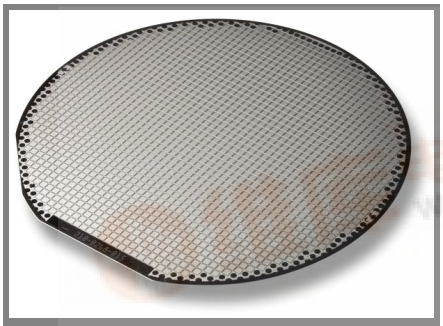
SKCD 18 C 120 I HD



SEMICELL CAL-DIODE

SKCD 18 C 120 I HD

I_F = 25 A
V_{RRM} = 1200 V
Size: 4,2 mm X 4,2 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 °C, I_R = 0,1 mA	1200	V
$I_{F(AV)}$	T_h = 80 °C, T_{vjmax} = 150 °C	20	A
I_{FSM}	T_{vj} = 25 °C, 10 ms, half sine wave	270	A
	T_{vjmax} = 150 °C, 10 ms, half sine wave	200	A
T_{vjmax}		+ 150	°C

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Units
I^2t	T_{vjmax}, 10 ms, half sine wave			200	A^2s
I_R	T_{vj} = 25 °C, V_{RRM}			0,1	mA
	T_{vj} = 125 °C, V_{RRM}			2	mA
V_F	T_{vj} = 25 °C, I_F = 20 A		1,5	1,77	V
	T_{vj} = 125 °C, I_F = 20 A		1,5	1,77	V
$V_{(TO)}$	T_{vj} = 125 °C		0,92		V
r_T	T_{vj} = 125 °C		27,7		mΩ

Dynamic Characteristics

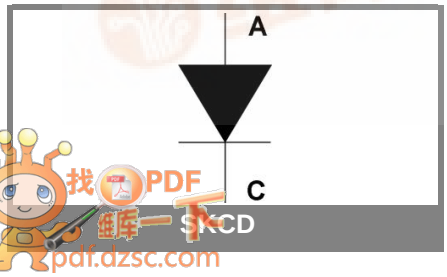
Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	T_{vj} = 25 °C, 20 A ,600 V, 300 A/µs				ns
	T_{vj} = 125 °C, 20 A ,600 V, 300 A/µs				ns
Q_{rr}	T_{vj} = 25 °C, 20 A, 600 V, 300 A/µs				µC
	T_{vj} = 125 °C, 20 A, 600 V, 300 A/µs		5		µC
I_{rrm}	T_{vj} = 25 °C, 20 A, 600 V, 300 A/µs				A
	T_{vj} = 125 °C, 20 A, 600 V, 300 A/µs		16		A

Thermal Characteristics

Symbol	Conditions	min.	typ.	max.	Units
T_{vj}		- 40		+ 150	°C
T_{stg}		- 40		+ 150	°C
T_{solder}	10 min			+ 250	°C
T_{solder}	5 min			+ 320	°C
$R_{th(j-h)}$	soldered on 0,38 mm DCB, reference point on copper heatsink close to the chip.		1,47		K / W

Mechanical Characteristics

Parameter		Units
raster size	4,2 x 4,2	mm
Area total	17,64	mm^2
Chips / wafer	578	pcs
Anode metallisation	bondable (Al)	
Cathode metallisation	solderable (Ag / Ni)	
wire bond	Al, diameter ≤ 500 µm	



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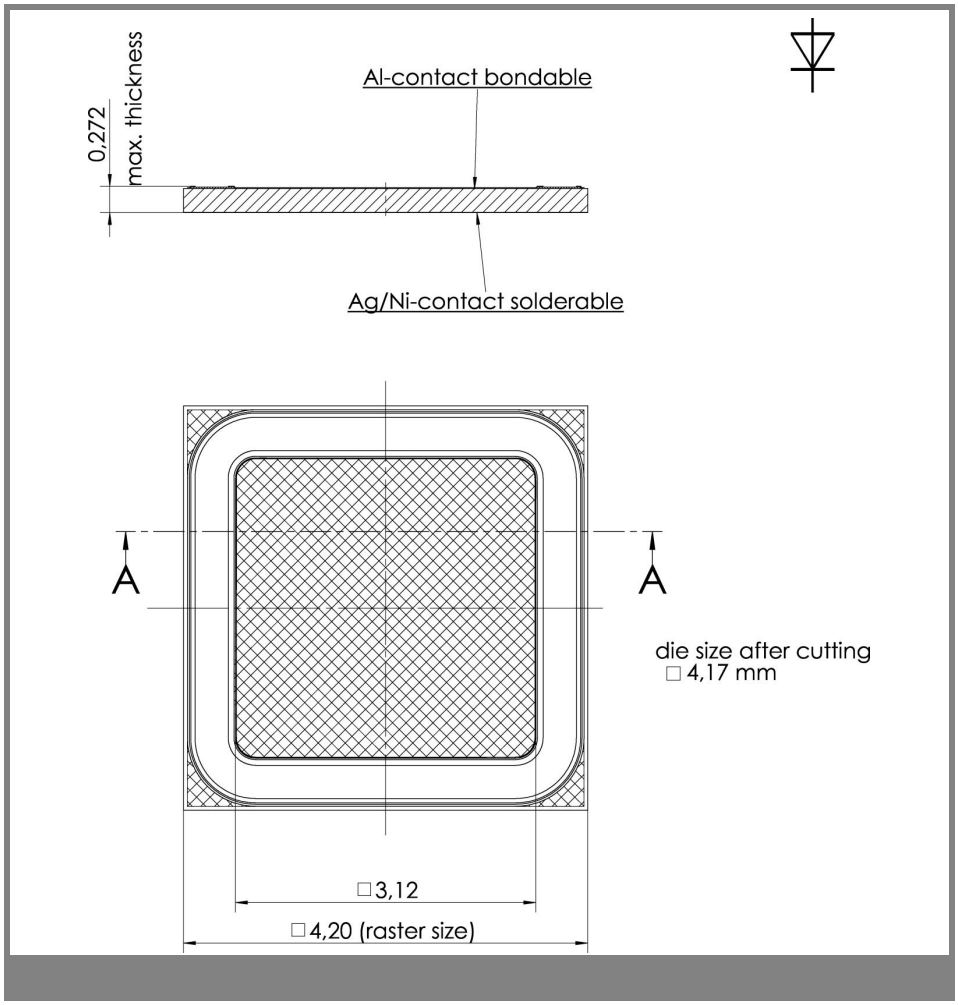

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