

SKiM 150GD128D



SKiM 4

SPT IGBT Module

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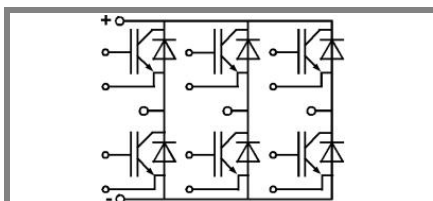
Target Data

Features

- N channel, homogeneous planar IGBT Silicon structure with n+ buffer layer in SPT (soft punch through) technology
- Low inductance case
- Fast & soft inverse CAL diodes
- Isolated by Al₂O₃ DCB (Direct Copper Bonded) ceramic plate
- Pressure contact technology for thermal contacts
- Spring contact system to attach driver PCB to the control
- Integrated temperature sensor

Typical Applications

- Switched mode power supplies
- Three phase inverters for AC motor speed control
- Switching (not for linear use)

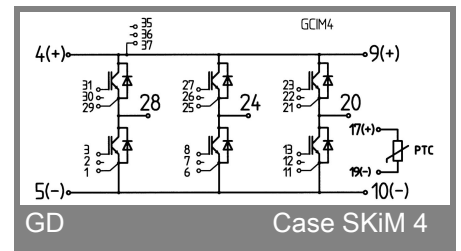
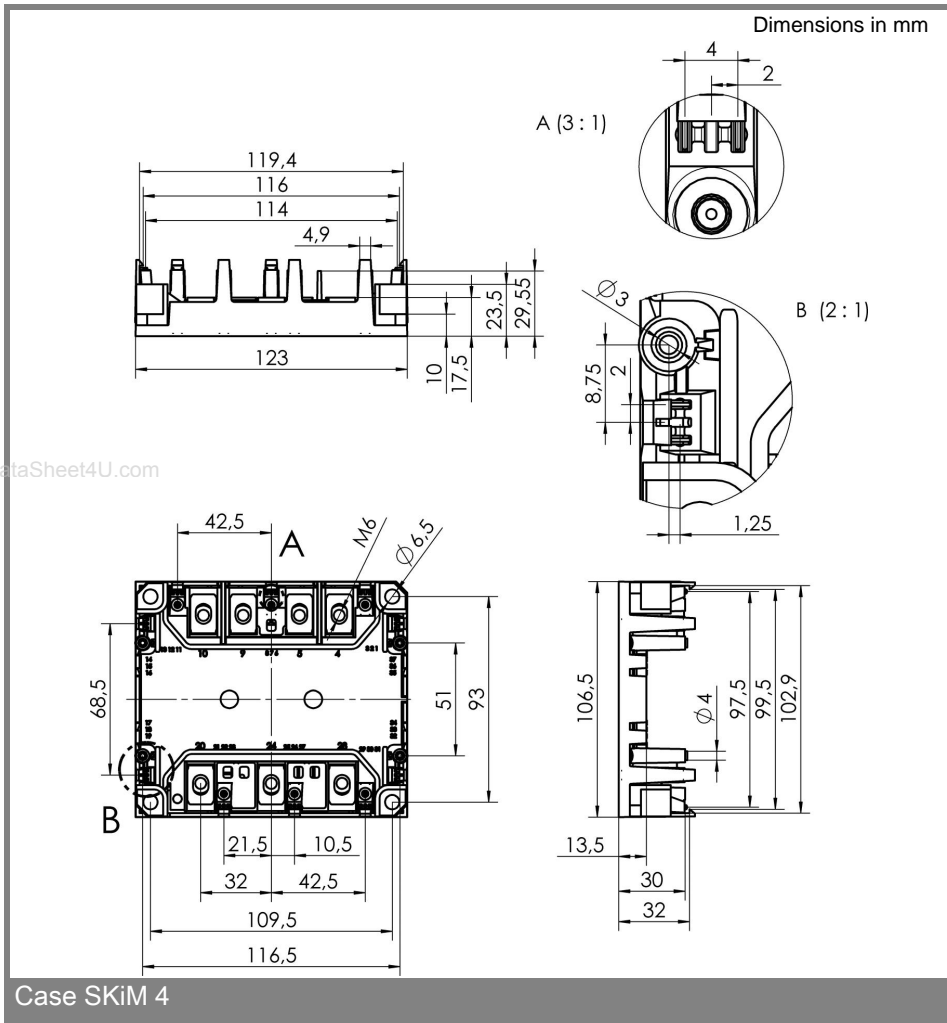


GD

Absolute Maximum Ratings		$T_{case} = 25^{\circ}C$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V_{CES}		1200	V
I_C	$T_s = 25 (80)^{\circ}C$	110 (80)	A
I_{CRM}	$t_p = 1 \text{ ms}$	200	A
V_{GES}		± 20	V
$T_j (T_{stg})$		-40 ... 150 (125)	$^{\circ}C$
T_{cop}	max. case operating temperature	125	$^{\circ}C$
V_{isol}	AC, 1 min.	2500	V
Inverse diode			
I_F	$T_s = 25 (80)^{\circ}C$	110 (70)	A
I_{FRM}	$t_p = 1 \text{ ms}$	200	A
I_{FSM}	$t_p = 10 \text{ ms}; \text{sin.}; T_j = 150^{\circ}C$	1100	A

Characteristics		$T_{case} = 25^{\circ}C$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}; I_C = 8 \text{ mA}$	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0; V_{CE} = V_{CES}; T_j = 25 (125)^{\circ}C$		0,1	0,3	mA
V_{CEO}	$T_j = 25 (125)^{\circ}C$		1 (0,9)	1,15 (1,05)	V
r_{CE}	$T_j = 25 (125)^{\circ}C$		9 (12)	12 (15)	m Ω
V_{CEsat}	$I_{Cnom} = 100 \text{ A}; V_{GE} = 15 \text{ V}; T_j = 25 (125)^{\circ}C$ on chip level		1,9 (2,1)	2,35 (2,55)	V
C_{ies}	$V_{GE} = 0; V_{CE} = 25 \text{ V}; f = 1 \text{ MHz}$		9		nF
C_{oes}	$V_{GE} = 0; V_{CE} = 25 \text{ V}; f = 1 \text{ MHz}$		1		nF
C_{res}	$V_{GE} = 0; V_{CE} = 25 \text{ V}; f = 1 \text{ MHz}$		1		nF
L_{CE}				15	nH
$R_{CC'+EE'}$	resistance, terminal-chip $T_c = 25 (125)^{\circ}C$		1,35 (1,75)		m Ω
$t_{d(on)}$	$V_{CC} = 600 \text{ V}$				ns
t_r	$I_{Cnom} = 100 \text{ A}$				ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = \Omega$				ns
t_f	$T_j = 125^{\circ}C$				ns
$E_{on} (E_{off})$	$V_{GE} \pm 15 \text{ V}$		11,5 (9,5)		mJ
$E_{on} (E_{off})$	with SKHI 64; $T_j = 125^{\circ}C$ $V_{CC} = 600 \text{ V}; I_C = 100 \text{ A}$				mJ
Inverse diode					
$V_F = V_{EC}$	$I_{Fnom} = 100 \text{ A}; V_{GE} = 0 \text{ V}; T_j = 25 (125)^{\circ}C$		2 (1,8)	2,5 (2,3)	V
V_{TO}	$T_j = 25 (125)^{\circ}C$		1,1	1,45 (1,25)	V
r_T	$T_j = 25 (125)^{\circ}C$		9	13 (11)	m Ω
I_{RRM}	$I_F = 100 \text{ A}; T_j = 125^{\circ}C$				A
Q_{rr}	$V_{GE} = 0 \text{ V}; di/dt = \text{A}/\mu\text{s}$				μC
E_{rr}	$R_{Gon} = R_{Goff} = \Omega$				mJ
Thermal characteristics					
$R_{th(j-s)}$	per IGBT			0,4	K/W
$R_{th(j-s)}$	per FWD			0,5	K/W
Temperature Sensor					
R_{TS}	$T = 25 (100)^{\circ}C$		1 (6,7)		k Ω
tolerance	$T = 25 (100)^{\circ}C$		3 (2)		%
Mechanical data					
M_1	to heatsink (M5)	2		3	Nm
M_2	for terminals (M6)	4		5	Nm
w				310	g

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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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