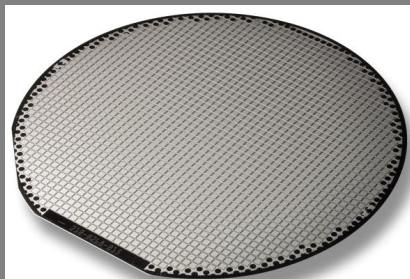


SKCD 42 C 060 I HD



SEMICELL CAL-DIODE

SKCD 42 C 060 I HD

$I_F = 100 \text{ A}$

$V_{RRM} = 600 \text{ V}$

Size: 6,48 mm X 6,48 mm

Package: wafer frame

Features

- high current density
- easy paralleling due to a small forward voltage spread and a 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 600V IGBT

Absolute Maximum Ratings

Symbol	Conditions	Values	Units
V_{RRM}	$T_{vj} = 25^\circ\text{C}$, $I_R = 0,2 \text{ mA}$	600	V
$I_{F(AV)}$	80°C , $T_{vjmax} = 175^\circ\text{C}$	75	A
I_{FSM}	$T_{vj} = 25^\circ\text{C}$, 10 ms, half sine wave	985	A
	$T_{vj} = 150^\circ\text{C}$, 10 ms, half sine wave	810	A
T_{vjmax}		+ 175	$^\circ\text{C}$

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Units
I^2t	$T_{vj} = 150^\circ\text{C}$, 10 ms, half sine wave			3280	A^2s
I_R	$T_{vj} = 25^\circ\text{C}$, V_{RRM}			0,2	mA
	$T_{vj} = 150^\circ\text{C}$, V_{RRM}				mA
V_F	$T_{vj} = 25^\circ\text{C}$, $I_F = 110 \text{ A}$		1,35		V
	$T_{vj} = 150^\circ\text{C}$, $I_F = 110 \text{ A}$		1,31		V
$V_{(TO)}$	$T_{vj} = 150^\circ\text{C}$		0,85		V
r_T	$T_{vj} = 150^\circ\text{C}$		4,2		$\text{m}\Omega$

Dynamic Characteristics

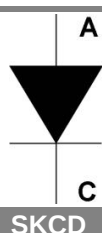
Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	$T_{vj} = 25^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs				ns
	$T_{vj} = 150^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs				ns
Q_{rr}	$T_{vj} = 25^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs				μC
	$T_{vj} = 150^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs		14		μC
I_{rrm}	$T_{vj} = 25^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs				A
	$T_{vj} = 150^\circ\text{C}$, 100 A, 300 V, 1300 A/ μs		67		A

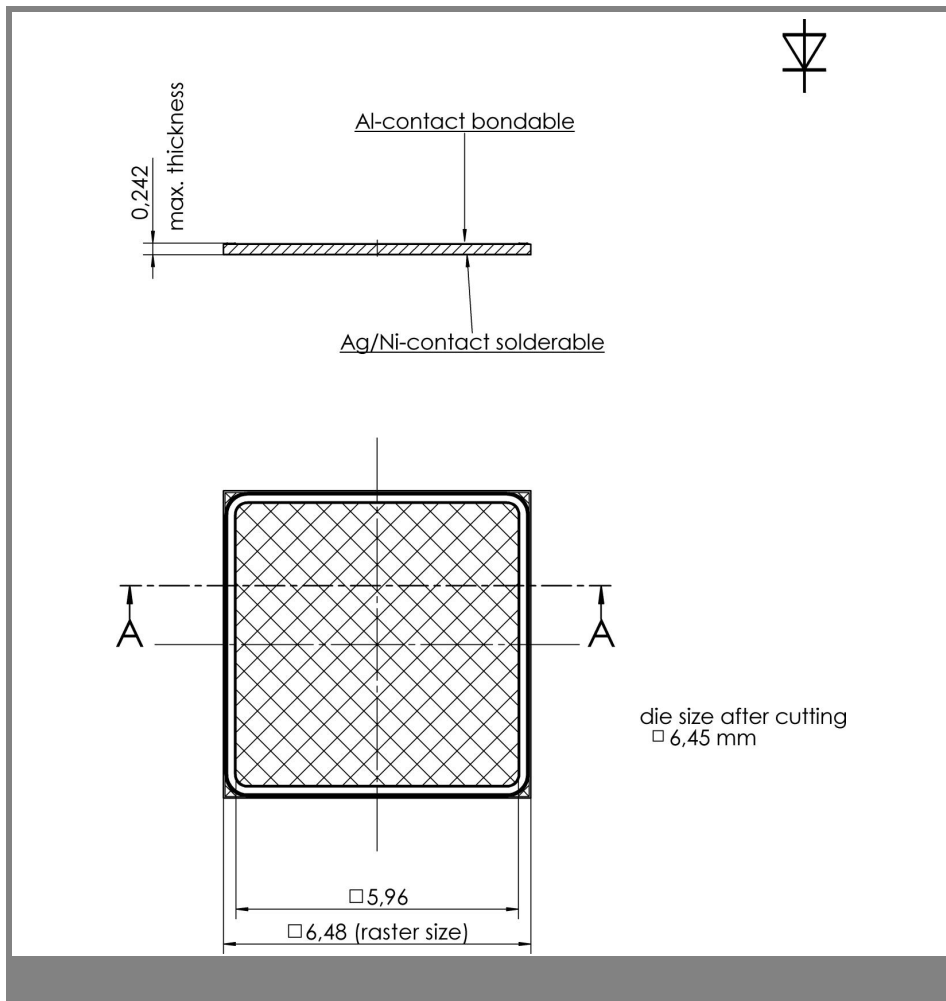
Thermal Characteristics

Symbol	Conditions	min.	typ.	max.	Units
T_{vj}		- 40		+ 175	$^\circ\text{C}$
T_{stg}		- 40		+ 175	$^\circ\text{C}$
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.		0,78		K / W

Mechanical Characteristics

Parameter	Units
raster size	6,48 x 6,48 mm
Area total	41,99 mm^2
Chips / wafer	234 pcs
Anode metallisation	bondable (Al)
Cathode metallisation	solderable (Ag / Ni)
wire bond	Al, diameter $\leq 500 \mu\text{m}$





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