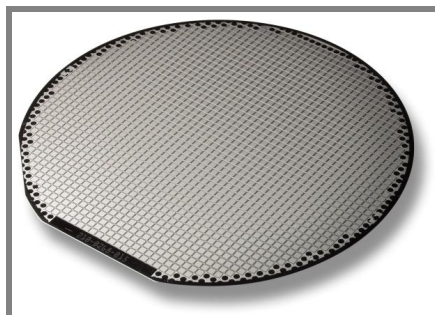


SKCD 81 C 170 I HD



SEMICELL CAL-DIODE

SKCD 81 C 170 I HD

$I_F = 150 \text{ A}$

$V_{RRM} = 1700 \text{ V}$

Size: 9 mm X 9 mm

Package: wafer frame

Features

- 600V, 1200V and 1700V
- optimized for 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 all standard solder processes

Typical Applications

- freewheeling diode for IGBT
- optimal at frequencies < 8 kHz

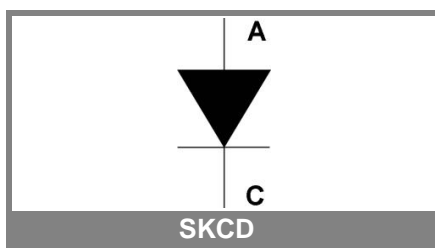
Absolute Maximum Ratings			
Symbol	Conditions	Values	Units
V_{RRM}	$T_{vj} = 25 \text{ }^\circ\text{C}$, $I_R = 0,1 \text{ mA}$	1700	V
$I_{F(AV)}$	$T_h = 80 \text{ }^\circ\text{C}$, $T_{vjmax} = 150 \text{ }^\circ\text{C}$	85	A
I_{FSM}	$T_{vj} = 25 \text{ }^\circ\text{C}$, 10 ms, half sine wave	1370	A
	$T_{vjmax} = 150 \text{ }^\circ\text{C}$, 10 ms, half sine wave	1070	A
T_{vjmax}		+ 150	$^\circ\text{C}$

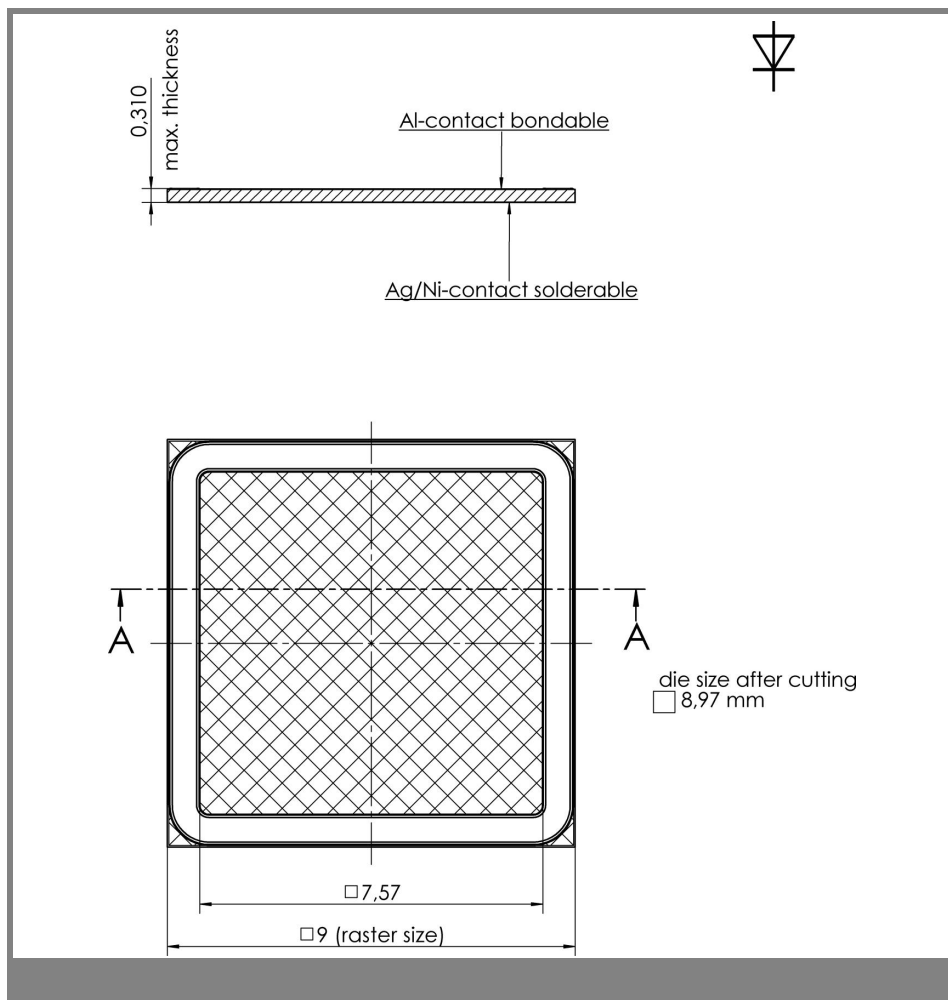
Electrical Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
I^2t	T_{vjmax} , 10 ms, half sine wave			5720	A^2s
I_R	$T_{vj} = 25 \text{ }^\circ\text{C}$, V_{RRM}			0,1	mA
	$T_{vj} = 125 \text{ }^\circ\text{C}$, V_{RRM}				mA
V_F	$T_{vj} = 25 \text{ }^\circ\text{C}$, $I_F = 150 \text{ A}$		1,73	2,02	V
	$T_{vj} = 125 \text{ }^\circ\text{C}$, $I_F = 150 \text{ A}$		1,78	2,05	V
$V_{(TO)}$	$T_{vj} = 125 \text{ }^\circ\text{C}$		1,03		V
r_T	$T_{vj} = 125 \text{ }^\circ\text{C}$		5		$\text{m}\Omega$

Dynamic Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	$T_{vj} = 25 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs				ns
	$T_{vj} = 125 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs				ns
Q_{rr}	$T_{vj} = 25 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs		25		μC
	$T_{vj} = 125 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs		44		μC
I_{rrm}	$T_{vj} = 25 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs		83		A
	$T_{vj} = 125 \text{ }^\circ\text{C}$, 150 A, 1200 V, 1125 A/ μs		102		A

Thermal Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
T_{vj}		- 40		+ 150	$^\circ\text{C}$
T_{stg}		- 40		+ 150	$^\circ\text{C}$
T_{solder}	10 min			+ 250	$^\circ\text{C}$
T_{solder}	5 min			+ 320	$^\circ\text{C}$
$R_{th(j-h)}$	soldered on 0,38 mm DCB, reference point on copper heatsink close to the chip.		0,4		K / W

Mechanical Characteristics		
Parameter		Units
raster size	9 x 9	mm
Area total	81	mm^2
Chips / wafer	116	pcs
Anode metallisation	bondable (Al)	
Cathode metallisation	solderable (Ag / Ni)	
wire bond	Al, diameter $\leq 500 \text{ }\mu\text{m}$	





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