

SEMITOP® 3

IGBT Module

SK35GD065ET

Preliminary Data

Features

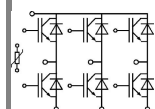
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Ultrafast NPT technology IGBT
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications*

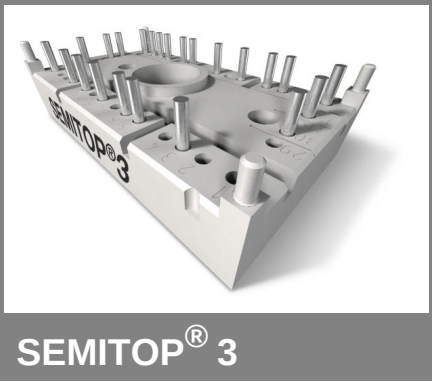
- Inverter

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	$^{\circ}\text{C}$
T_{stg}		-40 ... +125	$^{\circ}\text{C}$
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}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			120	$T_j = 25\text{ °C}$ nA
					$T_j = 125\text{ °C}$ nA
V_{CE0}			1,2	1,3	$T_j = 25\text{ °C}$ V
					$T_j = 125\text{ °C}$ V
r_{CE}	$V_{GE} = 15\text{ V}$		16	24	$T_j = 25\text{ °C}$ m Ω
					$T_j = 125\text{ °C}$ m Ω
$V_{CE(sat)}$	$I_{Cnom} = 50\text{ A}$, $V_{GE} = 15\text{ V}$		2	2,5	$T_j = 25\text{ °C}_{chiplev.}$ V
					$T_j = 125\text{ °C}_{chiplev.}$ V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$		2,7		nF
C_{oes}					0,25 nF
C_{res}					0,153 nF
$t_{d(on)}$	$R_{Gon} = 15\text{ }\Omega$		35		ns
t_r					ns
E_{on}	$R_{Goff} = 15\text{ }\Omega$		1,3		mJ
$t_{d(off)}$					ns
t_f					ns
E_{off}					mJ
$R_{th(j-s)}$	per IGBT			1	K/W



GD-ET



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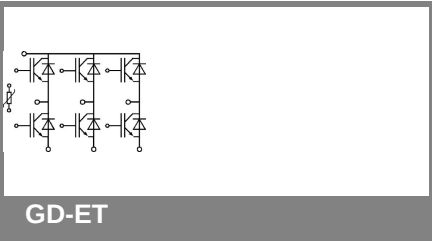
Preliminary Data

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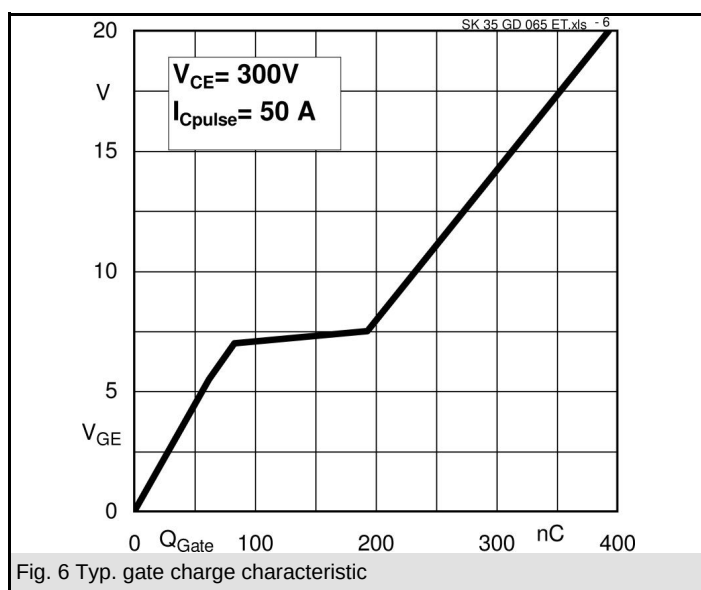
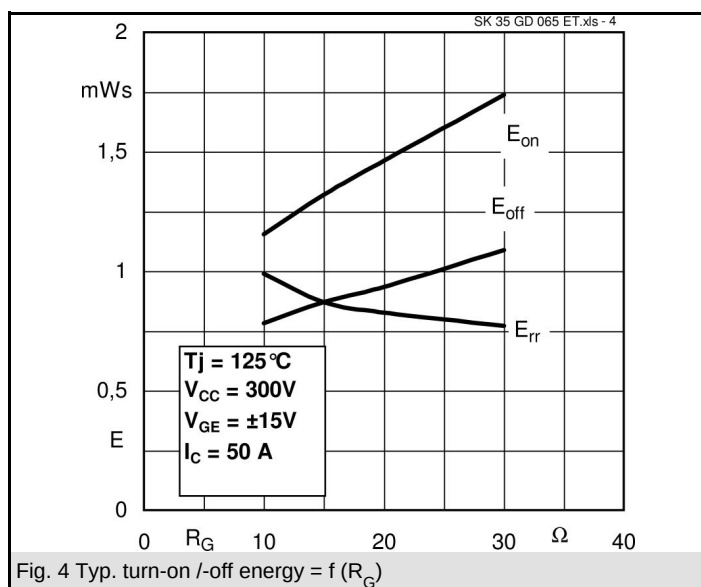
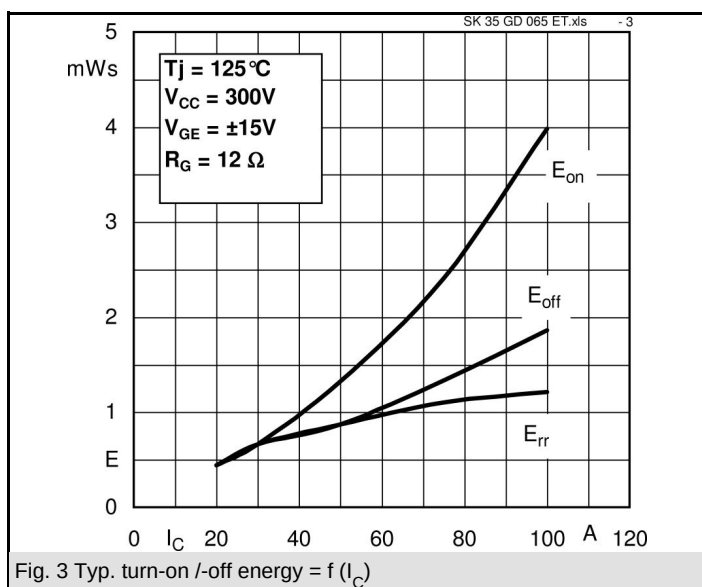
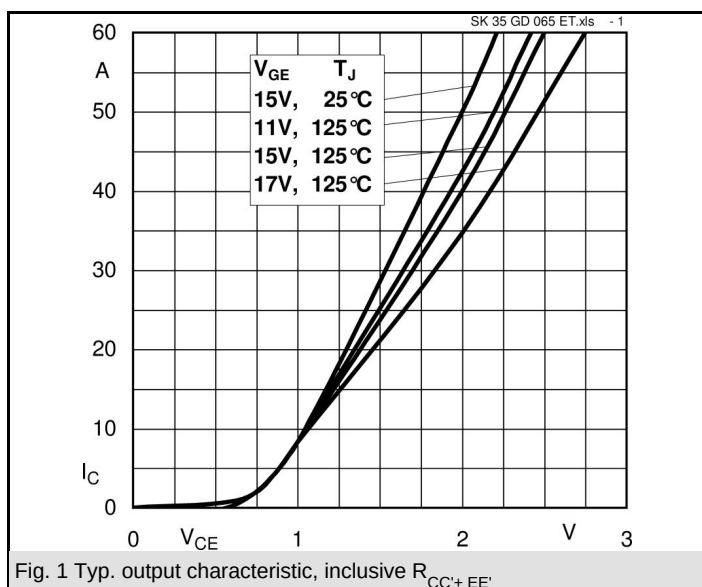
- Inverter

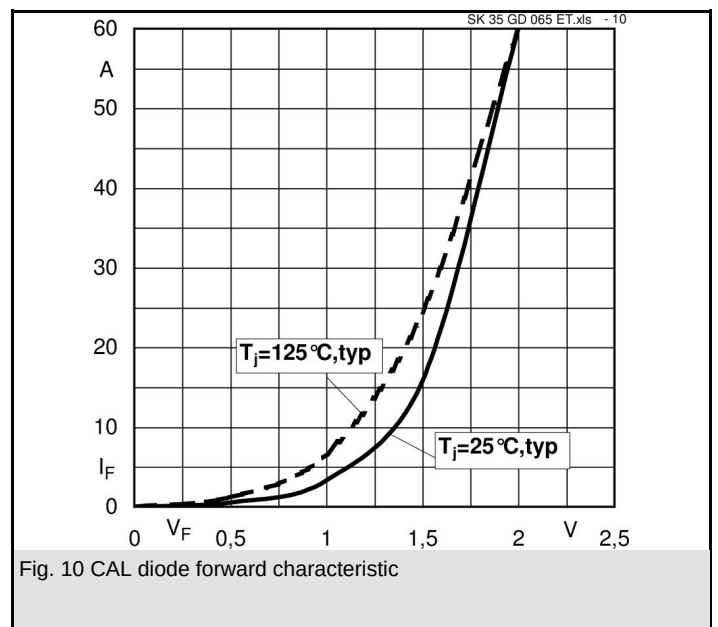
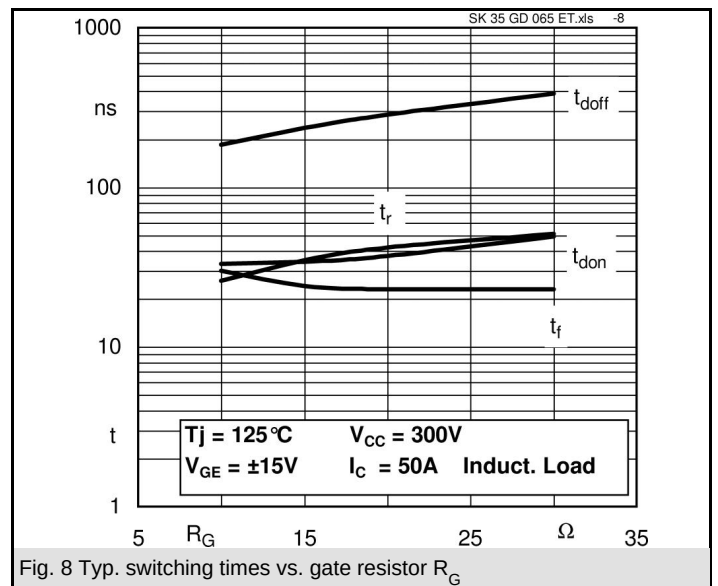
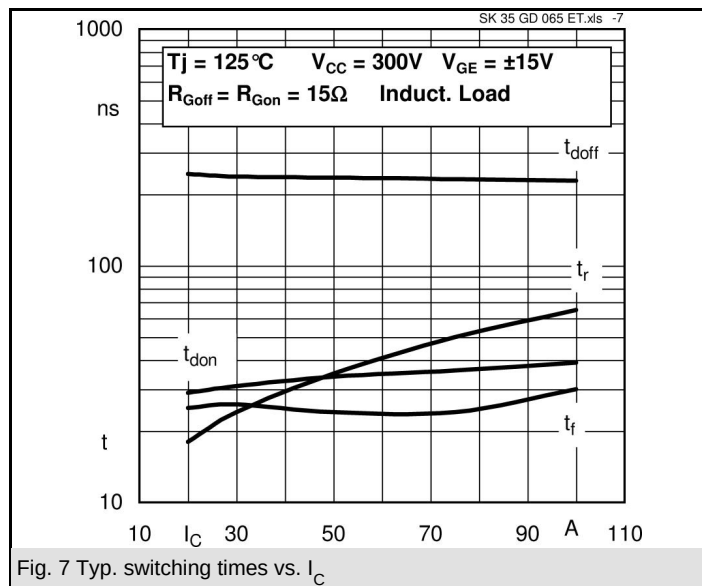


Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 50 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,9	2,3	V
		T _j = 125 °C _{chiplev.}		1,9	2,4	V
V _{F0}		T _j = 25 °C		1	1,1	V
		T _j = 125 °C		0,9		V
r _F		T _j = 25 °C		18	24	mΩ
		T _j = 125 °C		20	28	mΩ
I _{RRM}	I _F = 50 A	T _j = 125 °C		57		A
Q _{rr}	di/dt = -2400 A/μs			4,6		μC
E _{rr}	V _{CC} = 300V			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°C (R ₂₅ =5kΩ)			493±5%		Ω

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

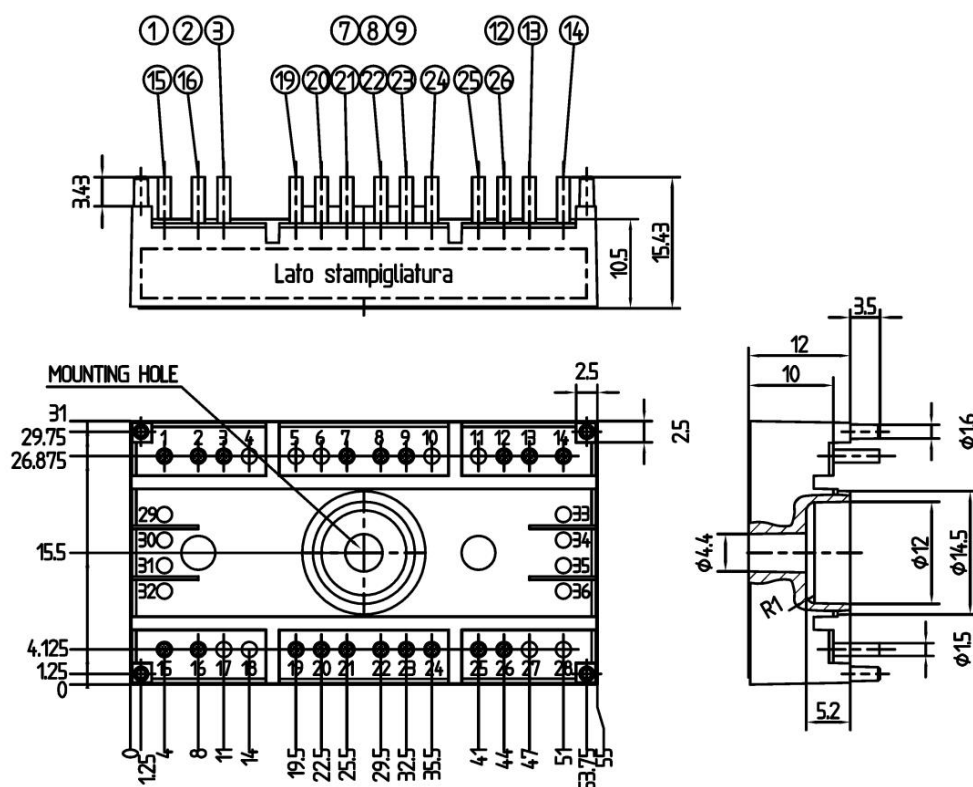
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and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



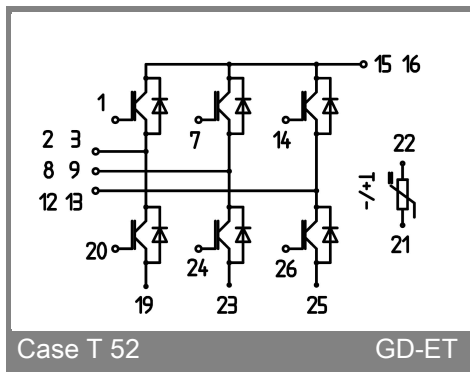


UL recognized file

no. E 63 532



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



Case T 52

GD-ET