

SKiM 150GD128D



SKiM 4

SPT IGBT Module

SKiM 150GD128D

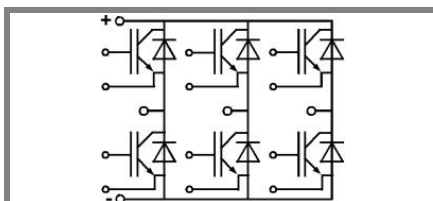
Target Data

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)

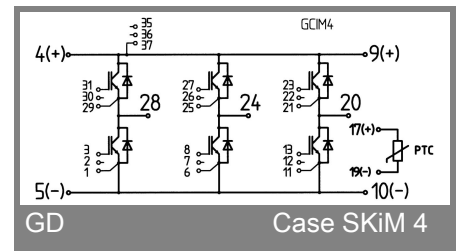
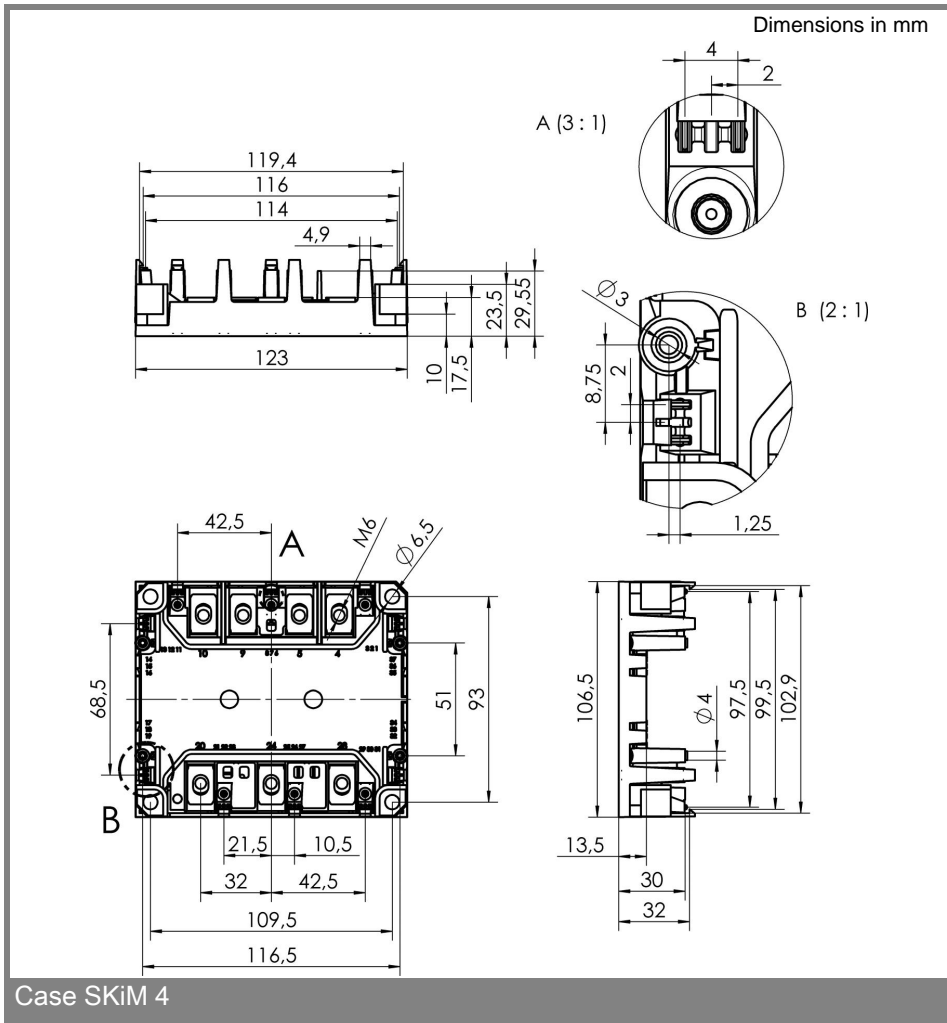


GD

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

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

SKiM 150GD128D



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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.