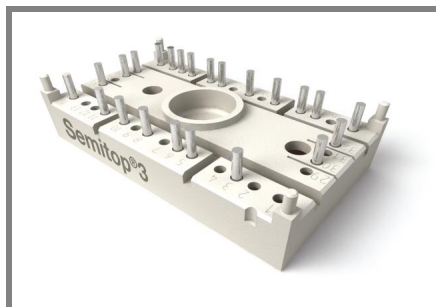


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SEMITOP® 3

IGBT Module

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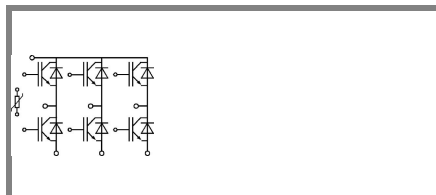
Preliminary Data

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

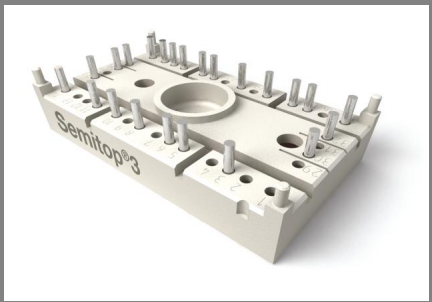


GD-ET

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V _{CES}	T _j = 25 °C		600	V
I _C	T _j = 125 °C	T _s = 25 °C	26	A
		T _s = 80 °C	18	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}		40	A
V _{GES}			± 20	V
t _{psc}	V _{CC} = 300 V; V _{GE} ≤ 20 V; T _j = 125 °C V _{CES} < 600 V		10	µs
Inverse Diode				
I _F	T _j = 150 °C	T _s = 25 °C	27	A
		T _s = 80 °C	19	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}		50	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 = 0,5 mA	3	4	5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _j = 25 °C T _j = 125 °C			0,07	mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V T _j = 25 °C T _j = 125 °C			120	nA nA
V _{CE0}			1,2 T _j = 125 °C 1,1	1,3 0,9	V V
r _{CE}	V _{GE} = 15 V T _j = 25°C T _j = 125°C		40 55	60	mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 15 A, V _{GE} = 15 V T _j = 25°C _{chiplev.} T _j = 125°C _{chiplev.}		2 2,2	2,5	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz		1,1 0,107 0,063		nF nF nF
t _{d(on)} t _r E _{on}	R _{Gon} = 50 Ω	V _{CC} = 300V I _{Cnom} = 20A	0,6		ns ns mJ
t _{d(off)} t _f E _{off}	R _{Goff} = 50 Ω	T _j = 125 °C V _{GE} =±15V			ns ns mJ
R _{th(j-s)}	per IGBT			1,7	K/W

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IGBT Module

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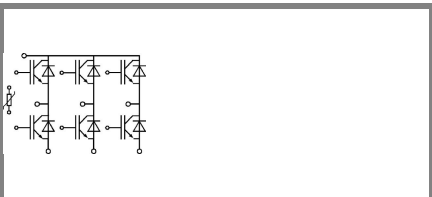
Preliminary Data

Features

- Compact design
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- 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

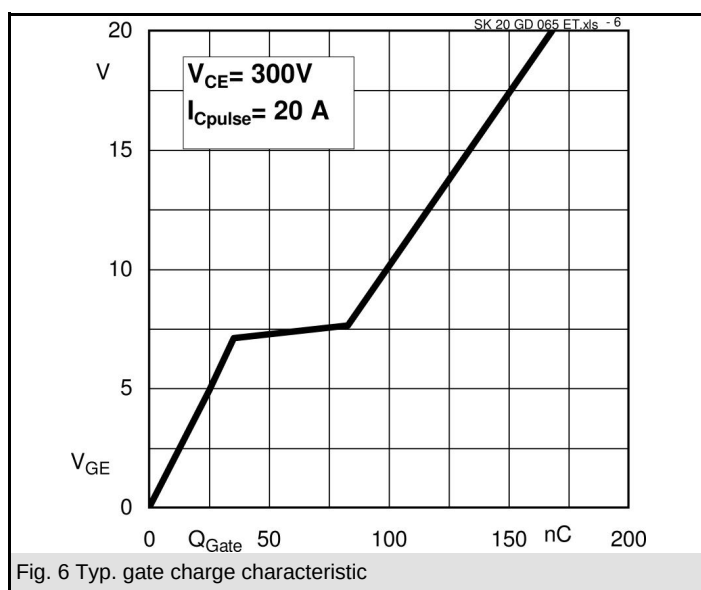
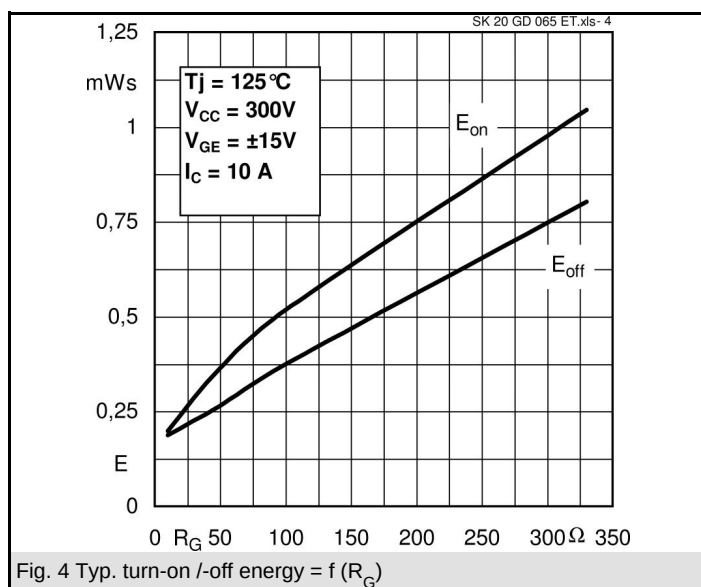
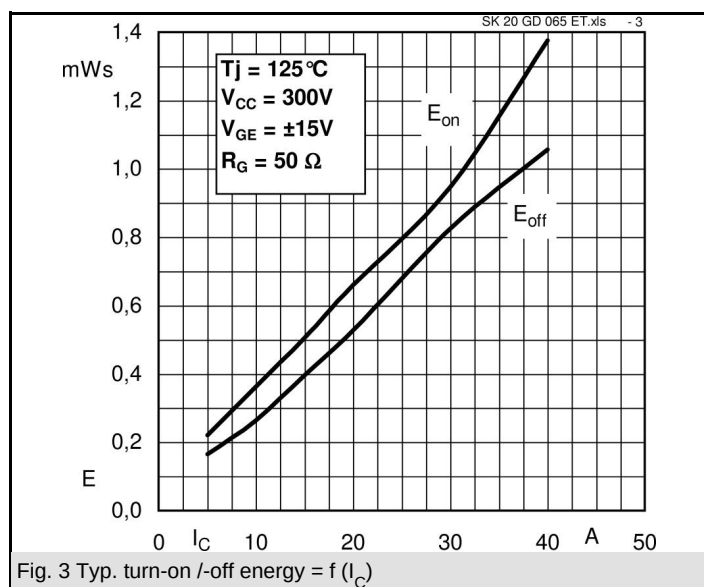
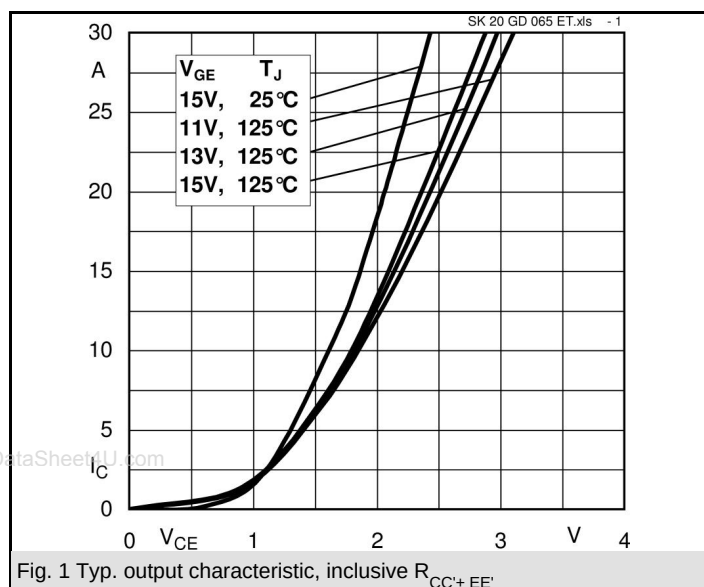


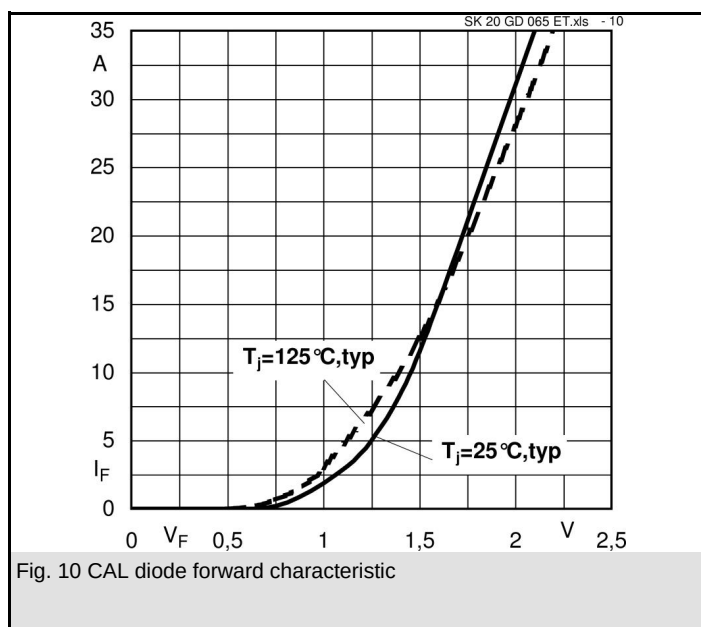
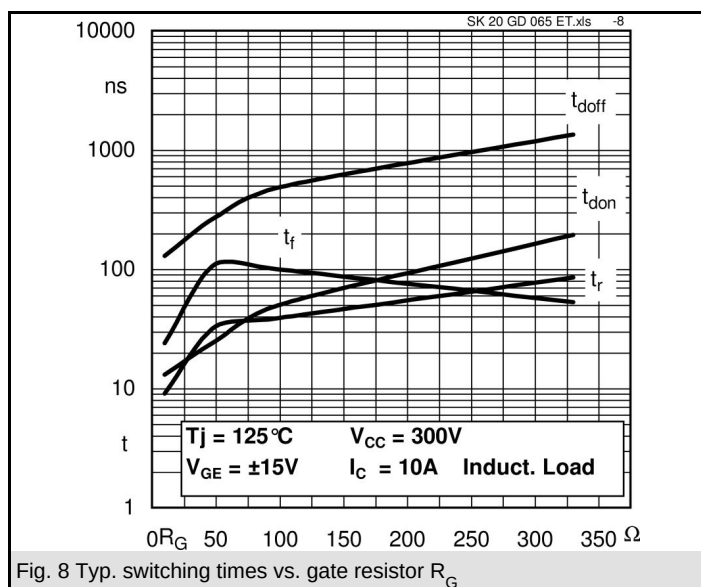
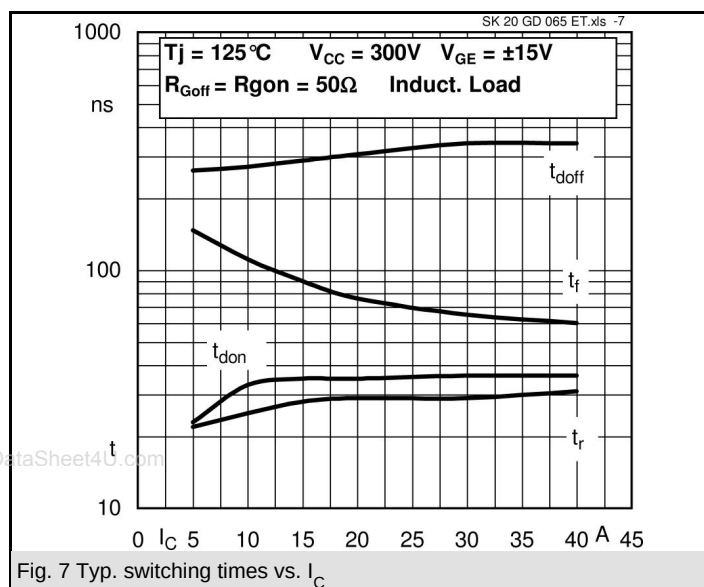
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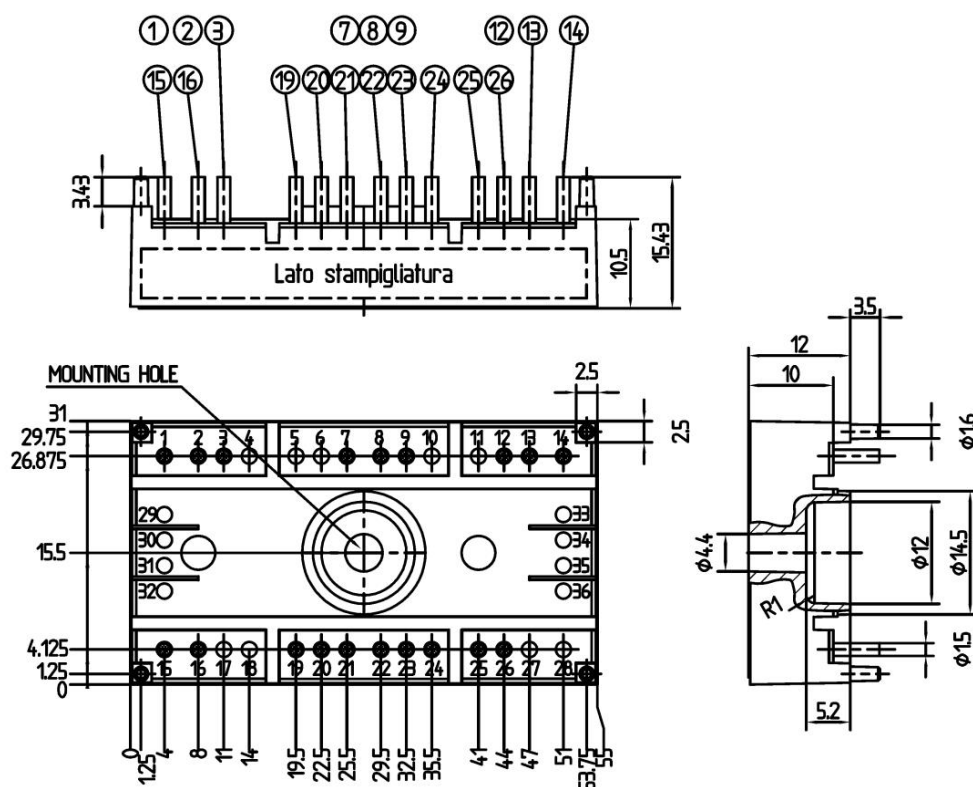
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 20 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,6		V
		T _j = 125 °C _{chiplev.}		1,6		V
V _{F0}		T _j = 25 °C		1		V
		T _j = 125 °C		0,9		V
r _F		T _j = 25 °C				mΩ
		T _j = 125 °C		52		mΩ
I _{RRM}	I _{Fnom} = A	T _j = 125 °C				A
Q _{rr}						μC
E _{rr}	V _{CC} = 300V					mJ
R _{th(j-s)D}	per diode				1,9	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.

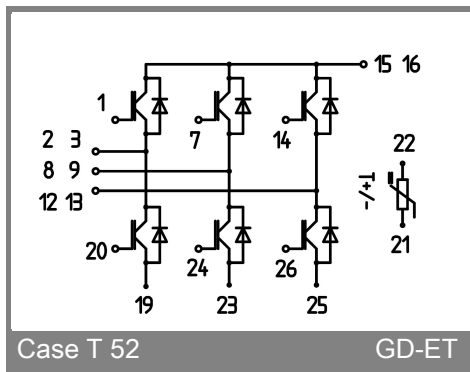
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Case T52 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 52

GD-ET