

SKiM 270GD128D

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SKiM® 4

SPT IGBT Modules

SKiM 270GD128D

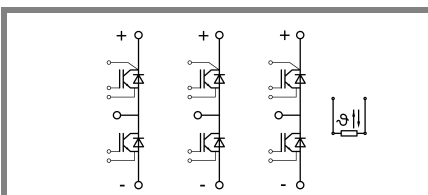
Target Data

Features

- N channel, homogenous planar IGBT with n+ buffer layer in SPT (soft punch through) technology
- Isolated by Al₂O₃ DCB (direct copper bonded) ceramic substrate plate
- Pressure contact technology for thermal contacts
- Spring contact system to attach driver PCB to the auxiliary terminals
- Integrated temperature sensor

Typical Applications

- Switched mode power supplies
- Three phase inverter for AC motor drives

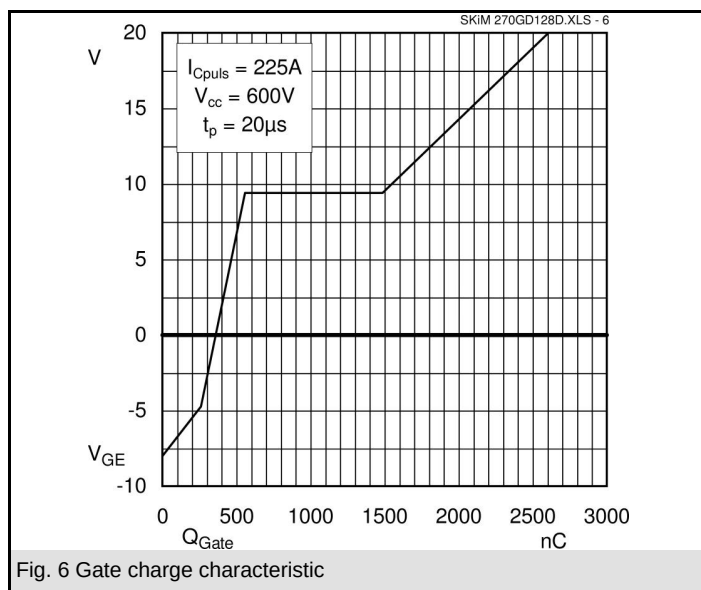
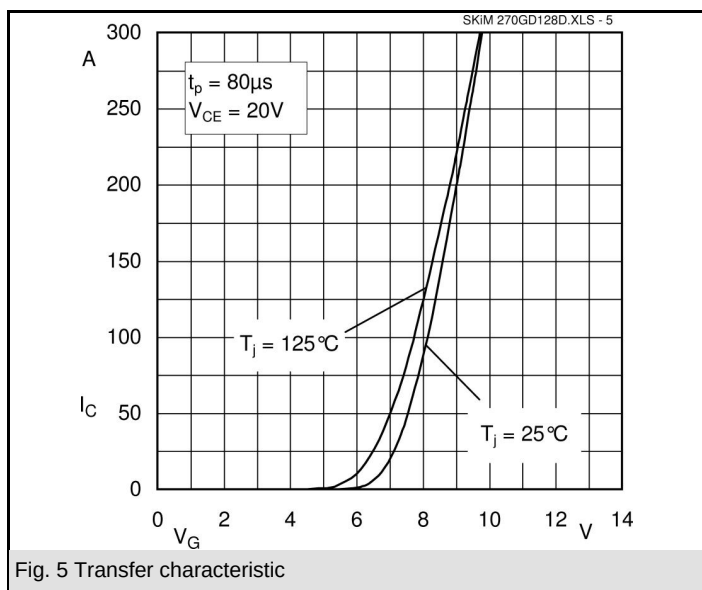
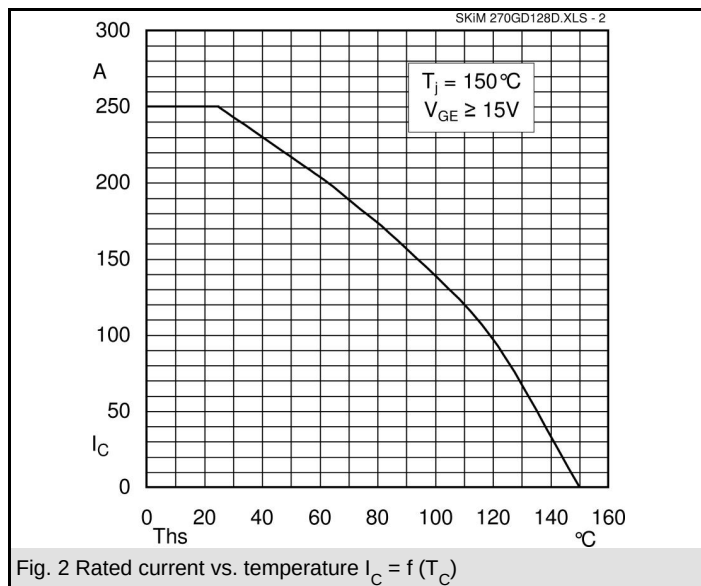
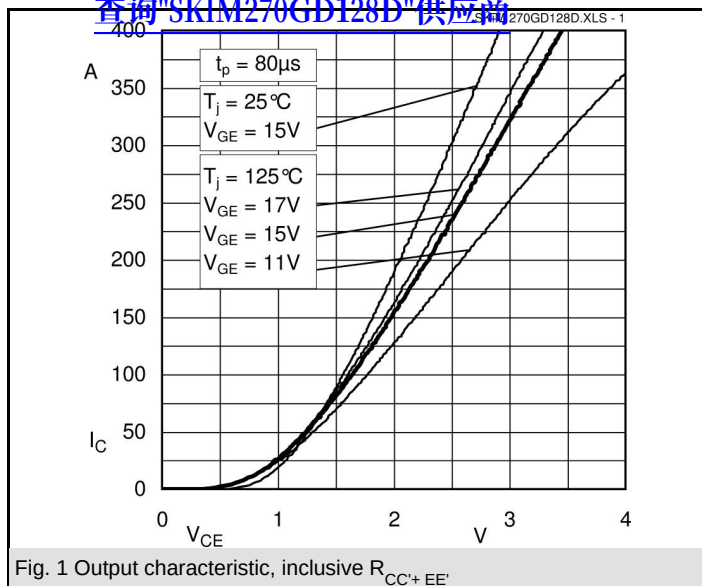


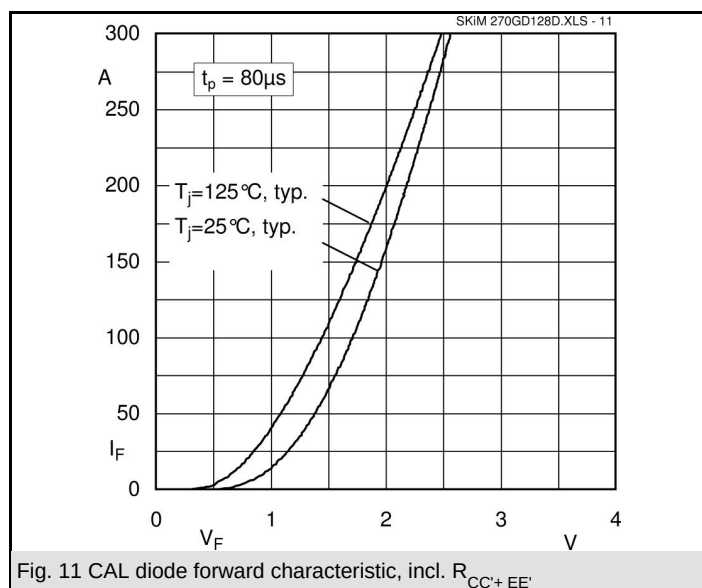
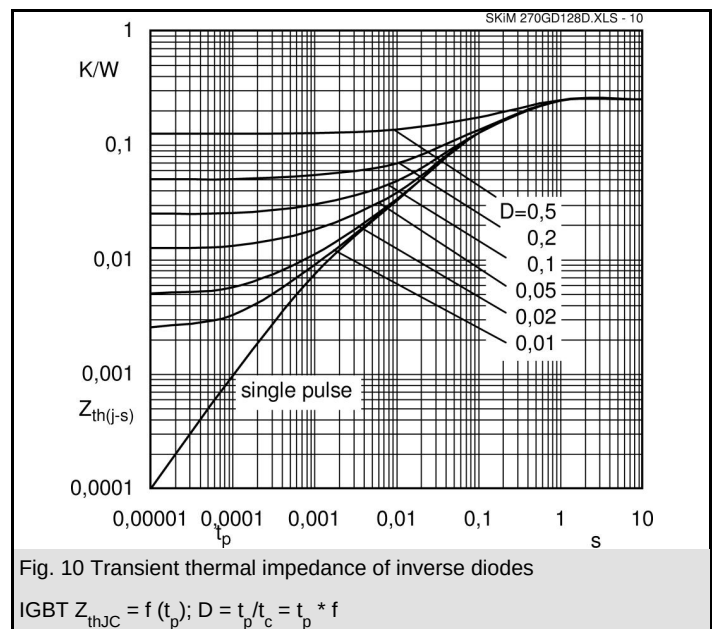
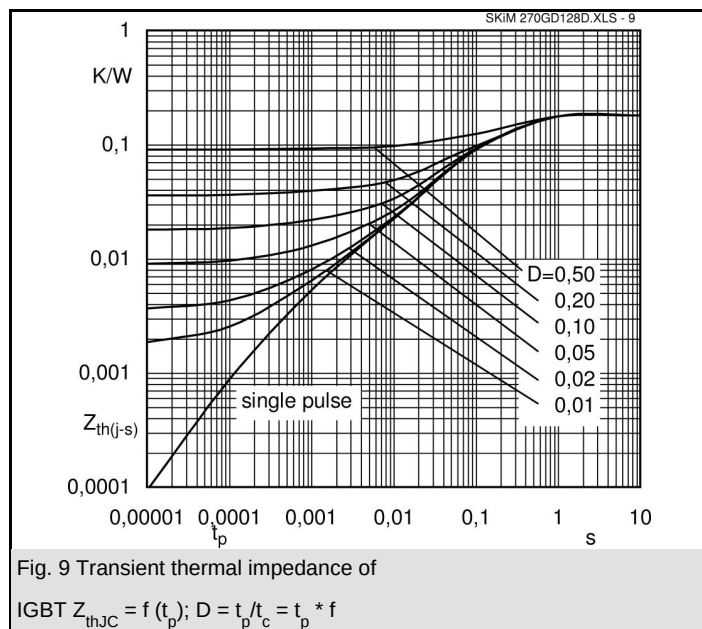
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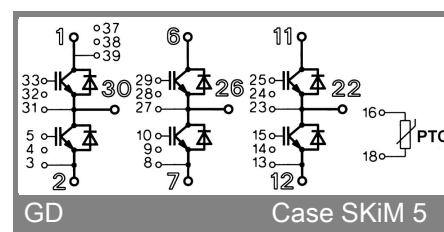
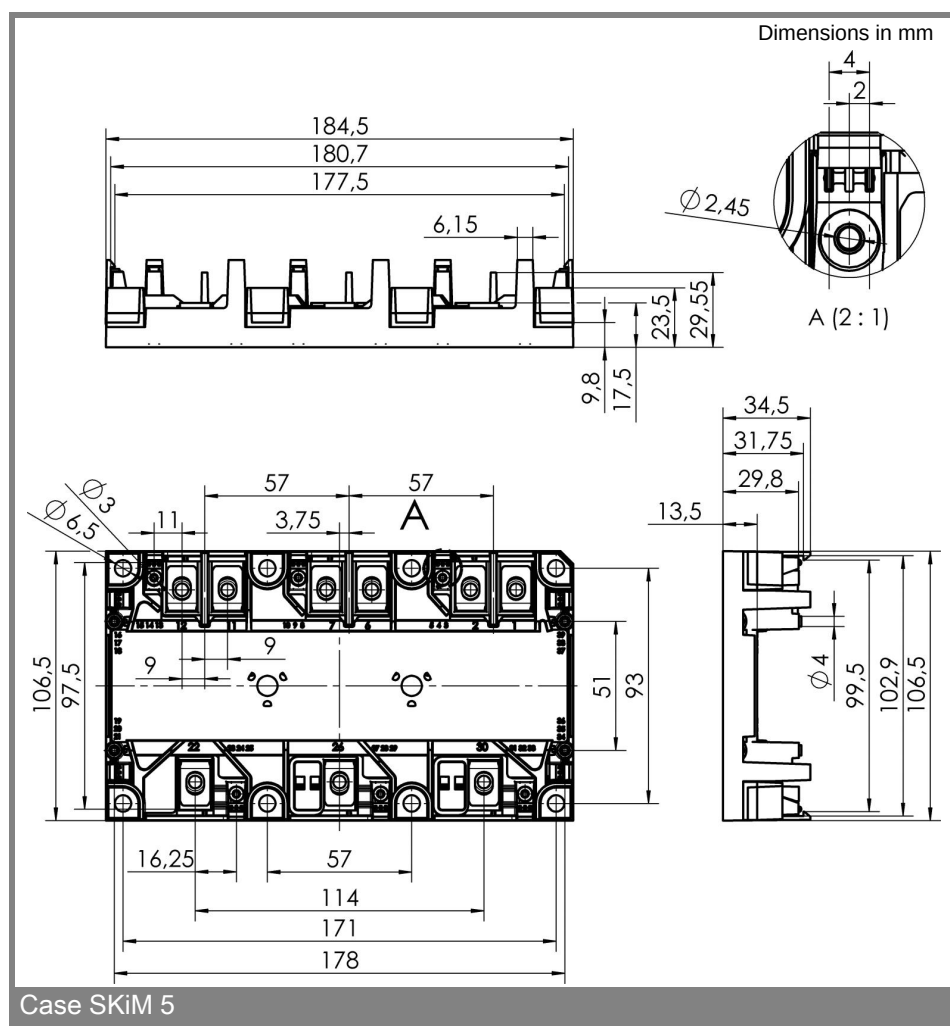
Absolute Maximum Ratings		T _{case} = 25°C, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V _{CES}		1200	V
I _C	T _s = 25 (70) °C	250 (190)	A
I _{CM}	T _s = 25 (70) °C, t _p = 1 ms	500 (380)	A
V _{GES}		± 20	V
T _j (T _{stg})		-40 ...+150 (125)	°C
T _{cop}	max. case operating temperature	125	°C
V _{isol}	AC, 1 min.	2500	V
Inverse diode			
I _F	T _s = 25 (70) °C	220 (150)	A
I _{FM} = -I _{CM}	T _s = 25 (70) °C, t _p = 1 ms	500 (380)	A
I _{FSM}	t _p = 10 ms; sin.; T _j = 150 °C		A

Characteristics		T _{case} = 25°C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
V _{GE(th)}	V _{GE} = V _{CE} ; I _C = 12 mA	4,45	5,5	6,55	V
I _{CES}	V _{GE} = 15; V _{CE} = V _{CES} ; T _j = 25 °C		0,2	0,6	mA
V _{CEO}	T _j = 25 °C		1 (0,9)	1,15 (1,05)	V
r _{CE}	T _j = 25 () °C		4 (5,3)	5,3 (6,7)	mΩ
V _{CEsat}	I _C = 225 A; V _{GE} = 15 V, T _j = 25 (125) °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		18,6		nF
C _{oes}	V _{GE} = 0; V _{CE} = 25 V; f = 1 MHz		2,2		nF
C _{res}	V _{GE} = 0; V _{CE} = 25 V; f = 1 MHz		2,1		nF
L _{CE}				20	nH
R _{CC'+EE'}	resistance, terminal-chip T _c = 25 (125) °C		0,9 (1,1)		mΩ
t _{d(on)}	V _{CC} = 600 V		160		ns
t _r	I _C = 225 A		60		ns
t _{d(off)}	R _{Gon} = R _{Goff} = 4,4 Ω		660		ns
t _f	T _j = 125 °C		80		ns
E _{on} (E _{off})	V _{GE} ± 15 V		20,9 (24,1)		mJ
E _{on} (E _{off})	with SKHI 65; T _j = 125 °C V _{CC} = 600 V; I _C = 225 A				mJ
Inverse diode					
V _F = V _{EC}	I _F = 225 A; V _{GE} = 0 V; T _j = 25 (125) °C				V
V _{TO}	T _j = 25 (125) °C				V
r _T	T _j = 25 (125) °C				mΩ
I _{RRM}	I _F = 225 A; T _j = 125 °C				A
Q _{rr}	V _{GE} = 0 V di/dt = A/μs				μC
E _{rr}	R _{Gon} = R _{Goff} = 4,4 Ω		14,5		mJ
Thermal characteristics					
R _{th(j-s)}	per IGBT			0,18	K/W
R _{th(j-s)}	per FWD			0,25	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)				Nm
M ₂	for terminals (M6)	4		5	Nm
w				460	g

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

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