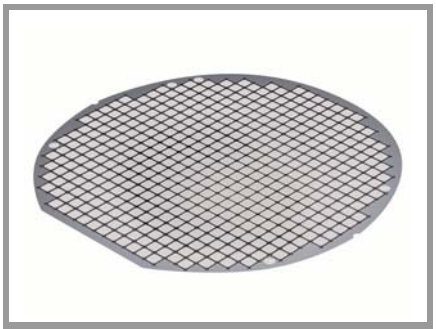
# SKR297XP16B1T



## DIODE

$I_{F(DC)}$ = 840 A [1)]
$V_{RRM}$ = 1600 V
Size: 16.3 x 18.2 mm²

**SKR297XP16B1T**

### Features

- New Power Enhancing Passivation technology
- $T_{jmax}$ = 175°C
- High current density
- Enhanced environmental robustness

### Typical Applications*

- uncontrolled rectifier bridges

### Footnotes

[1)] Current rating is dependent on thermal characteristics ($R_{th}$) of module assembly. Refer to Fig. 1 for further information




SKR

**Absolute Maximum Ratings**

| Symbol | Conditions | | Values | Unit |
|---|---|---|---|---|
| $V_{RRM}$ | $T_j$ = 25 °C, $I_R$ = 0.4 mA | | 1600 | V |
| $I_{F(AV)}$ | $T_c$ = 85 °C, $T_j$ = 175 °C, sin 180°, $R_{th(j-c)}$ = 0.08 K/W | | 640 | A |
| $I_{FSM}$ | 10 ms sin 180° | $T_j$ = 25 °C | 6600 | A |
| | | $T_j$ = 150 °C | 5100 | A |
| $i^2t$ | $T_j$ = 150 °C, 10 ms, sin 180° | | 130050 | $A^2s$ |
| $T_{jmax}$ | | | 175 | °C |

**Electrical Characteristics**

| Symbol | Conditions | | min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| $I_R$ | $T_j$ = 25 °C, $V_{RRM}$ | | | | 0.4 | mA |
| | $T_j$ = 150 °C, $V_{RRM}$ | | | | 3.2 | mA |
| $V_F$ | $T_j$ = 25 °C, $I_F$ = 310 A | | | 0.97 | 1.20 | V |
| | $T_j$ = 150 °C, $I_F$ = 310 A | | | 0.84 | 1.07 | V |
| | $T_j$ = 175 °C, $I_F$ = 310 A | | | 0.82 | 1.05 | V |
| $t_{rr}$ | $T_j$ = 25 °C, 310 A, 100 V, 67 A/µs | | | 6.1 | | µs |
| $t_{rr}$ | $T_j$ = 150 °C, 310 A, 100 V, 67 A/µs | | | 7.2 | | µs |
| $Q_{rr}$ | $T_j$ = 25 °C, 310 A, 100 V, 67 A/µs | | | 990 | | µC |
| $Q_{rr}$ | $T_j$ = 150 °C, 310 A, 100 V, 67 A/µs | | | 1240 | | µC |

**For power loss calculation only**

| Symbol | Conditions | | min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| $V_{(TO)}$ | Approximation for: $I_{F1}$ = 310 A $I_{F2}$ = 930 A | $T_j$ = 150 °C | | 0.73 | 0.92 | V |
| $V_{(TO)}$ | | $T_j$ = 175 °C | | 0.69 | 0.88 | V |
| $r_T$ | | $T_j$ = 150 °C | | 0.37 | 0.50 | mΩ |
| $r_T$ | | $T_j$ = 175 °C | | 0.41 | 0.55 | mΩ |

**Thermal Characteristics**

| Symbol | Conditions | min. | typ. | max. | Unit |
|---|---|---|---|---|---|
| $T_j$ | | -40 | | 175 | °C |
| $T_{stg}$ | | -40 | | 175 | °C |
| $T_{solder}$ | 10 min. | | | 250 | °C |
| $T_{solder}$ | 5 min. | | | 320 | °C |

**Mechanical Characteristics**

| Symbol | Conditions | Values | Unit |
|---|---|---|---|
| **Parameter** | | | |
| Raster size | | 16.3 x 18.2 | mm² |
| Area total | | 296.66 | mm² |
| Anode | | bondable (Al) | |
| Cathode | | solderable (Ag/Ni) | |
| Wire bond | | Al, diameter ≤ 500 µm | |
| Package | | tray | |
| Chips / Package | 1 tray pack (6 trays) | 120 | pcs |

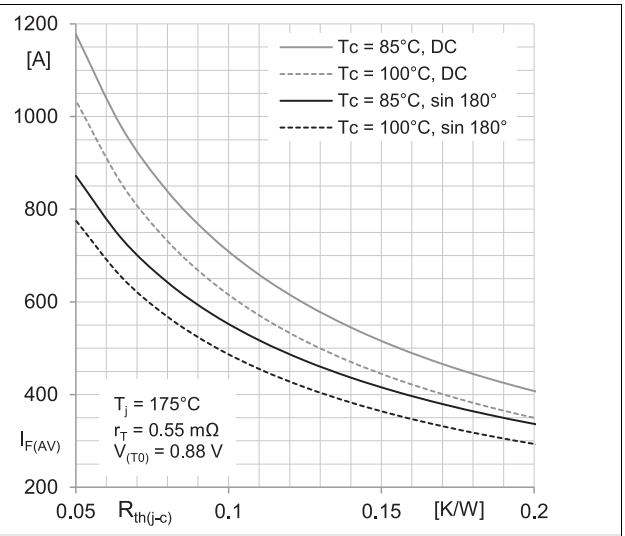



Fig. 1: Rated current vs. thermal resistance

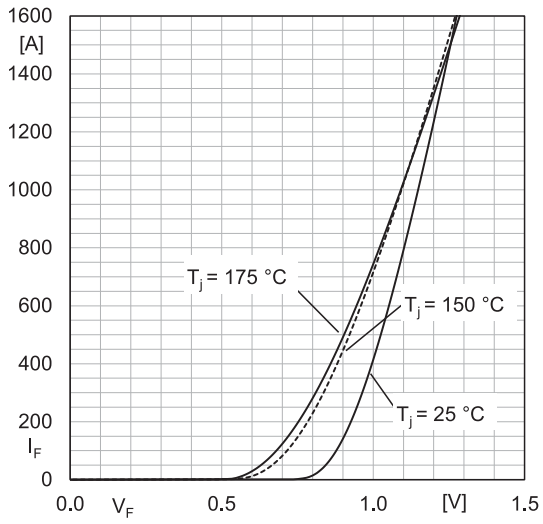
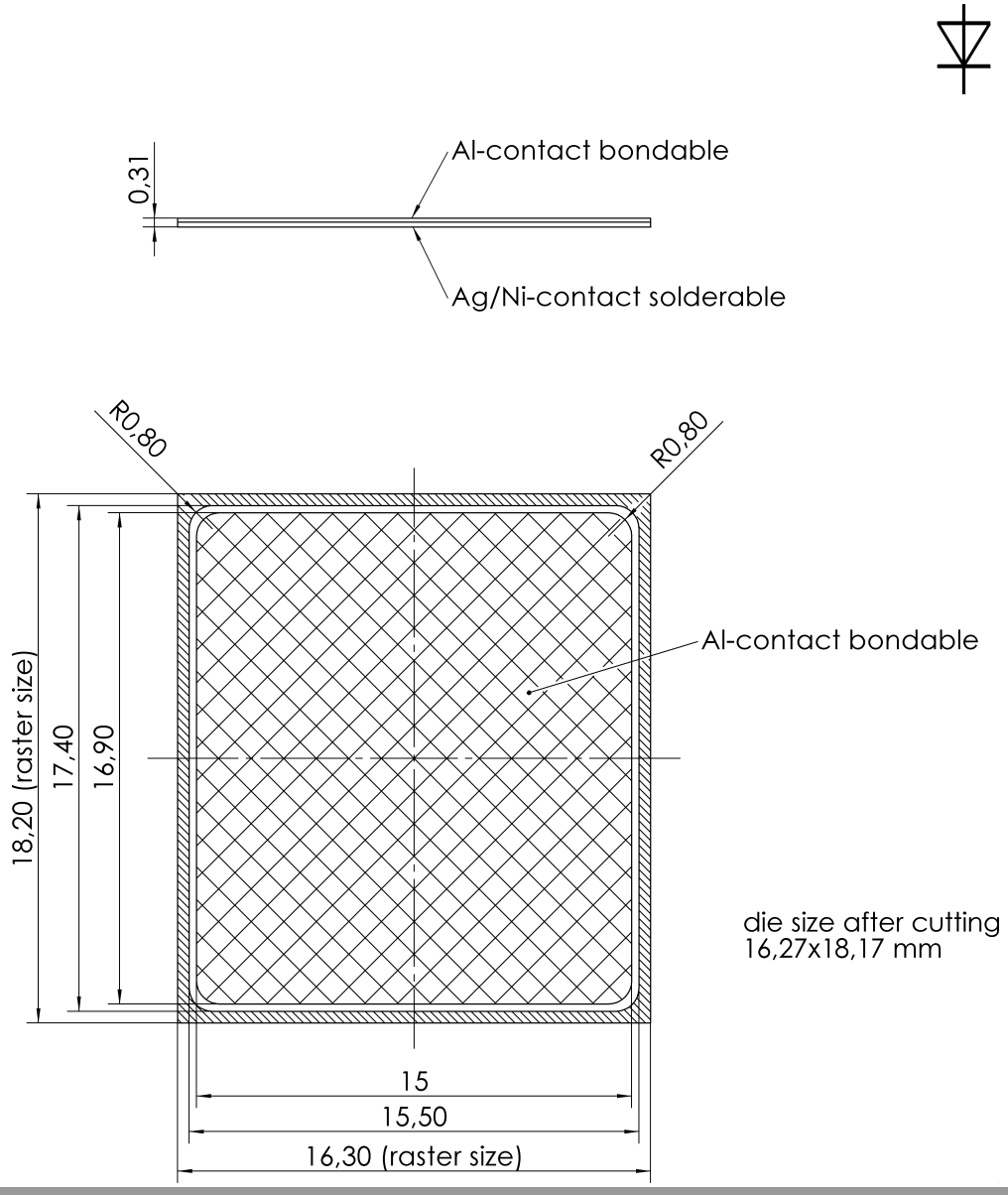



Fig. 2: Typical forward characteristic of diode

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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

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