SKiM 400GD126DM

SKiM® 4

IGBT Modules

SKiM 400GD126DM

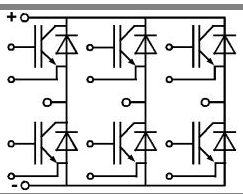
Target Data

Features

- Trench gate IGBT with field stop layer
- Low inductance case
- Fast & soft inverse CAL diodes
- Isolated by AIN DCB (Direct Copper Bonded) ceramic plate
- Pressure contact technology for thermal contacts
- Spring contact system to attach driver PCB to the control terminals
- Integrated temperature sensor

Typical Applications*

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



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Absolute Maximum Ratings		T_c = 25 °C, unless otherwise specified	
Symbol	**Conditions**	**Values**	**Units**
IGBT			
V_{CES}		1200	V
I_C	T_s = 25 (70) °C	330 (255)	A
I_{CRM}	t_p = 1 ms	600	A
V_{GES}		± 20	V
T_j (T_{stg})		- 40 ... + 150 (125)	°C
T_{cop}	max. case operating temperature	125	°C
V_{isol}	AC, 1 min.	2500	V
Inverse diode			
I_F	T_s = 25 (70) °C	300 (230)	A
I_{FRM}	t_p = 1 ms	600	A
I_{FSM}	t_p = 10 ms; sin.; T_j = 150 °C	2200	A

Characteristics		T_c = 25 °C, unless otherwise specified			
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Units**
IGBT					
$V_{GE(th)}$	V_{GE} = V_{CE}; I_C = 12 mA	4,95	5,8	6,55	V
I_{CES}	V_{GE} = 0; V_{CE} = V_{CES}; T_j = 25 °C			0,6	mA
V_{CEO}	T_j = 25 (125) °C		1 (0,9)	1,2 (1,1)	V
r_{CE}	T_j = 25 (125) °C		2,3 (3,7)	3 (4,5)	mΩ
V_{CEsat}	I_{Cnom} = 300 A; V_{GE} = 15 V, T_j = 25 (125) °C on chip level		1,7 (2)	2,15 (2,45)	V
C_{ies}	V_{GE} = 0; V_{CE} = 25 V; f = 1 MHz		23		nF
C_{oes}	V_{GE} = 0; V_{CE} = 25 V; f = 1 MHz		1,6		nF
C_{res}	V_{GE} = 0; V_{CE} = 25 V; f = 1 MHz		1,6		nF
L_{CE}				15	nH
$R_{CC'+EE'}$	resistance, terminal-chip T_c= 25 (125) °C		1,35 (1,75)		mΩ
$t_{d(on)}$	V_{CC} = 600 V				ns
t_r	I_{Cnom} = 300 A				ns
$t_{d(off)}$	R_{Gon} = R_{Goff} = Ω				ns
t_f	T_j = 125 °C				ns
E_{on} (E_{off})	V_{GE} ± 15 V		29 (46)		mJ
E_{on} (E_{off})	with SKHI 64; T_j = 125 °C V_{CC} = 600 V; I_C = 300 A				mJ
Inverse diode					
V_F = V_{EC}	I_{Fnom} = 200 A; V_{GE} = 0 V; T_j = 25 (125) °C		2 (1,8)	2,55 (2,3)	V
V_{TO}	T_j = 25 (125) °C		1,1	1,45 (1,25)	V
r_T	T_j = 25 (125) °C		4,5	5,3 (5,3)	mΩ
I_{RRM}	I_F = 300 A; T_j = 125 °C				A
Q_{rr}	V_{GE} = V di/dt = A/µs				µC
E_{rr}	R_{Gon} = R_{Goff} =				mJ
Thermal characteristics					
$R_{th(j-s)}$	per IGBT			0,134	K/W
$R_{th(j-s)}$	per FWD			0,19	K/W
Temperature Sensor					
R_{TS}	T = 25 (100) °C		1 (1,67)		kΩ
tolerance	T = 25 (100) °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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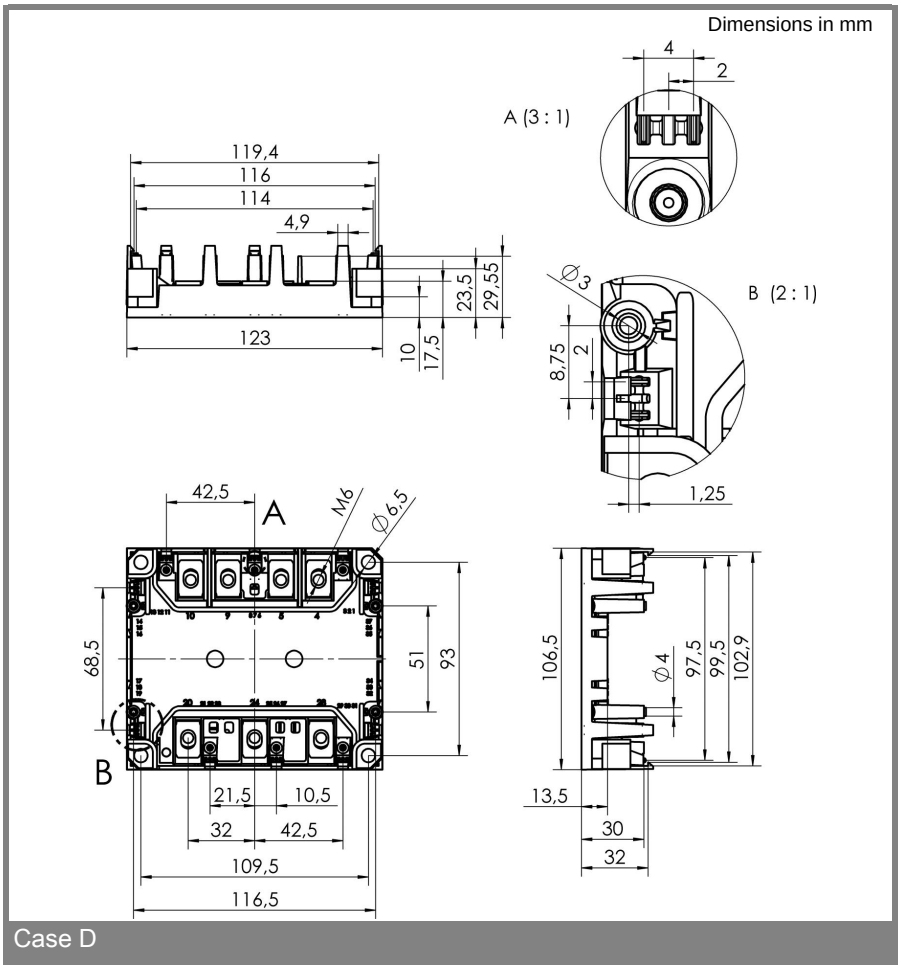
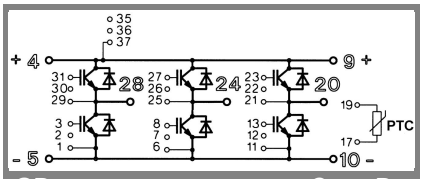


Case D



GD Case D

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

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.