



SEMICELL CAL-DIODE

SKCD 81 C 120 I3

$I_F = 100\text{ A}$

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

Size: 9 mm X 9 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 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}	$T_{vj} = 25\text{ °C}, I_R = 0,3\text{ mA}$	1200	V
$I_{F(AV)}$	$T_h = 80\text{ °C}, T_{vjmax} = 150\text{ °C}$	80	A
I_{FSM}	$T_{vj} = 25\text{ °C}, 10\text{ ms, half sine wave}$	1110	A
	$T_{vjmax} = 150\text{ °C}, 10\text{ ms, half sine wave}$	900	A
T_{vjmax}		+ 150	°C

Electrical Characteristics

Symbol	Conditions	min.	typ.	max.	Units
I^2t	$T_{vjmax}, 10\text{ ms, half sine wave}$			4000	A ² s
I_R	$T_{vj} = 25\text{ °C}, V_{RRM}$			0,3	mA
	$T_{vj} = 125\text{ °C}, V_{RRM}$			8	mA
V_F	$T_{vj} = 25\text{ °C}, I_F = 100\text{ A}$		2	2,5	V
	$T_{vj} = 125\text{ °C}, I_F = 100\text{ A}$		1,79	2,3	V
$V_{(TO)}$	$T_{vj} = 125\text{ °C}$		1,18		V
r_T	$T_{vj} = 125\text{ °C}$		5,9		mΩ

Dynamic Characteristics

Symbol	Conditions	min.	typ.	max.	Units
t_{rr}	$T_{vj} = 25\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$				ns
	$T_{vj} = 125\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$				ns
Q_{rr}	$T_{vj} = 25\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$		4		μC
	$T_{vj} = 125\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$		15		μC
I_{rrm}	$T_{vj} = 25\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$				A
	$T_{vj} = 125\text{ °C}, 100\text{ A}, 600\text{ V}, 1000\text{ A}/\mu\text{s}$		65		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.		0,4		K / W

Mechanical Characteristics

Parameter	Units
raster size	9 x 9 mm
Area total	81 mm ²
Chips / wafer	116 pcs
Anode metallisation	bondable (Al)
Cathode metallisation	solderable (Ag / Ni)
wire bond	Al, diameter ≤ 500 μm



