SKCD 81 C 170 I HD



CAL-DIODE

I_F = 150 A [1)]
V_{RRM} = 1700 V
Size: 9 x 9 mm²

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Features

- high current density
- easy paralleling due to a small forward voltage spread
- positive temperature coefficient
- very soft recovery behavior
- small switching losses
- high ruggedness
- compatible to thick wire bonding
- compatible to standard solder processes

Typical Applications*

- freewheeling diode for IGBT
- particularly suitable for frequencies < 8 kHz

Footnotes

[1)] Nominal IGBT I_C rating, verified by design and characterization



SKCD

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
V_{RRM}	T_j = 25 °C, I_R = 0.1 mA		1700	V
I_{FSM}	10 ms sin 180°	T_j = 25 °C	1370	A
		T_j = 150 °C	1070	A
i^2t	T_j = 150 °C, t_p = 10 ms, sin 180°		5725	A^2s
T_{jmax}			150	°C

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
$I_{F(AV)}$	T_c = 80 °C, T_j = 150 °C, F_i=PI/2, $R_{th(j-c)}$ = 0.40 K/W, Semitrans Assembly		85		A
I_R	T_j = 25 °C, V_{RRM} = 1700 V			0.1	mA
	T_j = 125 °C, V_{RRM} = 1700 V			7.30	mA
V_F	T_j = 25 °C, I_F = 150 A		1.73	2.02	V
	T_j = 125 °C, I_F = 150 A		1.78	2.05	V
$V_{(TO)}$	T_j = 125 °C		1.03		V
r_T	T_j = 125 °C		5.0		mΩ

Dynamic Characteristics

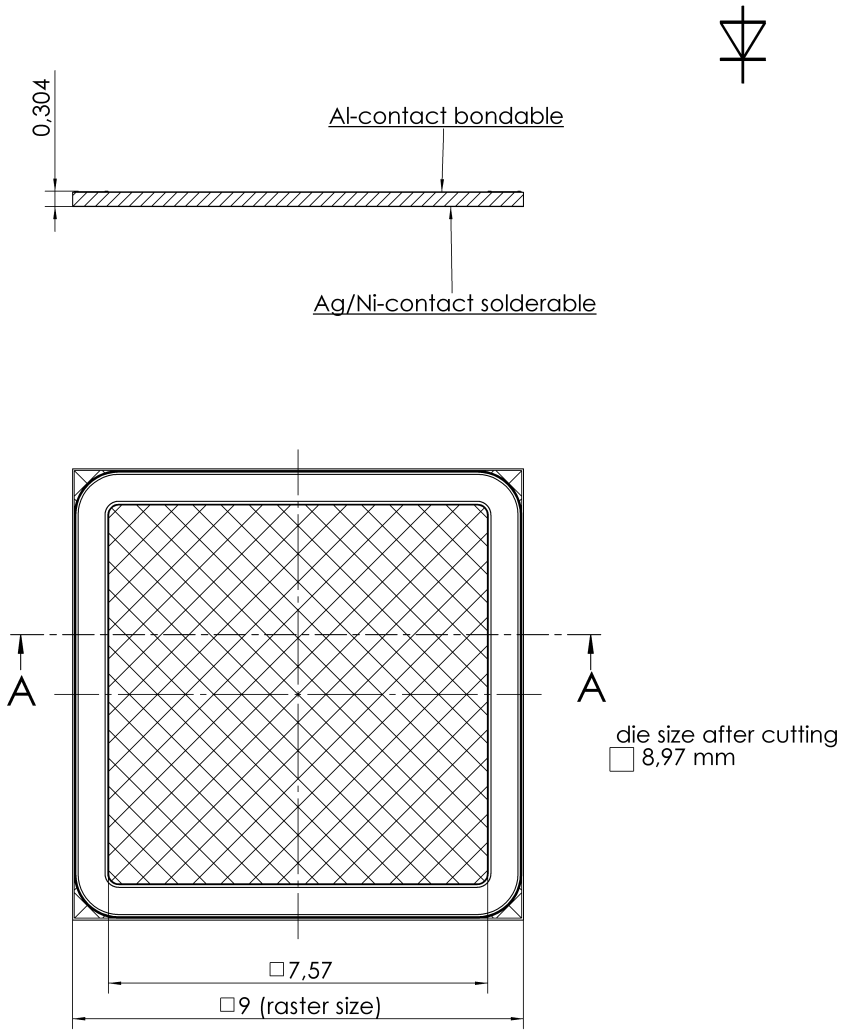
Symbol	Conditions	min.	typ.	max.	Unit
E_{rr}	T_j = 25 °C, 150 A, 1200 V, 3000 A/µs		22		mJ
E_{rr}	T_j = 125 °C, 150 A, 1200 V, 3000 A/µs		35		mJ
Q_{rr}	T_j = 25 °C, 150 A, 1200 V, 3000 A/µs		34		µC
Q_{rr}	T_j = 125 °C, 150 A, 1200 V, 3000 A/µs		53.5		µC
I_{rrm}	T_j = 25 °C, 150 A, 1200 V, 3000 A/µs		120		A
I_{rrm}	T_j = 125 °C, 150 A, 1200 V, 3000 A/µs		142		A

Thermal Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
T_j		-40		150	°C
T_{stg}		-40		150	°C
T_{solder}	10 min.			250	°C
T_{solder}	5 min.			320	°C

Mechanical Characteristics

Symbol	Conditions	Values	Unit
Raster size		9 x 9	mm^2
Area total		81	mm^2
Anode		bondable (Al)	
Cathode		solderable (Ag/Ni)	
Wire bond		Al, diameter ≤ 500 µm	
Package		150 mm wafer on frame	
Chips / Package		179	pcs



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

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.