# S1104SXU30

## Flat Base Rectifier Diode

DS6220-1 January 2018 (LN35090)

## 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

| | |
|---|---|
| $V_{RRM}$ | **3000V** |
| $I_{F(AV)}$ | **860A** |
| $I_{FSM}$ | **16000A** |

## VOLTAGE RATINGS

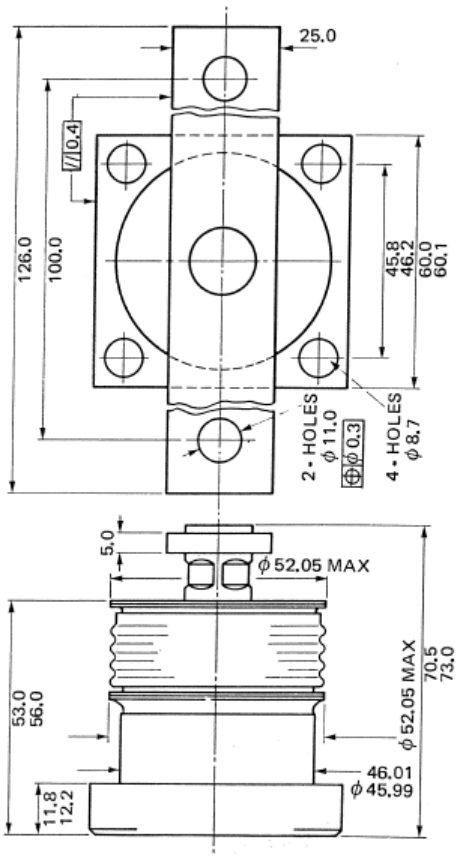
| Part and Ordering Number | Repetitive Peak Voltages $V_{RRM}$ V | Conditions |
|---|---|---|
| S1104SXU30 to S1104SXU10 | 3000 to 1000 | $V_{RSM} = V_{RRM}+100V$ |

## ORDERING INFORMATION

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

For example:

**S1104SXU28** for a 2800V anode to base device
**S1104SXD28** for a 2800V 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 | 860 | A |
| $I_{F(RMS)}$ | RMS value | - | 1350 | A |
| $I_F$ | Continuous (direct) on-state current | - | 1150 | A |

## SURGE RATINGS

| Symbol | Parameter | Test Conditions | Max. | Units |
|---|---|---|---|---|
| $I_{FSM}$ | Surge (non-repetitive) on-state current | 10ms half sine, $T_{case}$ = 175°C | 16 | kA |
| $I^2t$ | $I^2t$ for fusing | $V_R$ = 50% $V_{RRM}$ - ¼ sine | 1.28 | $MA^2s$ |

## 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) | - | 175 | °C |
| | | Reverse (blocking) | - | 175 | °C |
| $T_{stg}$ | Storage temperature range | | -55 | 175 | °C |
| Torque | Clamping torque | | 0 | 22 | Nm |

## CHARACTERISTICS

| Symbol | Parameter | Test Conditions | Min. | Max. | Units |
|---|---|---|---|---|---|
| $V_{FM}$ | Forward voltage | At 1800A peak, $T_{case}$ = 175°C | - | 1.225 | V |
| $I_{RM}$ | Peak reverse current | At $V_{DRM}$, $T_{case}$ = 1X0°C | - | 50 | mA |
| $Q_S$ | Total stored charge | $I_F$ = 1000A, $dI_{RR}/dt$ =3A/µs | - | 1600 | µC |
| $I_{rr}$ | Peak reverse recovery current | $T_{case}$ = 175°C, $V_R$ =100V | - | 85 | A |
| $V_{TO}$ | Threshold voltage | At $T_{vj}$ = 175°C | - | 0.67 | V |
| $r_T$ | Slope resistance | At $T_{vj}$ = 175°C | - | 0.31 | mΩ |

## CURVES

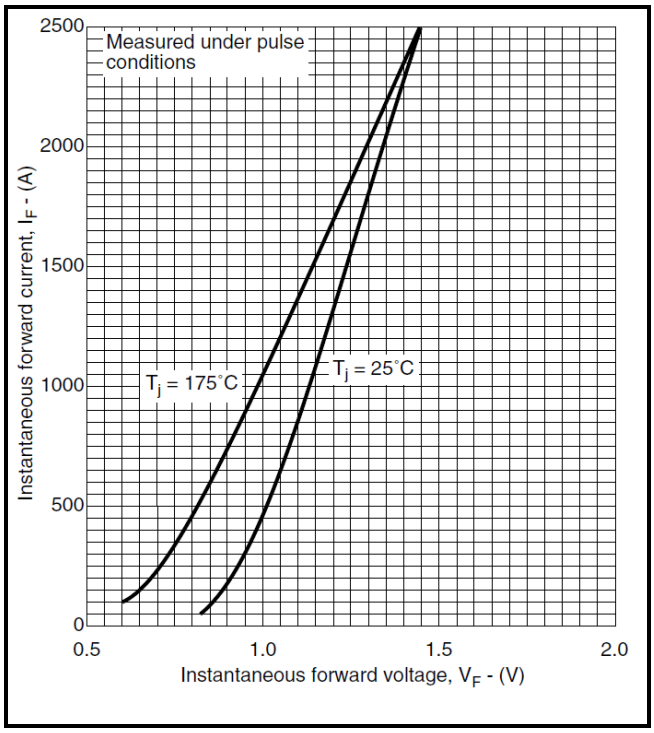



**Fig.2 Maximum & minimum on-state characteristics**

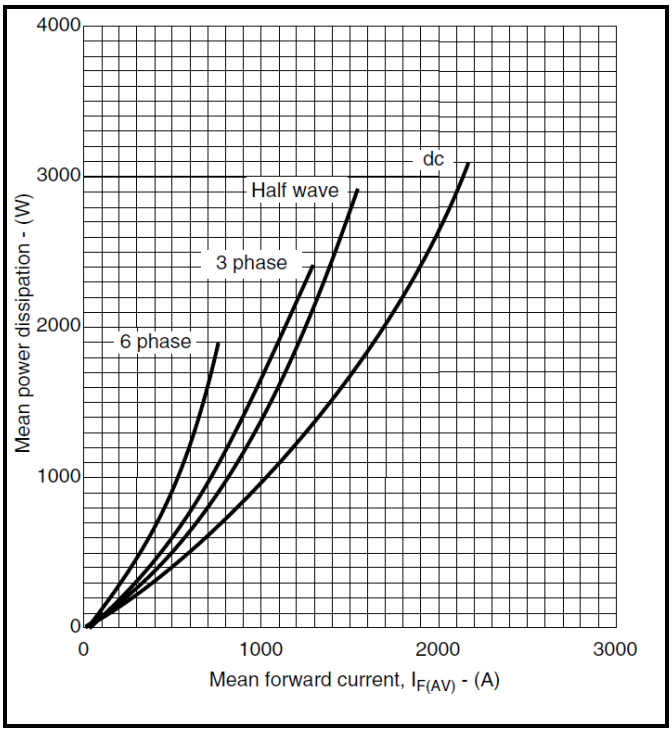



**Fig.3 Dissipation curves**

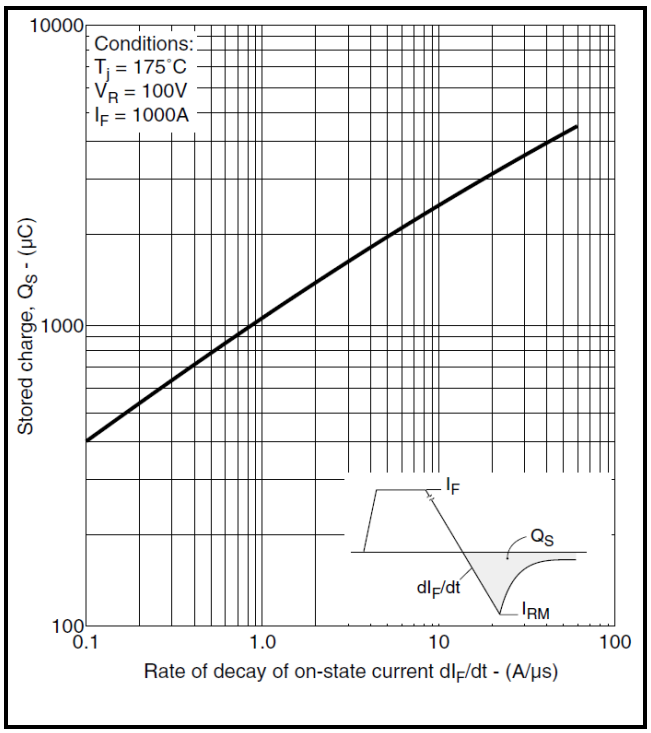



**Fig.4 Total stored charge**

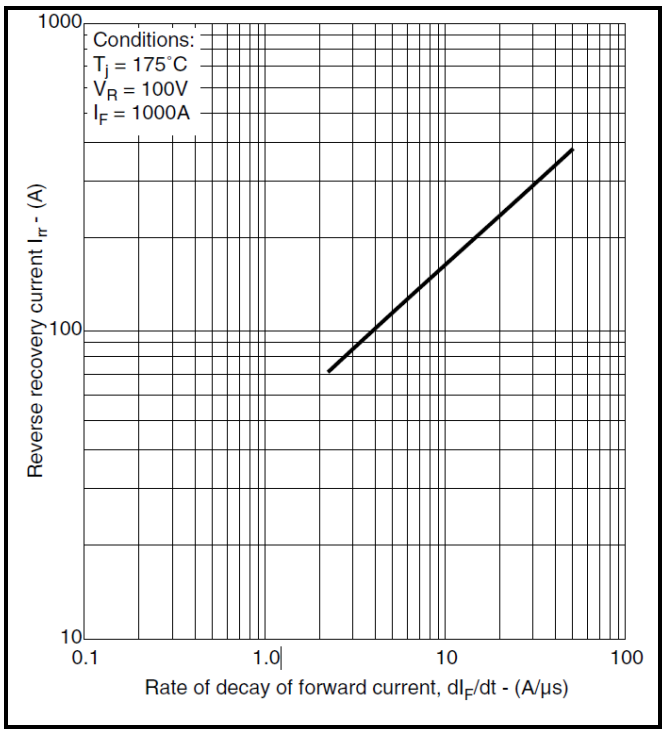



**Fig.5 Maximum reverse recovery current**

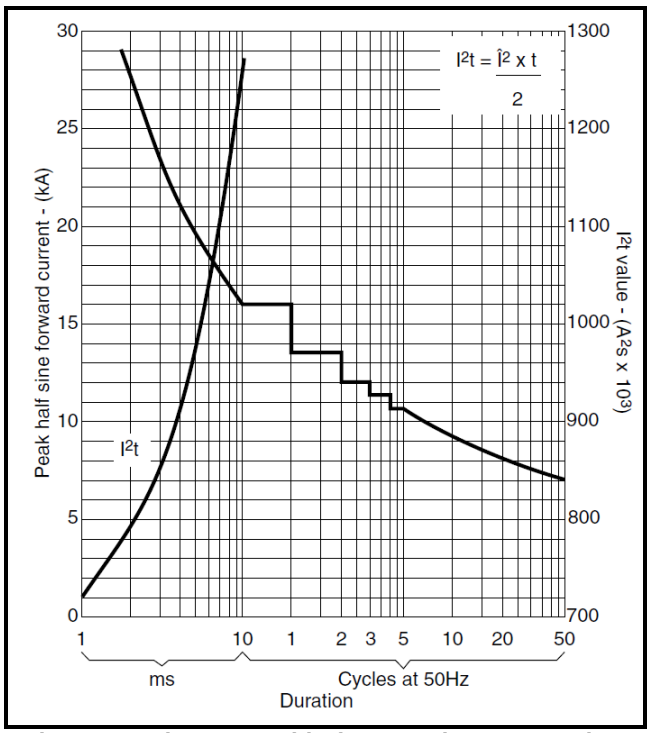



**Fig.5 Surge (Non-Repetitive) Forward current vs time**

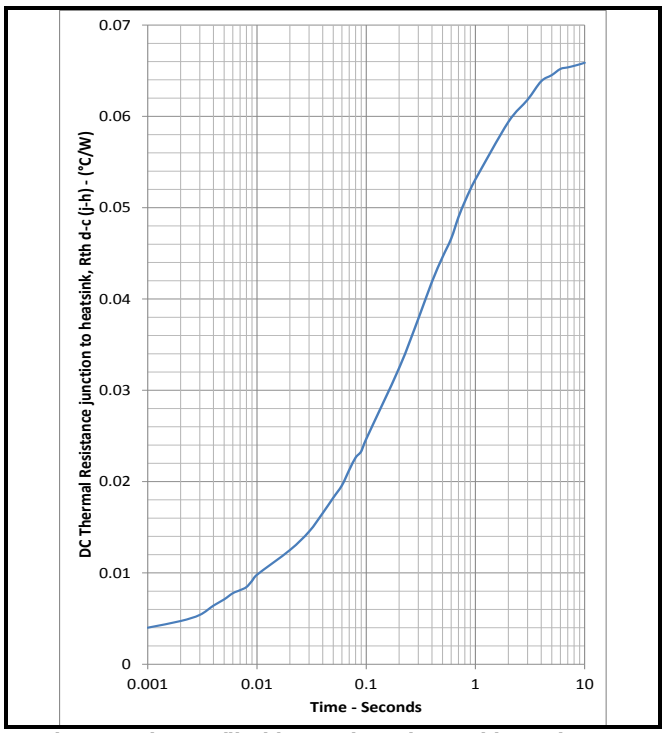
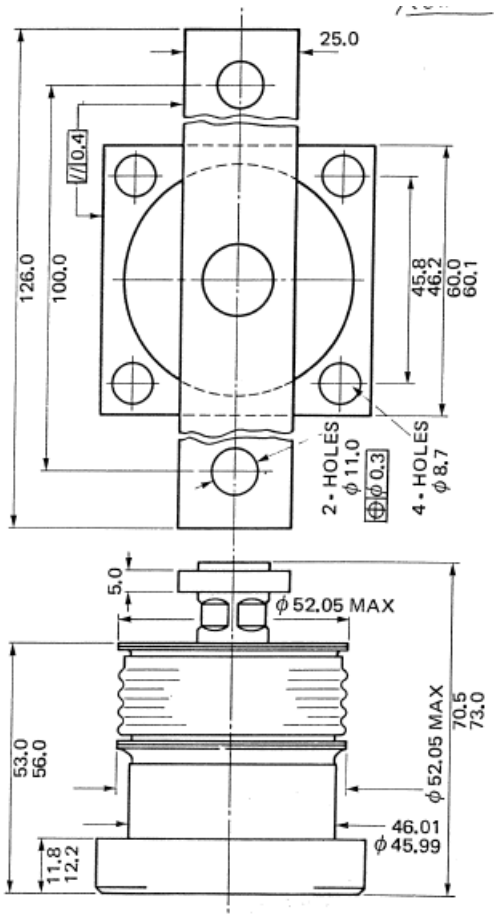



**Fig.7 Maximum (limit) transient thermal impedance-junction to heatsink**

## 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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|---|---|
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