



SEMITOP® 2

IGBT Module

SK20GH065

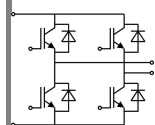
Target Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N-channel homogeneous Silicon structure (NPT-NonPunchThrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no E63532

Typical Applications

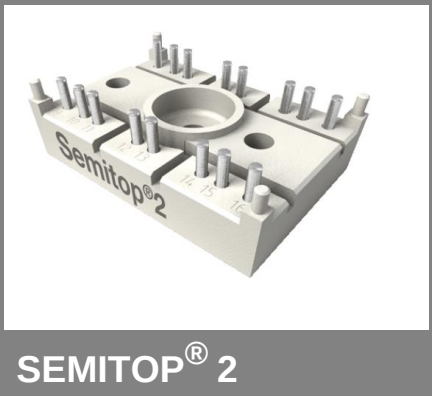
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS



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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	24	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 = 125 °C	T _s = 25 °C	25	A
		T _s = 80 °C	18	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}	40	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				0,07	mA	
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V T _J = 25 °C				120	nA	
V _{CE0}	T _J = 25 °C T _J = 125 °C			1 1,1		V V	
r _{CE}	V _{GE} = 15 V T _J = 25°C T _J = 125°C			55		mΩ mΩ	
V _{CE(sat)}	I _{Cnom} = 20 A, V _{GE} = 15 V T _J = 25°C _{chiplev.} T _J = 125°C _{chiplev.}			2 2,2		V V	
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz			1,1		nF	
C _{oes}				0,107		nF	
C _{res}				0,063		nF	
t _{d(on)} t _r E _{on}	R _{Gon} = 30 Ω	V _{CC} = 300V I _{Cnom} = 20A T _J = 125 °C V _{GE} =±15V		21 28 0,6		ns ns mJ	
t _{d(off)} t _f E _{off}			R _{Goff} = 30 Ω		170 20 0,4		ns ns mJ
R _{th(j-s)}	per IGBT					1,7	K/W



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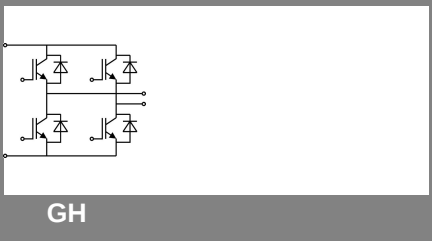
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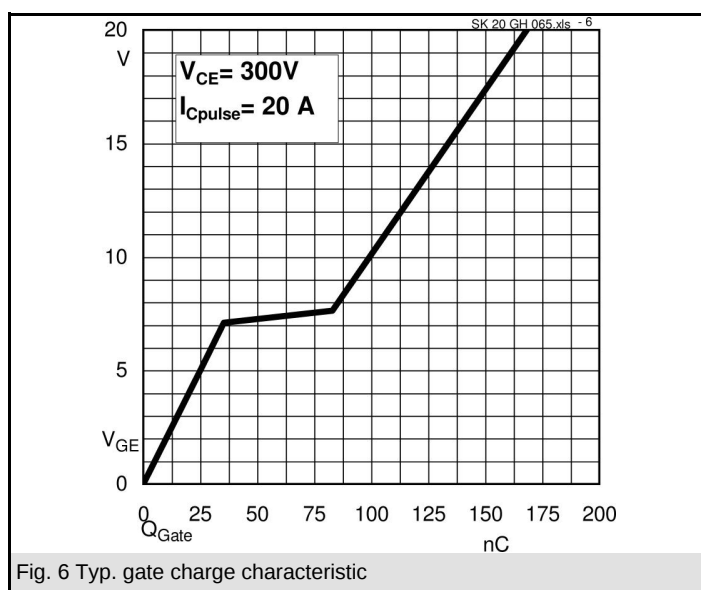
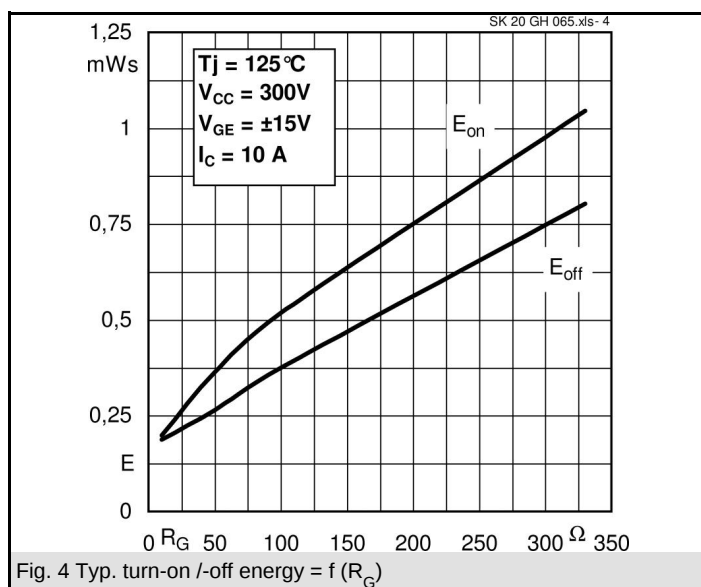
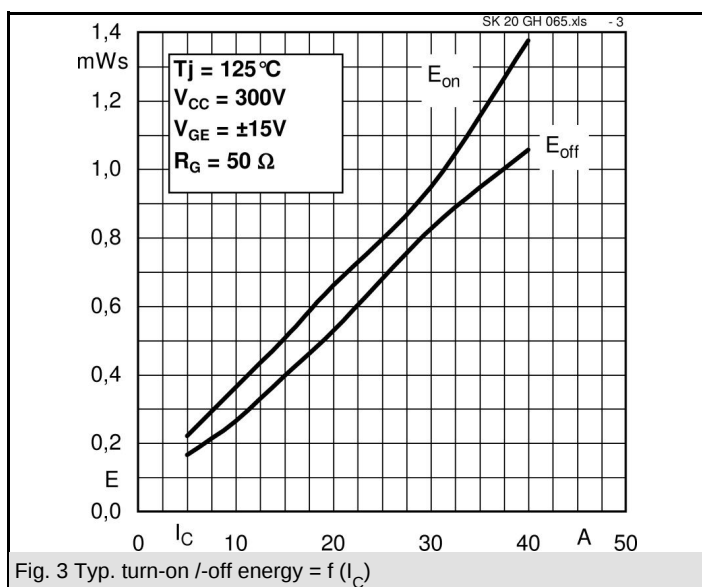
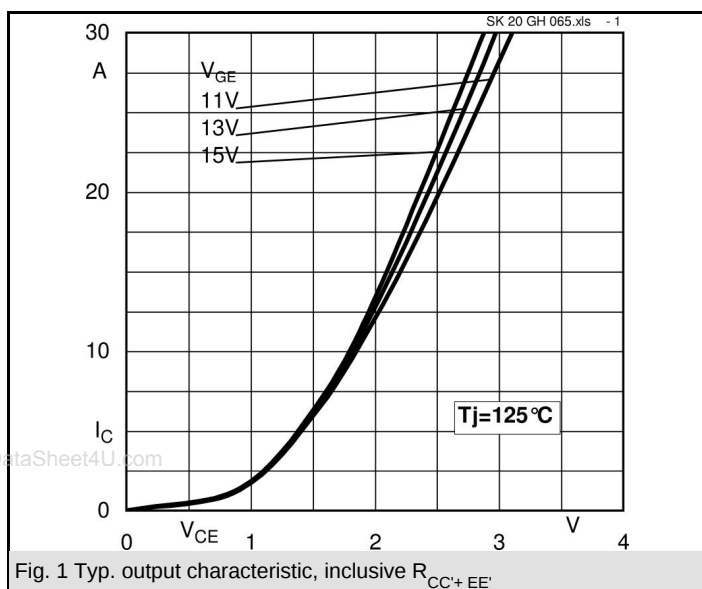
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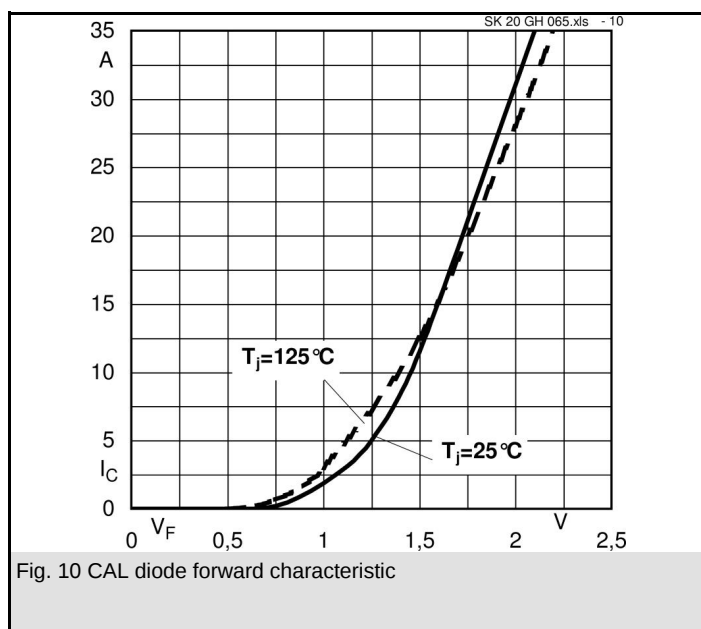
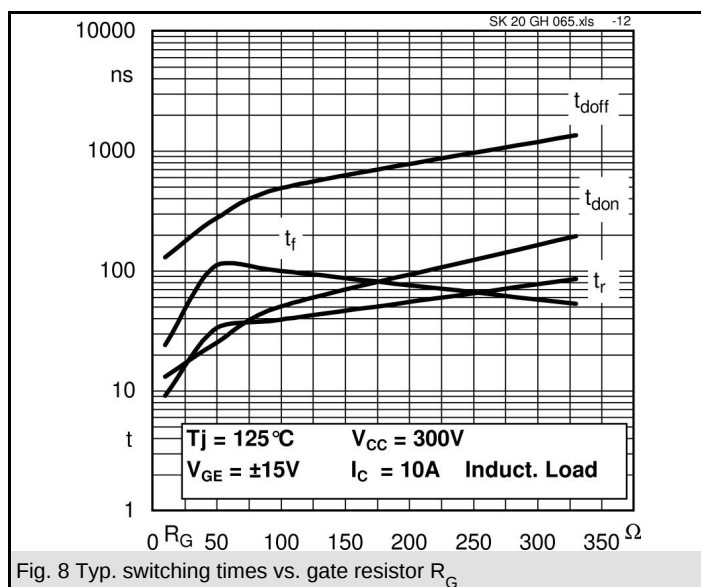
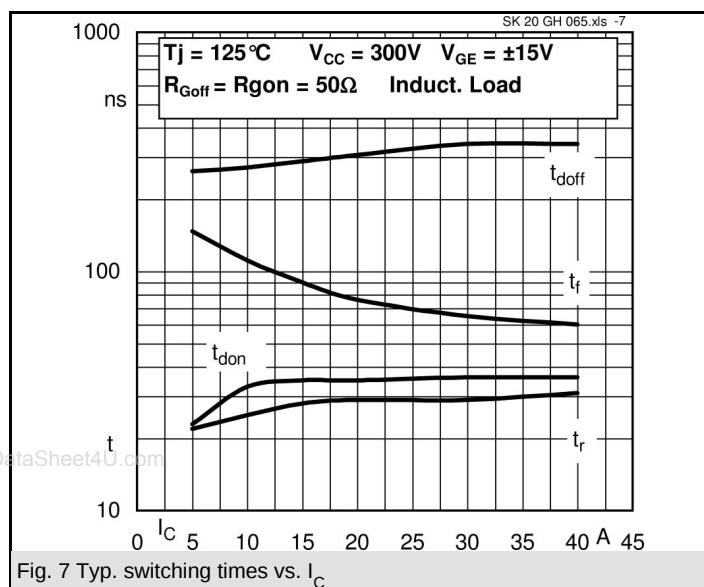


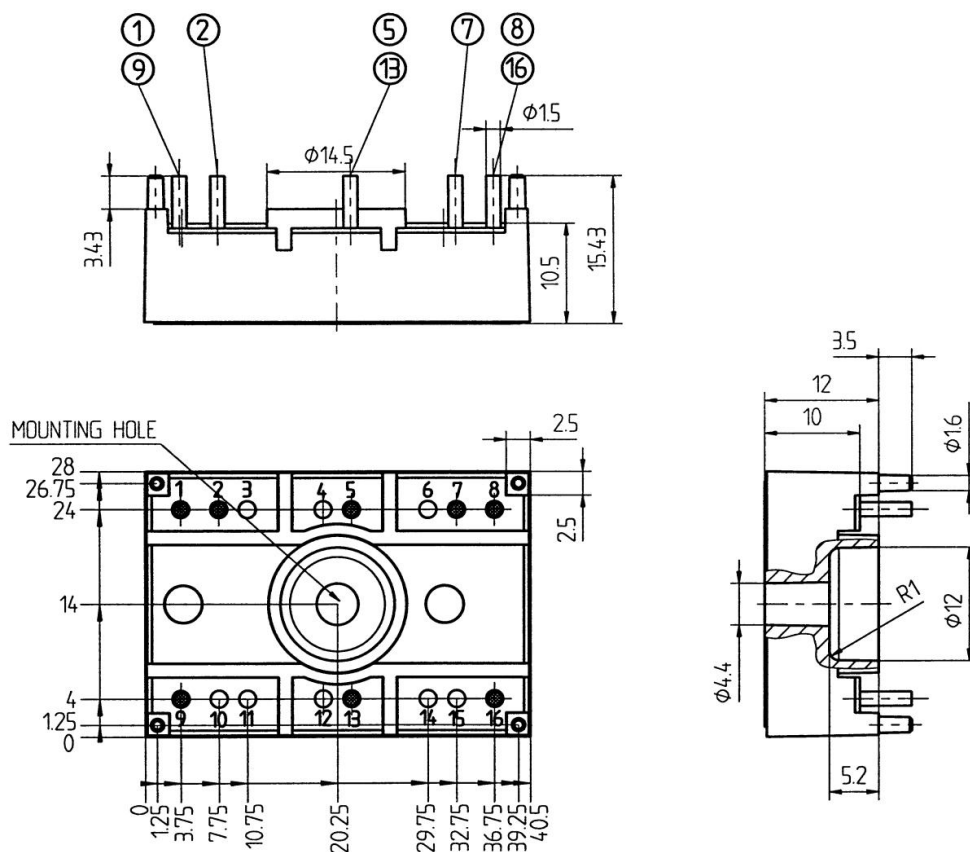
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 20 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,6		V
		T _j = 125 °C _{chiplev.}		1,6		V
V _{F0}		T _j = 25 °C				V
		T _j = 125 °C		0,9		V
r _F		T _j = 25 °C		30		mΩ
		T _j = 125 °C		33		mΩ
I _{RRM}	I _{Fnom} = A	T _j = 125 °C				A
Q _{rr}	V _R = 300V					μC
E _{rr}						mJ
R _{th(j-s)D}	per diode				1,7	K/W
M _s	to heat sink				2	Nm
w				19		g

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

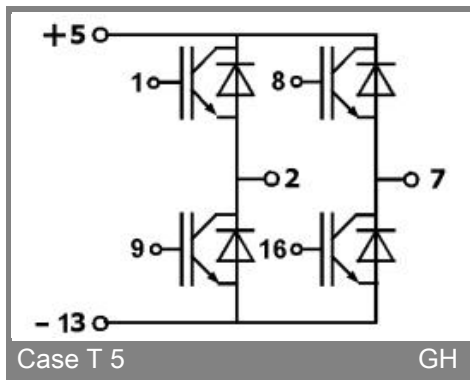
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Case T5 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 5

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