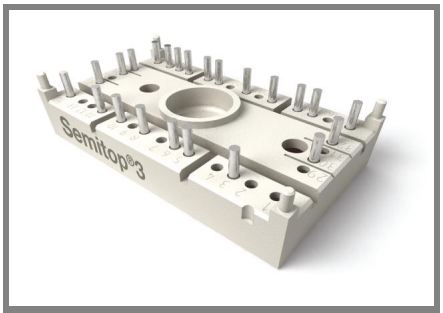
SK50GD066ET



SEMITOP® 3

IGBT Module

SK50GD066ET

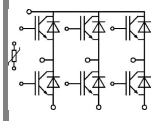
Target Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications

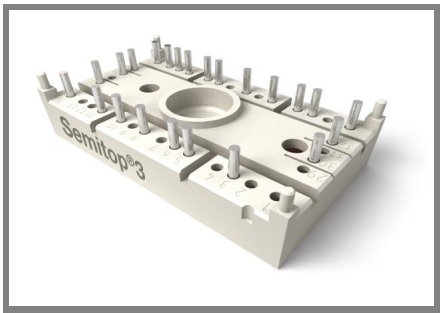
- Inverter up to 10 kVA
- Typ. motor power 4 kW



GD-ET

Absolute Maximum Ratings			T_s = 25 °C, unless otherwise specified	
Symbol	**Conditions**		**Values**	**Units**
IGBT				
V_{CES}	T_j = 25 °C		600	V
I_C	T_j = 175 °C	T_s = 25 °C	57	A
		T_s = 70 °C	45	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom}		100	A
V_{GES}			± 20	V
t_{psc}	V_{CC} = 360 V; $V_{GE} \leq$ 20 V; V_{CES} < 600 V	T_j = 125 °C	6	µs
Inverse Diode				
I_F	T_j = 175 °C	T_s = 25 °C	56	A
		T_s = 70 °C	44	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom}		60	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	°C
T_{stg}			-40 ... +125	°C
V_{isol}	AC, 1 min.		2500	V

Characteristics			T_s = 25 °C, unless otherwise specified			
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
IGBT						
$V_{GE(th)}$	V_{GE} = V_{CE}, I_C = 0,8 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C				mA
		T_j = 125 °C				mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			600	nA
		T_j = 125 °C				nA
V_{CE0}		T_j = 25 °C		0,9	1,1	V
		T_j = 150 °C		0,8	1	V
r_{CE}	V_{GE} = 15 V	T_j = 25°C		11	15	mΩ
		T_j = 150°C		17	21	mΩ
$V_{CE(sat)}$	I_{Cnom} = 50 A, V_{GE} = 15 V	T_j = 25°C$_{chiplev.}$		1,45	1,85	V
		T_j = 125°C$_{chiplev.}$		1,65	2,05	V
C_{ies}	V_{CE} = 25, V_{GE} = 0 V	f = 1 MHz		3,1		nF
C_{oes}				0,2		nF
C_{res}				0,093		nF
$t_{d(on)}$	R_{Gon} = 12 Ω	V_{CC} = 300V				ns
t_r		I_{Cnom}= 50A				ns
E_{on}		T_j = 150 °C		1,54		mJ
$t_{d(off)}$	R_{Goff} = 12 Ω	V_{GE}=±15V				ns
t_f						ns
E_{off}				1,56		mJ
$R_{th(j-s)}$	per IGBT			1,3		K/W



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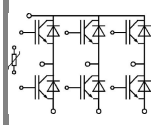
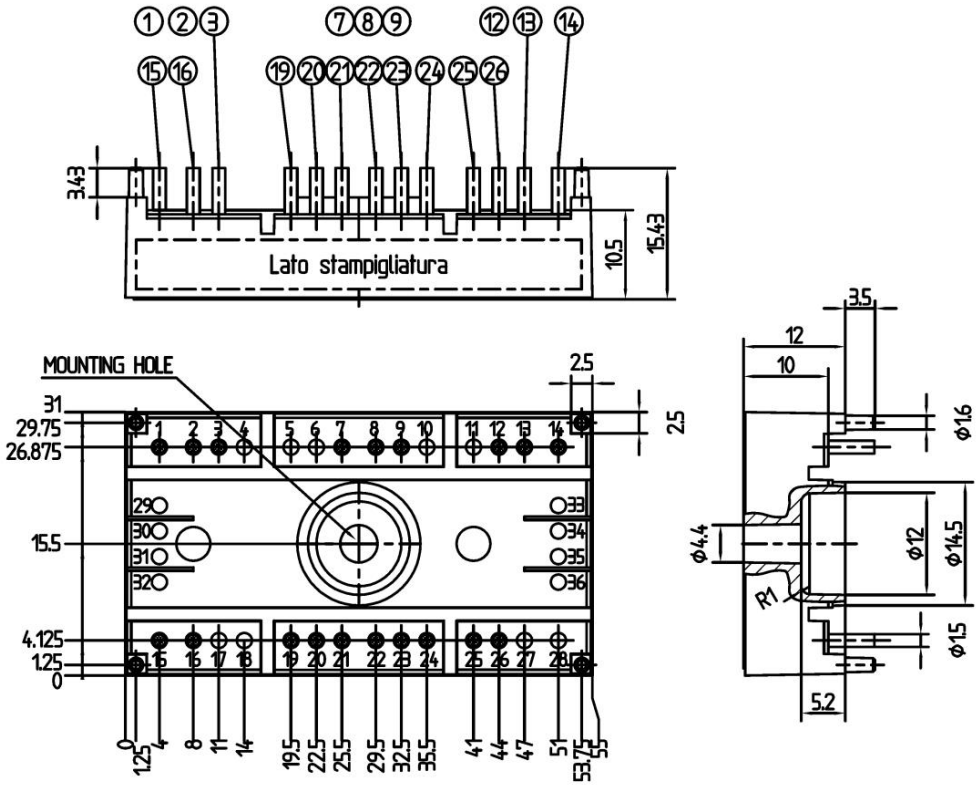


GD-ET

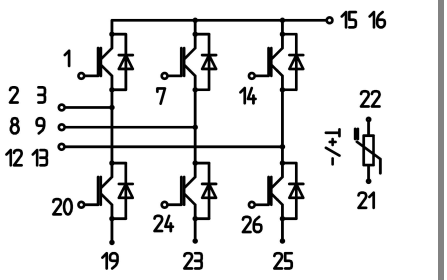
Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 50 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,5		V
		T_j = 150 °$C_{chiplev.}$		1,5		V
V_{F0}		T_j = 25 °C		1	1,1	V
		T_j = 150 °C		0,9	1	V
r_F		T_j = 25 °C		10	12	mΩ
		T_j = 150 °C		12	14	mΩ
I_{RRM}	I_{Fnom} = 50 A	T_j = 150 °C				A
Q_{rr}						µC
E_{rr}	V_{CC}= 300V					mJ
$R_{th(j-s)D}$	per diode			1,7		K/W
M_s	to heat sink		2,25		2,5	Nm
w				30		g
Temperature sensor						
R_{100}	T_s =100°C (R_{25}=5kΩ)			493±5%		Ω

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.



Case T52 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 52 GD-ET

