

SKCD 14 C 120 I HD



SEMICELL CAL-DIODE

SKCD 14 C 120 I HD

$I_F = 20\text{ A}$

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

Size: 3,74 mm X 3,74 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}	$T_{vj} = 25\text{ °C}$, $I_R = 0,1\text{ mA}$	1200	V
$I_{F(AV)}$	$T_h = 80\text{ °C}$, $T_{vjmax} = 150\text{ °C}$	17	A
I_{FSM}	$T_{vj} = 25\text{ °C}$, 10 ms, half sine wave	210	A
	$T_{vjmax} = 150\text{ °C}$, 10 ms, half sine wave	170	A
T_{vjmax}		+ 150	°C

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Units
I^2t	T_{vjmax} , 10 ms, half sine wave			145	A ² s
I_R	$T_{vj} = 25\text{ °C}$, V_{RRM}			0,1	mA
	$T_{vj} = 125\text{ °C}$, V_{RRM}				mA
V_F	$T_{vj} = 25\text{ °C}$, $I_F = 15\text{ A}$		1,5	1,77	V
	$T_{vj} = 125\text{ °C}$, $I_F = 15\text{ A}$		1,5	1,77	V
$V_{(TO)}$	$T_{vj} = 125\text{ °C}$		0,92		V
r_T	$T_{vj} = 125\text{ °C}$		35,2		mΩ

Dynamic Characteristics

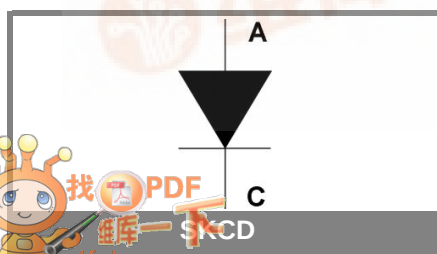
Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	$T_{vj} = 25\text{ °C}$, 20 A, 600 V, 300 A/μs				ns
	$T_{vj} = 125\text{ °C}$, 20 A, 600 V, 300 A/μs				ns
Q_{rr}	$T_{vj} = 25\text{ °C}$, 20 A, 600 V, 300 A/μs				μC
	$T_{vj} = 125\text{ °C}$, 20 A, 600 V, 300 A/μs		4,2		μC
I_{rrm}	$T_{vj} = 25\text{ °C}$, 20 A, 600 V, 300 A/μs				A
	$T_{vj} = 125\text{ °C}$, 20 A, 600 V, 300 A/μs		14		A

Thermal Characteristics

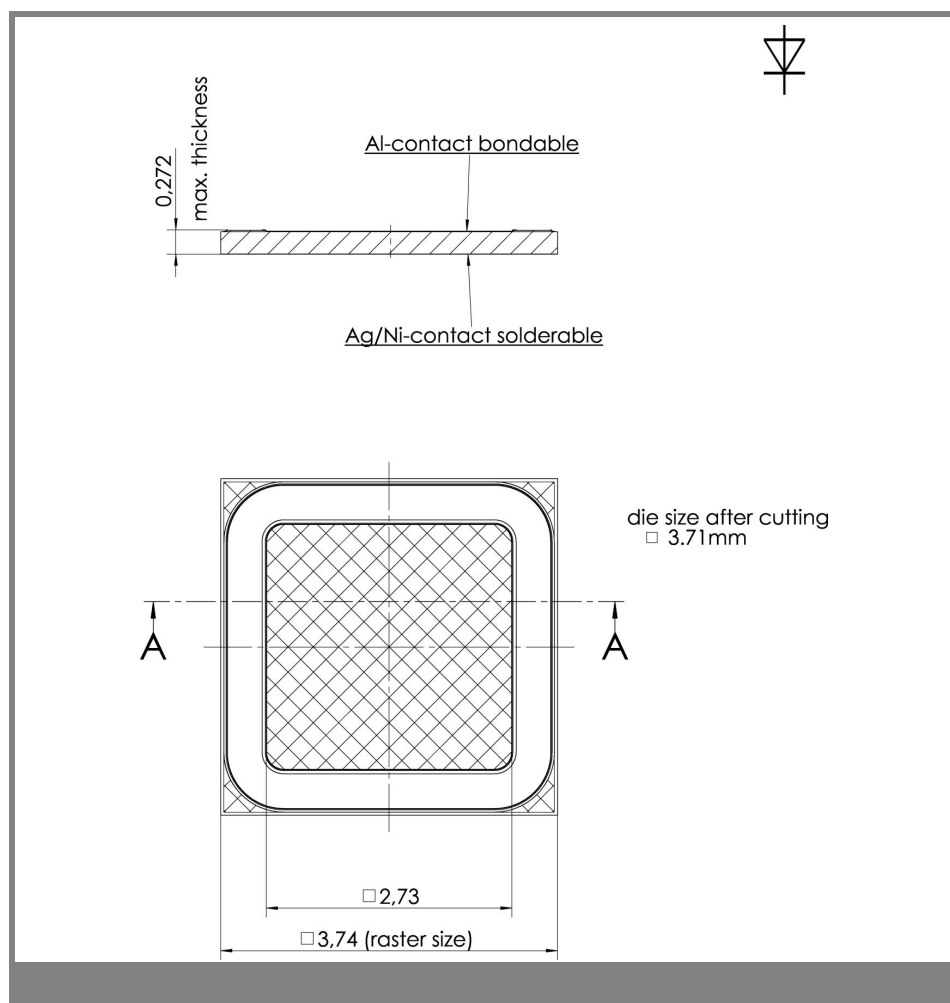
Symbol	Conditions	min.	typ.	max.	Units
T_{vj}		- 40		+ 150	°C
T_{stg}		- 40		+ 150	°C
T_{solder}	10 min			+ 250	°C
T_{solder}	5 min			+ 320	°C
$R_{th(j-h)}$	soldered on 0,38 mm DCB, reference point on copper heatsink close to the chip.		1,7		K / W

Mechanical Characteristics

Parameter	Units
raster size	3,74 x 3,74 mm
Area total	13,99 mm ²
Chips / wafer	720 pcs
Anode metallisation	bondable (Al)
Cathode metallisation	solderable (Ag / Ni)
wire bond	Al, diameter ≤ 500 μm



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