S1112SXU60

Flat Base Rectifier Diode

DS6224-1 February 2018 (LN35119)

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

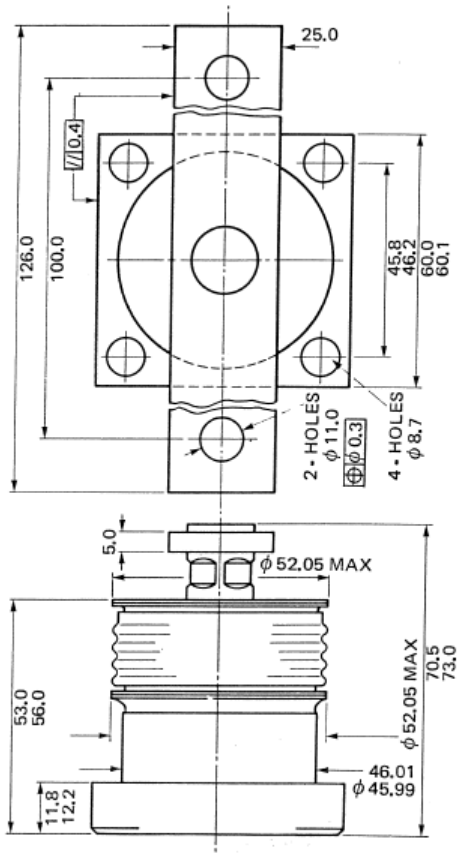
Part and Ordering Number	Repetitive Peak Voltages V_{RRM} V	Conditions
S1112SXU60 to S1112SXU40	6000 to 4000	$V_{RSM} = V_{RRM}+100V$

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^2t	I^2t for fusing	V_R = 50% V_{RRM} - ¼ sine	0.361	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	°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°C	-	2.6	V
I_{RM}	Peak reverse current	At V_{DRM}, T_{case} = 150°C	-	75	mA
Q_S	Total stored charge	I_F = 1000A, dI_{RR}/dt =3A/µs	-	3000	µC
I_{rr}	Peak reverse recovery current	T_{case} = 150°C, V_R =100V	-	85	A
V_{TO}	Threshold voltage	At T_{vj} = 150°C	-	0.97	V
r_T	Slope resistance	At T_{vj} = 150°C	-	0.872	mΩ

CURVES

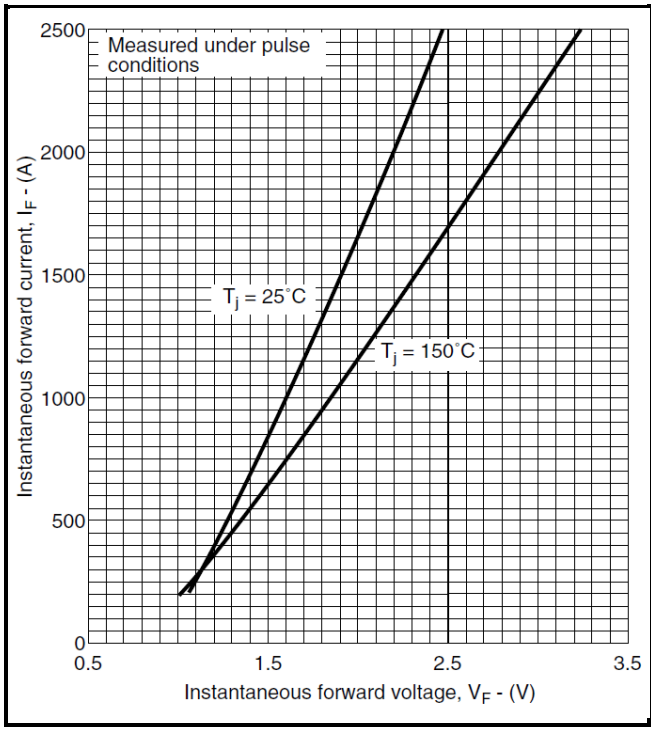


Fig.2 Maximum & minimum on-state characteristics

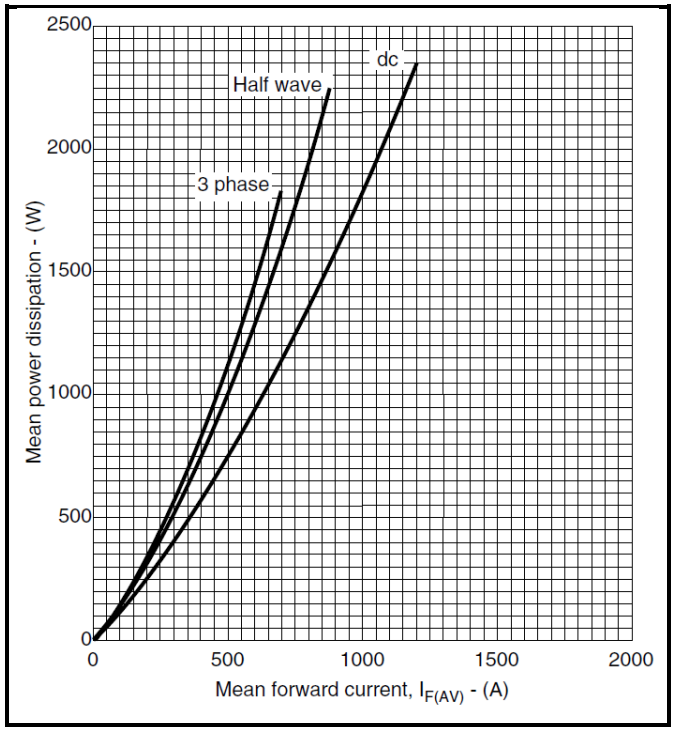


Fig.3 Dissipation curves

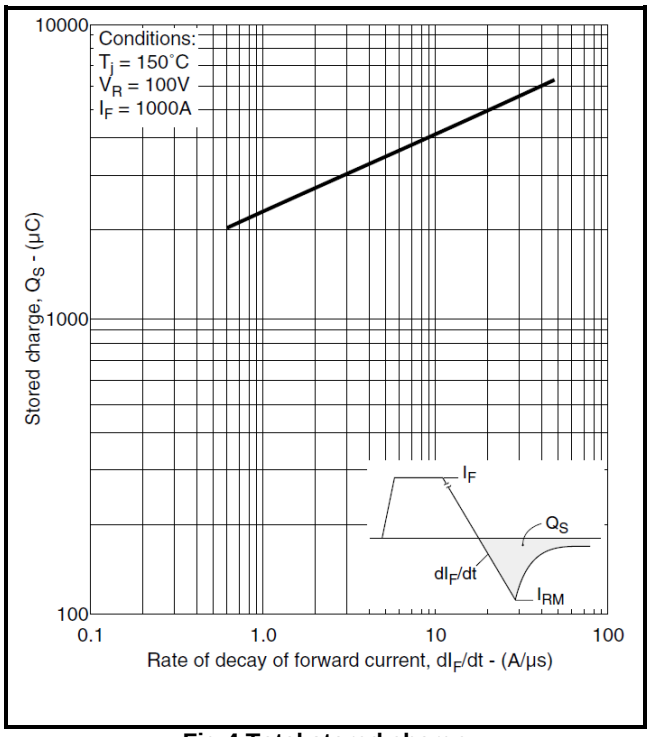


Fig.4 Total stored charge

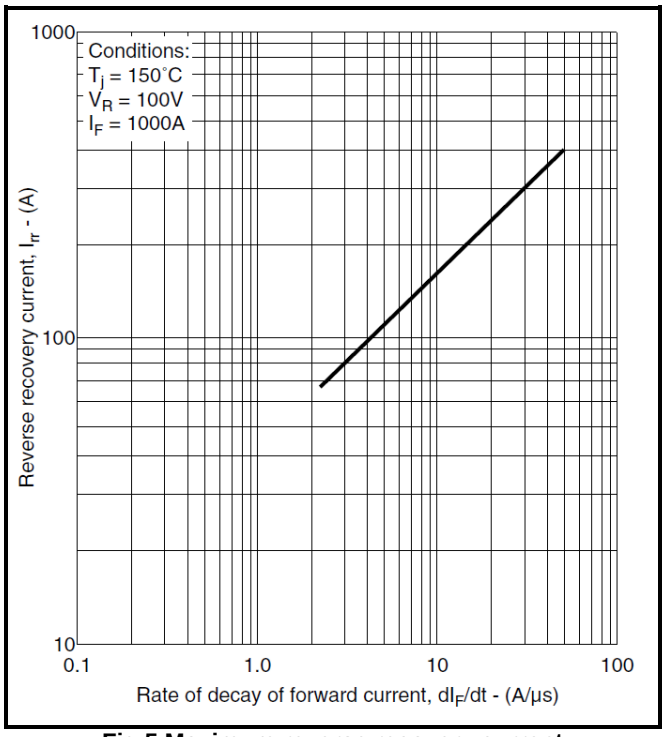


Fig.5 Maximum reverse recovery current

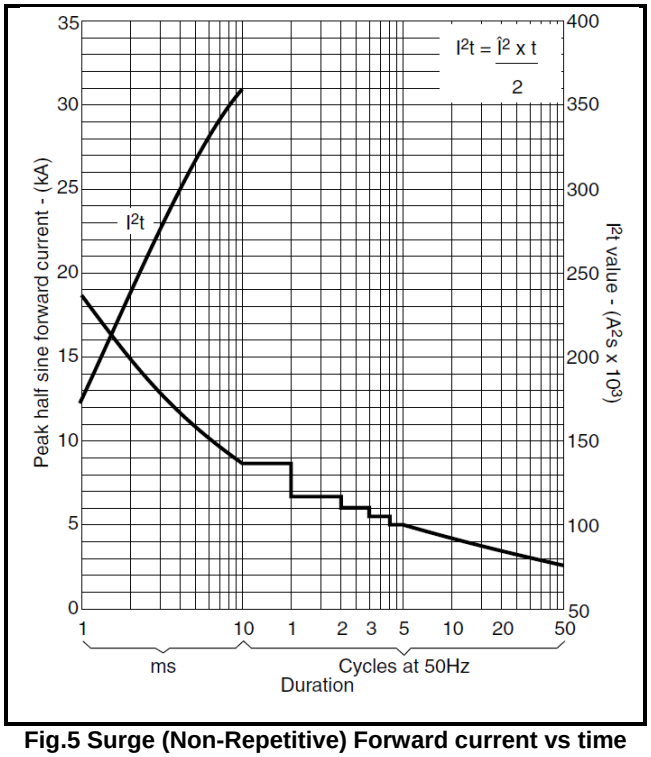


Fig.5 Surge (Non-Repetitive) Forward current vs time

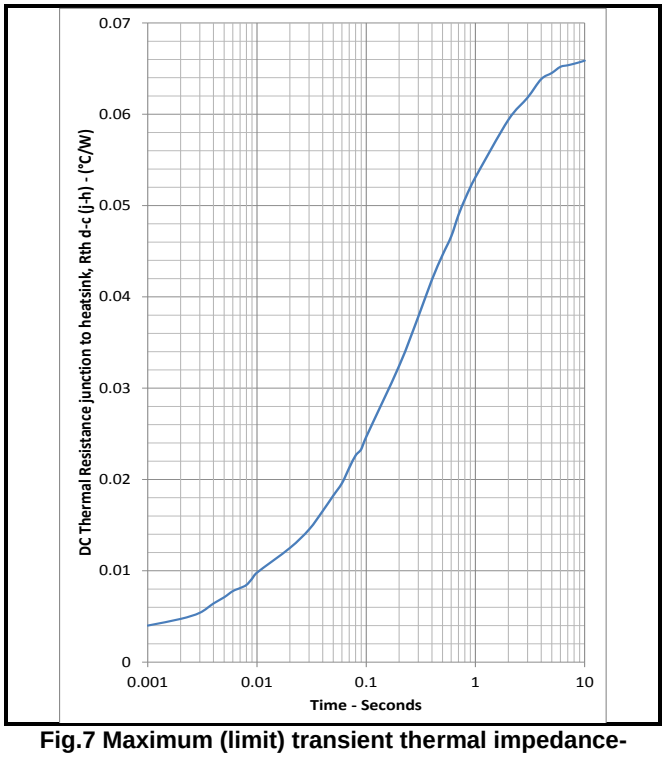
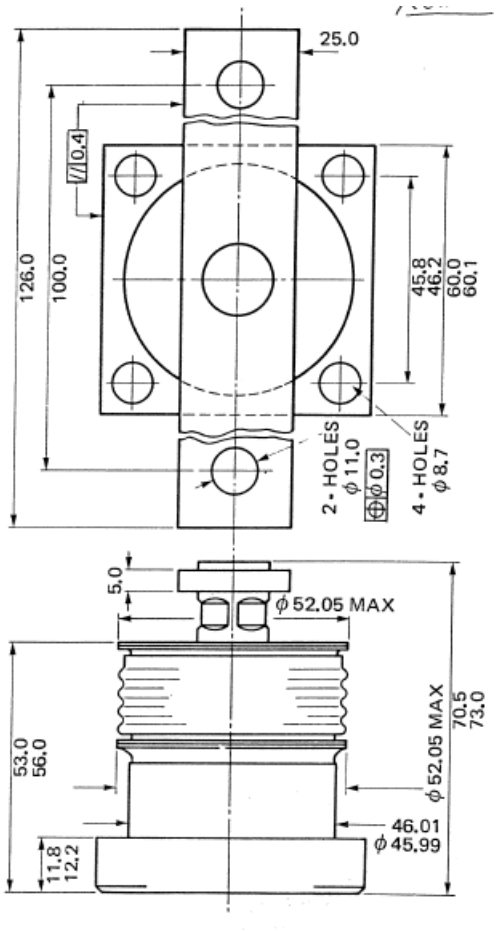


Fig.7 Maximum (limit) transient thermal impedance-junction to heatsink

PACKAGE DETAILS

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



Normal weight:810g
Torque: 22Nm

Package outline type code:X

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

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