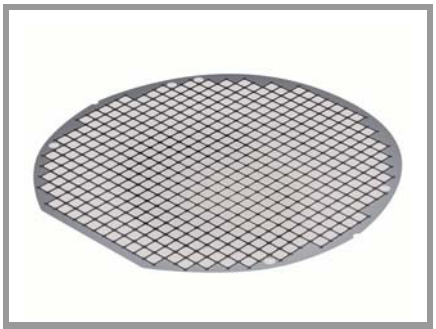
SKR106XP16B1F



DIODE

$I_{F(DC)}$ = 290 A [1)]
V_{RRM} = 1600 V
Size: 10.3 x 10.3 mm²

SKR106XP16B1F

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 = 0.1 mA		1600	V
$I_{F(AV)}$	T_c = 85 °C, T_j = 175 °C, sin 180°, $R_{th(j-c)}$ = 0.23 K/W		220	A
I_{FSM}	10 ms sin 180°	T_j = 25 °C	2000	A
		T_j = 150 °C	1650	A
i^2t	T_j = 150 °C, 10 ms, sin 180°		13600	A^2s
T_{jmax}			175	°C

Electrical Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
I_R	T_j = 25 °C, V_{RRM}				0.1	mA
	T_j = 150 °C, V_{RRM}				1.7	mA
V_F	T_j = 25 °C, I_F = 103 A			0.97	1.20	V
	T_j = 150 °C, I_F = 103 A			0.84	1.07	V
	T_j = 175 °C, I_F = 103 A			0.82	1.05	V
t_{rr}	T_j = 25 °C, 103 A, 100 V, 22 A/µs			6.4		µs
t_{rr}	T_j = 150 °C, 103 A, 100 V, 22 A/µs			7		µs
Q_{rr}	T_j = 25 °C, 103 A, 100 V, 22 A/µs			333		µC
Q_{rr}	T_j = 150 °C, 103 A, 100 V, 22 A/µs			423		µC

For power loss calculation only

Symbol	Conditions		min.	typ.	max.	Unit
$V_{(TO)}$	Approximation for: I_{F1} = 103 A I_{F2} = 309 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		1.11	1.50	mΩ
r_T		T_j = 175 °C		1.22	1.65	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		10.3 x 10.3	mm²
Area total		106.09	mm²
Anode		bondable (Al)	
Cathode		solderable (Ag/Ni)	
Wire bond		Al, diameter ≤ 500 µm	
Package		150 mm wafer on frame	
Chips / Package		128	pcs

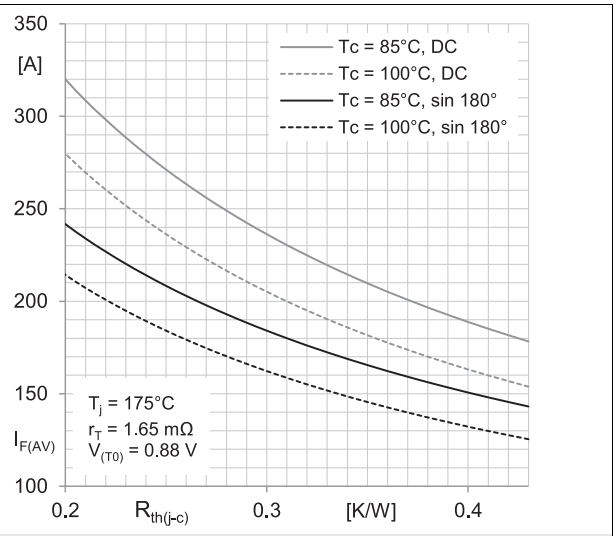


Fig. 1: Rated current vs. thermal resistance

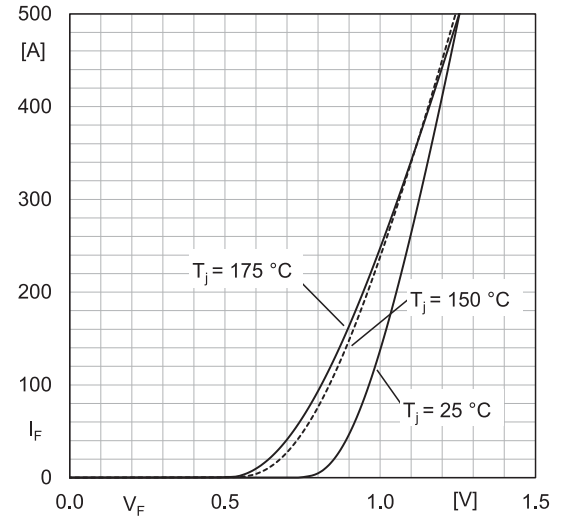
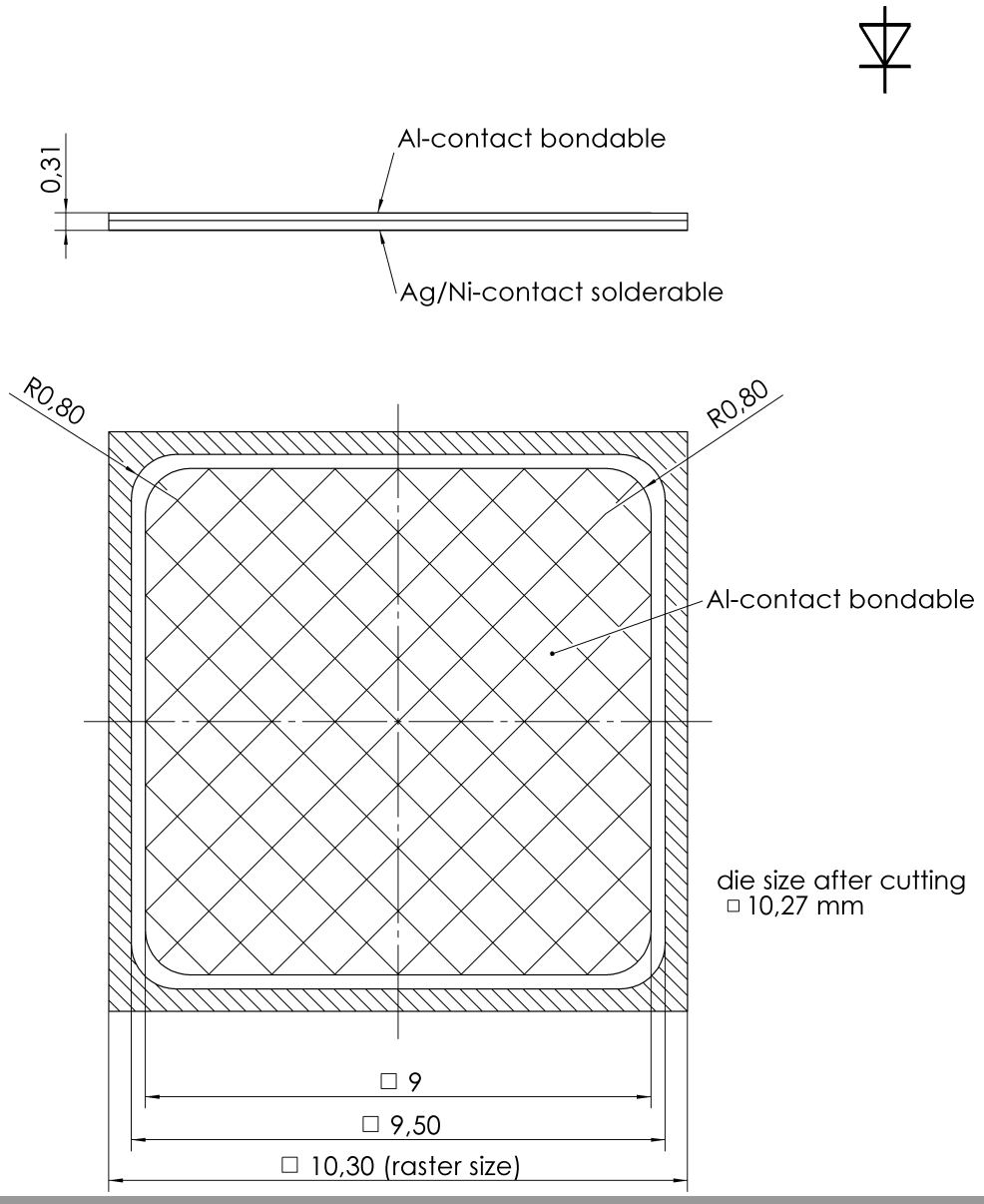


Fig. 2: Typical forward characteristic of diode



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

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