

**SEMICELL CAL-DIODE**

## SKCD 18 C 120 I3

$I_F = 25\text{ A}$

$V_{RRM} = 1200\text{ V}$

Size: 4,2 mm X 4,2 mm

Package: wafer frame

### Features

- 600V, 1200V and 1700V
- low forward voltage drop
- easy paralleling due to a small forward voltage spread
- low temperature dependence
- 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

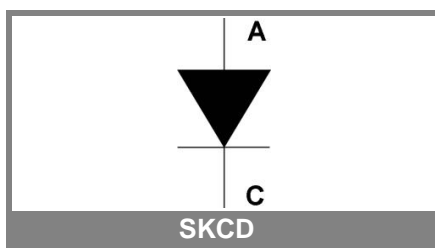
Absolute Maximum Ratings			
Symbol	Conditions	Values	Units
$V_{RRM}$	$T_{vj} = 25\text{ °C}, I_R = 0,1\text{ mA}$	1200	V
$I_{F(AV)}$	$T_h = 80\text{ °C}, T_{vjmax} = 150\text{ °C}$	18	A
$I_{FSM}$	$T_{vj} = 25\text{ °C}, 10\text{ ms, half sine wave}$	230	A
	$T_{vjmax} = 150\text{ °C}, 10\text{ ms, half sine wave}$	180	A
$T_{vjmax}$		+ 150	°C

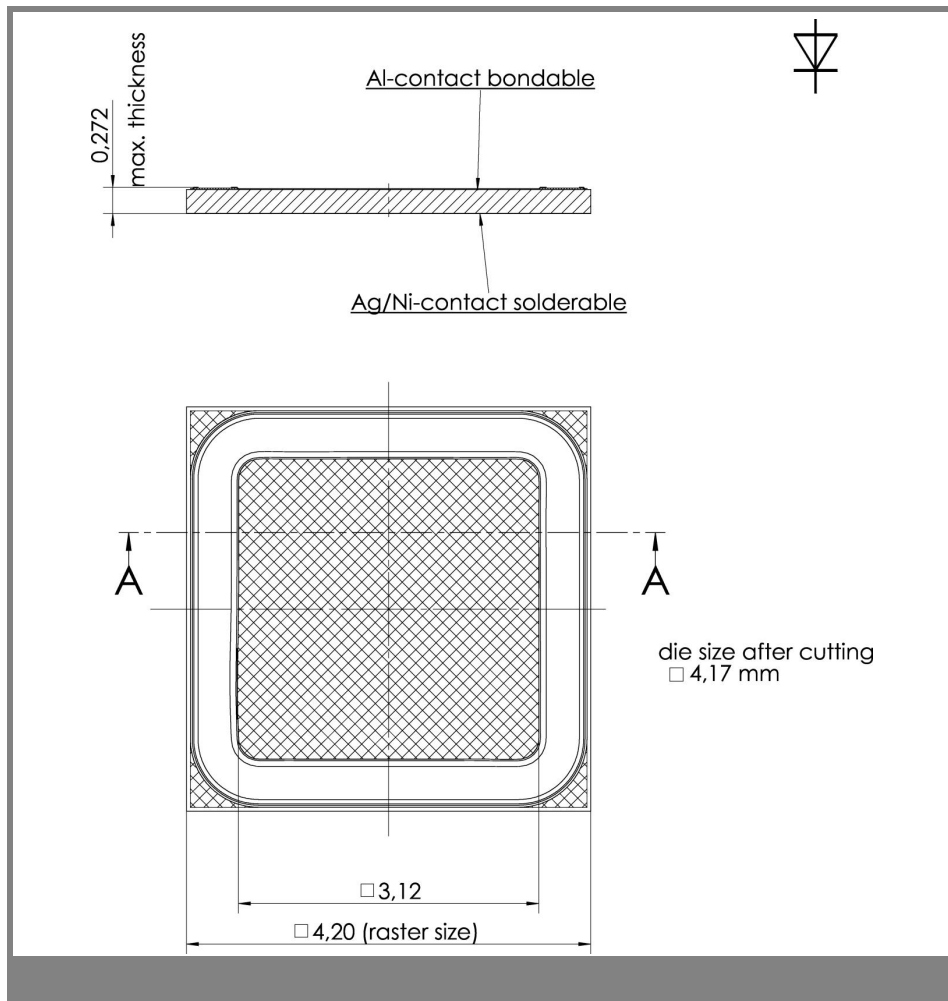
Electrical Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
$I^2t$	$T_{vjmax}, 10\text{ ms, half sine wave}$			162	A <sup>2</sup> s
$I_R$	$T_{vj} = 25\text{ °C}, V_{RRM}$			0,1	mA
	$T_{vj} = 125\text{ °C}, V_{RRM}$			2	mA
$V_F$	$T_{vj} = 25\text{ °C}, I_F = 15\text{ A}$		2	2,5	V
	$T_{vj} = 125\text{ °C}, I_F = 15\text{ A}$		1,79	2,3	V
$V_{(TO)}$	$T_{vj} = 125\text{ °C}$		1,18		V
$r_T$	$T_{vj} = 125\text{ °C}$		36,7		mΩ

Dynamic Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
$t_{rr}$	$T_{vj} = 25\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$				ns
	$T_{vj} = 125\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$				ns
$Q_{rr}$	$T_{vj} = 25\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$		1,5		μC
	$T_{vj} = 125\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$		2,7		μC
$I_{rrm}$	$T_{vj} = 25\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$				A
	$T_{vj} = 125\text{ °C}, 15\text{ A}, 600\text{ V}, 400\text{ A}/\mu\text{s}$		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 <sup>2</sup>
Chips / wafer	578	pcs
Anode metallisation	bondable (Al)	
Cathode metallisation	solderable (Ag / Ni)	
wire bond	Al, diameter ≤ 500 μm	





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