SKCD 24 C 060 I HD

SEMIKRON, leading manufacturer of diode thyristor power semiconductor modules

SEMICELL CAL-DIODE

SKCD 24 C 060 I HD

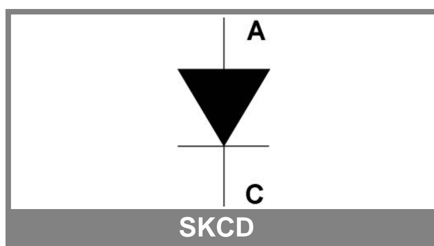
I_F = 75 A
V_{RRM} = 600 V
Size: 4,9 mm X 4,9 mm
Package: wafer frame

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 °C, I_R = 0,2 mA	600	V
$I_{F(AV)}$	80 °C, T_{vjmax} = 175 °C	45	A
I_{FSM}	T_{vj} = 25 °C, 10 ms, half sine wave	490	A
	T_{vj} = 150 °C, 10 ms, half sine wave	395	A
T_{vjmax}		+ 175	°C

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Units
I^2t	T_{vj} = 150 °C, 10 ms, half sine wave			780	A^2s
I_R	T_{vj} = 25 °C, V_{RRM}			0,2	mA
	T_{vj} = 150 °C, V_{RRM}				mA
V_F	T_{vj} = 25 °C, I_F = 60 A		1,35		V
	T_{vj} = 150 °C, I_F = 60 A		1,31		V
$V_{(TO)}$	T_{vj} = 150 °C		0,85		V
r_T	T_{vj} = 150 °C		7,8		mΩ

Dynamic Characteristics

Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	T_{vj} = 25 °C, 75 A ,300 V, 1500 A/µs				ns
	T_{vj} = 150 °C, 75 A ,300 V, 1500 A/µs				ns
Q_{rr}	T_{vj} = 25 °C, 75 A, 300 V, 1500 A/µs				µC
	T_{vj} = 150 °C, 75 A, 300 V, 1500 A/µs		7,8		µC
I_{rrm}	T_{vj} = 25 °C, 75 A, 300 V, 1500 A/µs				A
	T_{vj} = 150 °C, 75 A, 300 V, 1500 A/µs		50		A

Thermal Characteristics

Symbol	Conditions	min.	typ.	max.	Units
T_{vj}		- 40		+ 175	°C
T_{stg}		- 40		+ 175	°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.		1,21		K / W

Mechanical Characteristics

Parameter		Units
raster size	4,9 x 4,9	mm
Area total	24,01	mm^2
Chips / wafer	422	pcs
Anode metallisation	bondable (Al)	
Cathode metallisation	solderable (Ag / Ni)	
wire bond	Al, diameter ≤ 500 µm	

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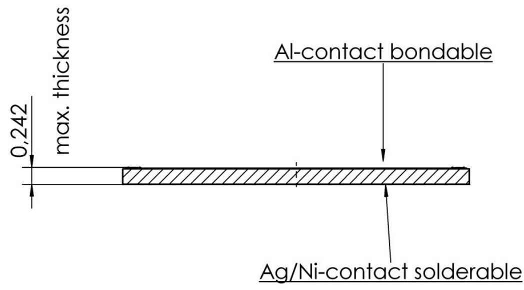

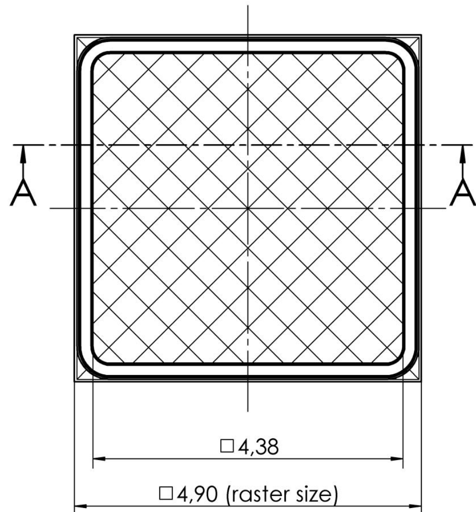

die size after cutting
□ 4,87 mm

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