

SK35GD065ET



SEMITOP® 3

IGBT Module

SK35GD065ET

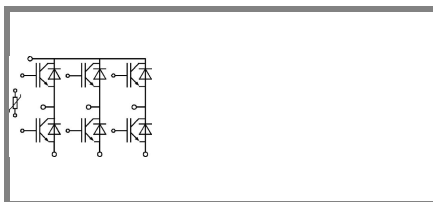
Preliminary Data

Features

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

Typical Applications

- Inverter

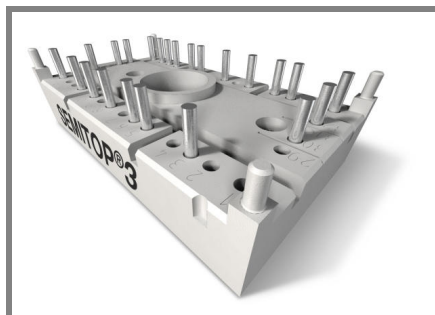


GD-ET

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	Values			Units
IGBT					
V_{CES}	$T_j = 25\text{ °C}$	600			V
I_C	$T_j = 125\text{ °C}$	$T_s = 25\text{ °C}$	45		A
		$T_s = 80\text{ °C}$	33		A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	100			A
V_{GES}		± 20			V
t_{psc}	$V_{CC} = 300\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125\text{ °C}$ $V_{CES} < 600\text{ V}$	10			µs
Inverse Diode					
I_F	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$	36		A
		$T_s = 80\text{ °C}$	24		A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	70			A
Module					
$I_{t(RMS)}$					A
T_{vj}		-40 ... +150			°C
T_{stg}		-40 ... +125			°C
V_{isol}	AC, 1 min.	2500			V

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 1\text{ mA}$	3	4	5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$			mA
		$T_j = 125\text{ °C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$	$T_j = 25\text{ °C}$			nA
		$T_j = 125\text{ °C}$	120		nA
V_{CE0}		$T_j = 25\text{ °C}$	1,2	1,3	V
		$T_j = 125\text{ °C}$	1,1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	16	24	mΩ
		$T_j = 125\text{ °C}$	22	30	mΩ
$V_{CE(sat)}$	$I_{Cnom} = 50\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	2	2,5	V
		$T_j = 125\text{ °C}_{chiplev.}$	2,2		V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	2,7		nF
C_{oes}			0,25		nF
C_{res}			0,153		nF
$t_{d(on)}$	$R_{Gon} = 15\text{ } \Omega$	$V_{CC} = 300\text{ V}$ $I_C = 50\text{ A}$	35		ns
t_r			35		ns
E_{on}			1,3		mJ
$t_{d(off)}$	$R_{Goff} = 15\text{ } \Omega$	$T_j = 125\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	240		ns
t_f			25		ns
E_{off}			0,6		mJ
$R_{th(j-s)}$	per IGBT	1			K/W

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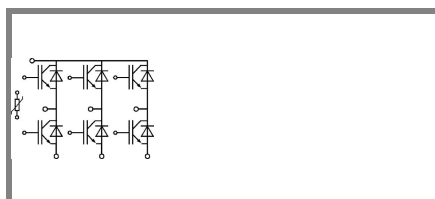
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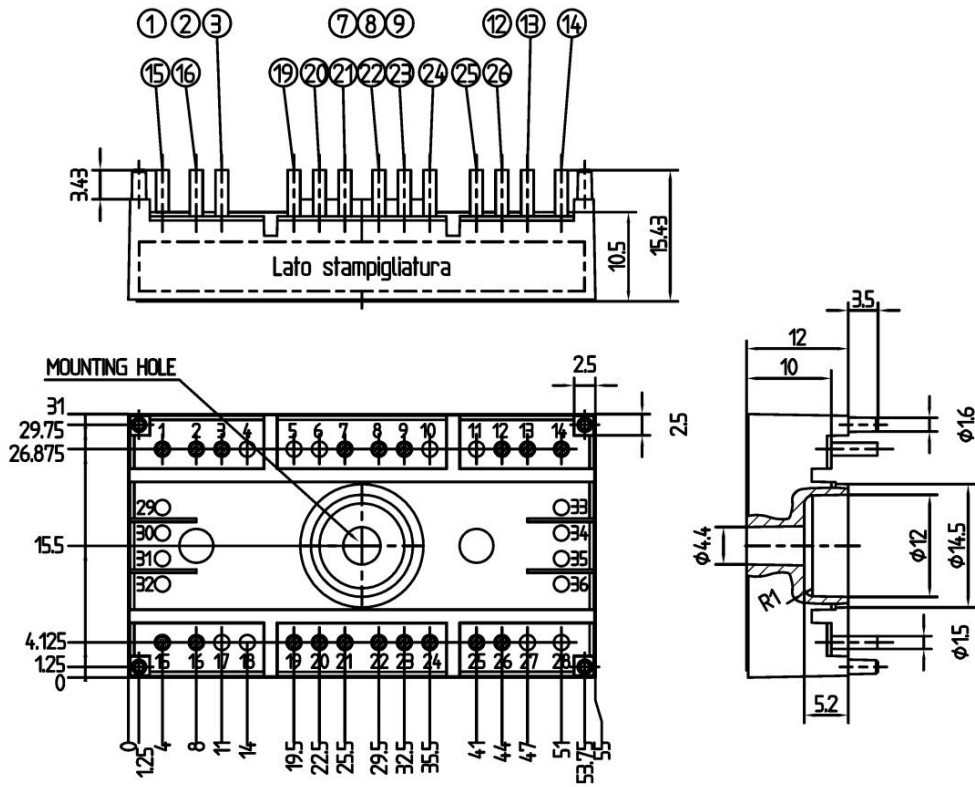


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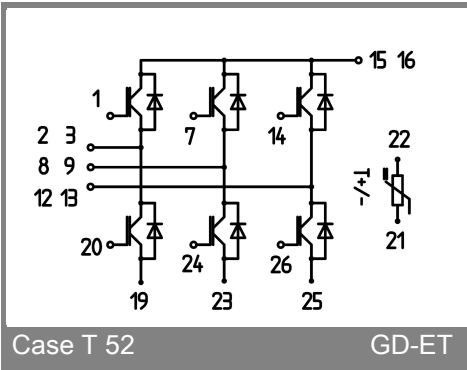
Characteristics			min.	typ.	max.	Units
Symbol	Conditions					
Inverse Diode						
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,9	2,3	V
		$T_j = 125 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,9	2,4	V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$		1	1,1	V
		$T_j = 125 \text{ }^\circ\text{C}$		0,9		V
r_F		$T_j = 25 \text{ }^\circ\text{C}$		18	24	m Ω
		$T_j = 125 \text{ }^\circ\text{C}$		20	28	m Ω
I_{RRM}	$I_F = 50 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$		57		A
Q_{rr}	$di/dt = -2400 \text{ A}/\mu\text{s}$			4,6		μC
E_{rr}	$V_{CC} = 300\text{V}$			0,9		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}	$T_s = 100^\circ\text{C} (R_{25} = 5\text{k}\Omega)$			493 \pm 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