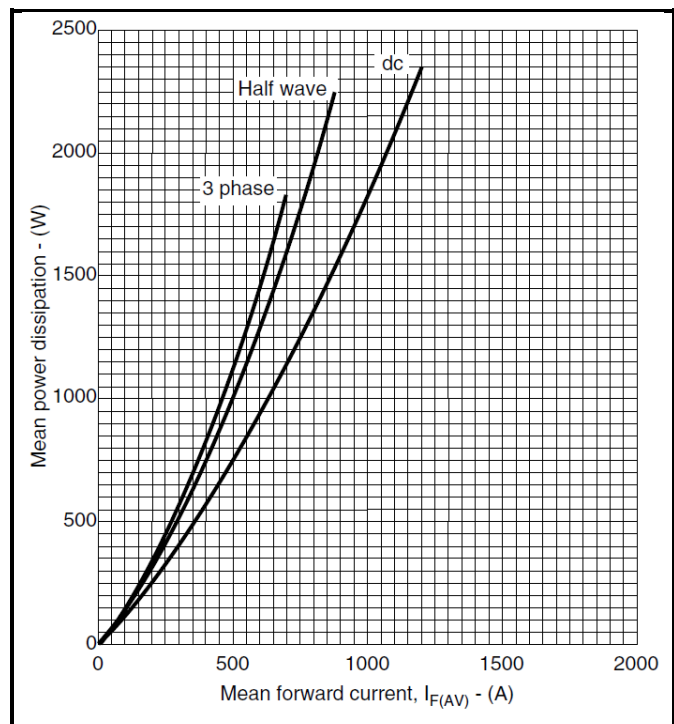
Symbol	Parameter	Test Conditions	Max.	Units
$I_{FSM}$	Surge (non-repetitive) on-state current	10ms half sine, $T_{case} = 150^{\circ}\text{C}$	8.5	kA
$I^2t$	$I^2t$ for fusing	$V_R = 50\% V_{RRM} - \frac{1}{4}$ sine	0.361	$\text{MA}^2\text{s}$

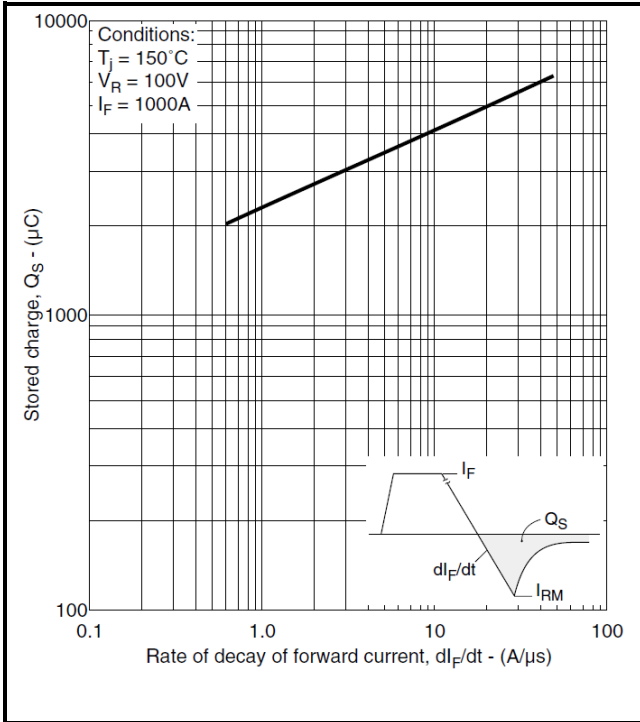
## THERMAL AND MECHANICAL RATINGS

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

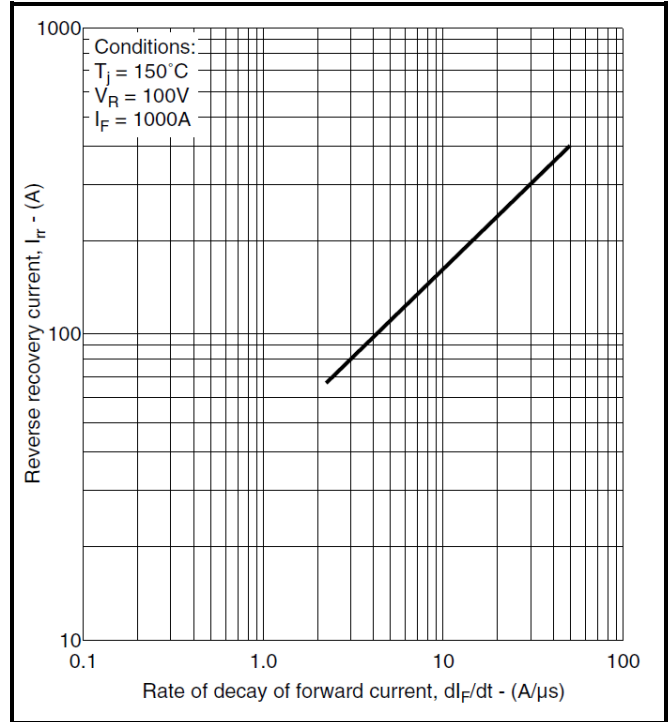
**CHARACTERISTICS**

Symbol	Parameter	Test Conditions	Min.	Max.	Units
$V_{FM}$	Forward voltage	At 1800A peak, $T_{case} = 150^{\circ}C$	-	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	$\mu C$
$I_{rr}$	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	$m\Omega$

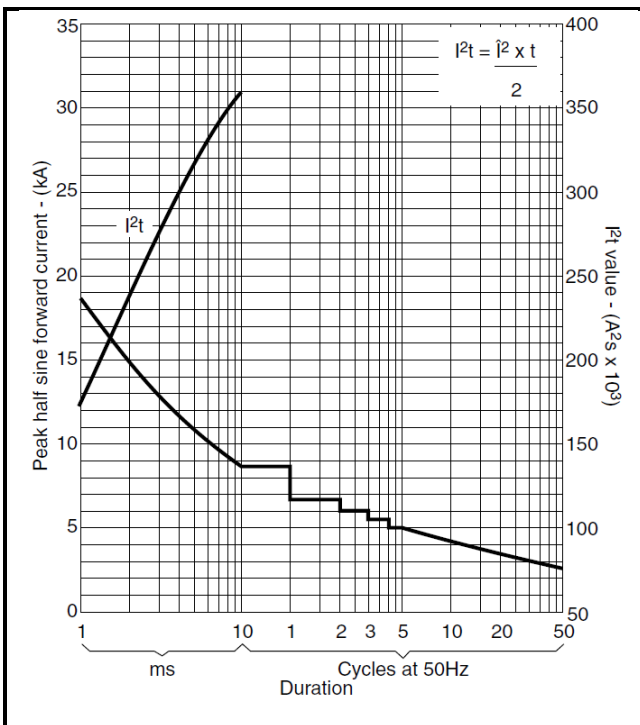
**CURVES**

**Fig.2 Maximum & minimum on-state characteristics**

**Fig.3 Dissipation curves**



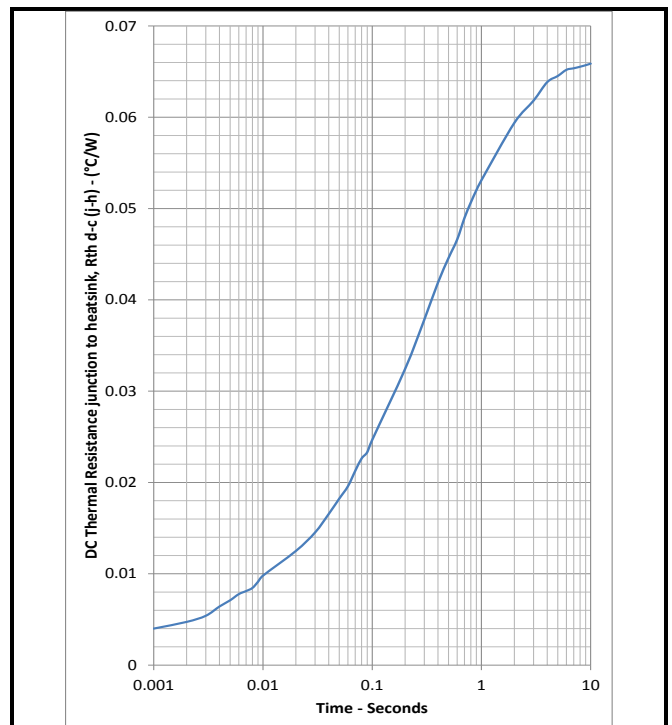
**Fig.4 Total stored charge**



**Fig.5 Maximum reverse recovery current**



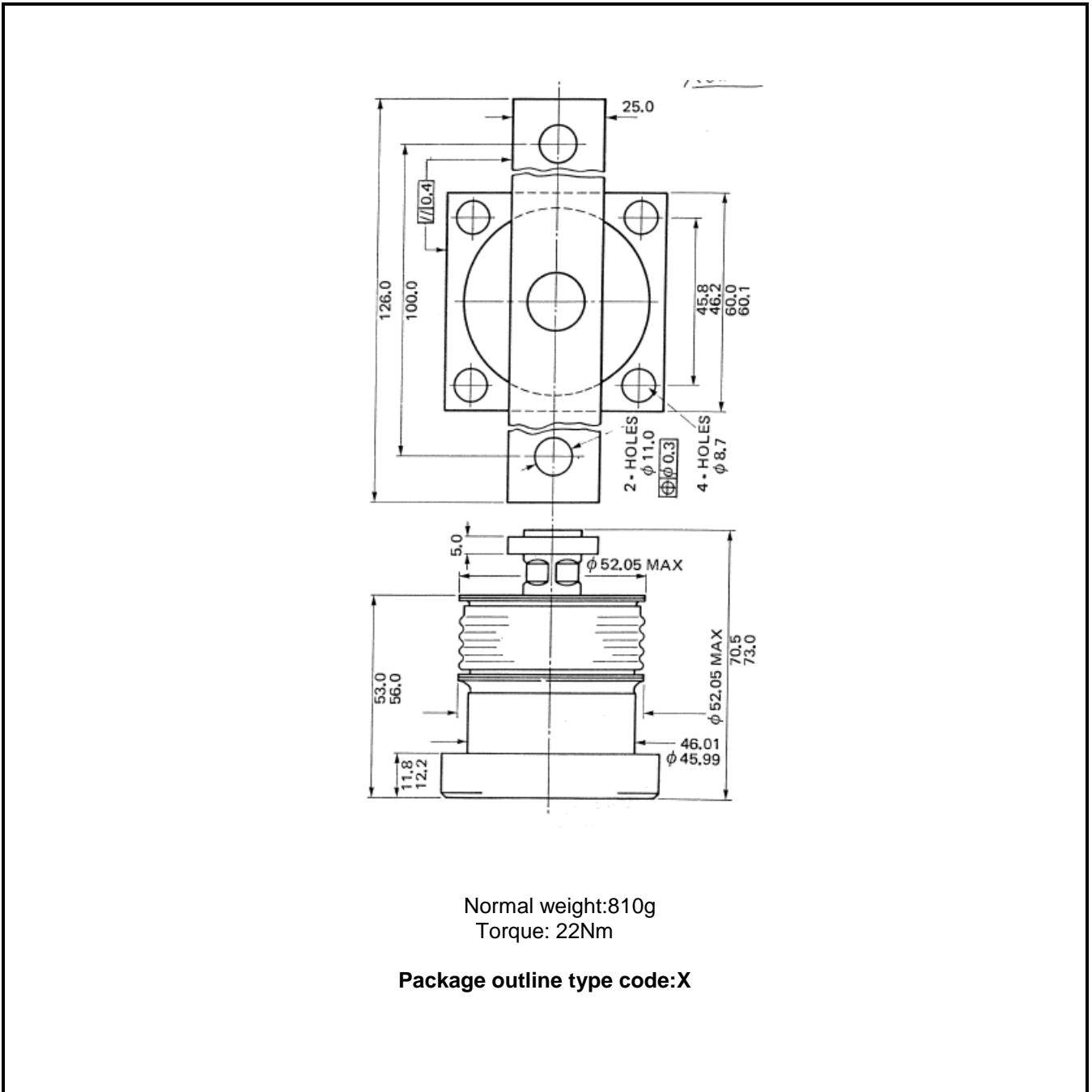
**Fig.5 Surge (Non-Repetitive) Forward current vs time**



**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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**HEADQUARTERS OPERATIONS**

DYNEX SEMICONDUCTOR LIMITED  
Doddington Road, Lincoln, Lincolnshire, LN6 3LF  
United Kingdom.  
Phone: +44 (0) 1522 500500  
Fax: +44 (0) 1522 500550  
Web: <http://www.dynexsemi.com>

**CUSTOMER SERVICE**

Phone: +44 (0) 1522 502753 / 502901  
Fax: +44 (0) 1522 500020  
e-mail: [power\\_solutions@dynexsemi.com](mailto:power_solutions@dynexsemi.com)