SKiM 450GD126DL



SKiM[®] 5

IGBT Modules

SKiM 450GD126DL

Target Data

Features

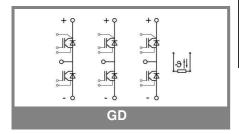
- Trench gate IGBT with field stop layer
- Low inductance case
- Fast & soft inverse CAL diodes
- Isolated by Al₂O₃ DCB (Direct Copper Bonded) ceramic plate
- Pressure contact technology for thermal contacts
- Spring contact system to attach driver PCB to the control terminals
- Integrated temperature sensor

Typical Applications*

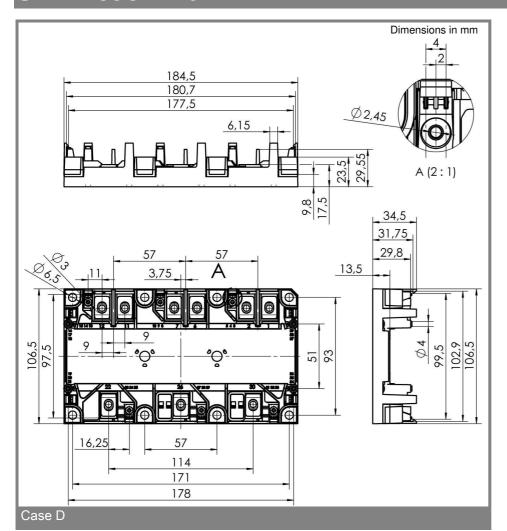
- Uninteruptable power supplies (UPS)
- Three phase inverters for AC motor speed control

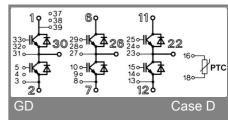
Absolute	Maximum Ratings	T _c = 25 °C, unless otherwise specified						
Symbol	Conditions	Values	Units					
IGBT								
V_{CES}		1200	V					
I _C	$T_s = 25 (70) ^{\circ}C$ $t_p = 1 \text{ ms}$	390 (300)	Α					
I _{CRM}	$t_p = 1 \text{ ms}$	780	Α					
V_{GES}		± 20	V					
$T_j (T_{stg})$		- 40 + 150 (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	345 (260)	Α					
I _{FRM}	$t_p = 1 \text{ ms}$	780	Α					
I _{FSM}	$t_p = 10 \text{ ms; sin.; } T_j = 150 ^{\circ}\text{C}$	3300	Α					

Characteristics $T_c = 25$ °C, unless otherwise specified							
Symbol	Conditions	min.	typ.	max.	Units		
IGBT							
$V_{GE(th)}$	$V_{GE} = V_{CE}$; $I_C = 18 \text{ mA}$	4,95	5,8	6,55	V		
I _{CES}	$V_{GE} = 0; V_{CE} = V_{CES};$ $T_i = 25 °C$			5	mA		
\ /			4 (0.0)	40(44)	.,		
V _{CEO}	T _i = 25 (125) °C T _i = 25 (125) °C		1 (0,9) 1,6 (2,4)	1,2 (1,1)	V mΩ		
r _{CE}	·		,	2,1 (3)			
V_{CEsat}	$I_{Cnom} = 450 \text{ A; } V_{GE} = 15 \text{ V,}$		1,7 (2)	2,15 (2,45)	V		
	T _j = 25 (125) °C on chip level						
C _{ies}	V _{GE} = 0; V _{CE} = 25 V; f = 1 MHz		35		nF		
C _{oes}	$V_{GE} = 0$; $V_{CE} = 25 \text{ V}$; $f = 1 \text{ MHz}$		2,5		nF –		
C _{res}	$V_{GE} = 0$; $V_{CE} = 25 \text{ V}$; $f = 1 \text{ MHz}$		2,4		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		210		ns		
t,	I _{Cnom} = 450 A		35		ns		
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 1 \Omega$		680		ns		
t _f	T _j = 125 °C		90		ns		
$E_{on} (E_{off})$	V _{GE} ± 15 V		39 (54)		mJ		
$E_{on}\left(E_{off}\right)$	with SKHI 65; T _j = 125 °C				mJ		
	V _{CC} = 600 V; I _C = 450 A						
Inverse d	Inverse diode						
$V_F = V_{EC}$	I _{Fnom} = 300 A; V _{GE} = 0 V; T _i = 25 (125) °C		2 (1,8)	2,55 (2,3)	V		
V_{TO}	T _i = 25 (125) °C		1,1	1,45 (1,25)	V		
r _T	T _i = 25 (125) °C		3	3,5 (3,5)	mΩ		
I_{RRM}	I _F = 450 A; T _j = 125 °C		500		Α		
Q_{rr}	V _{GE} = V di/dt = 8200 A/μs		62		μC		
E _{rr}	$R_{Gon} = R_{Goff} = 1 \Omega$		30		mJ		
	characteristics						
$R_{th(j-s)}$	per IGBT			0,13	K/W		
$R_{th(j-s)}$	per FWD			0,19	K/W		
	ture 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				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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