



SEMITOP[®] 2

IGBT Module

SK15GH063

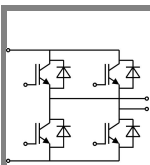
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punchthrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E63 532

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	20	A
		T _s = 80 °C	14	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}		30	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	20	A
		T _s = 80 °C	15	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}		28	A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C		100	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					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 0,4\text{ mA}$	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$			$T_j = 25\text{ °C}$	0,05
				$T_j = 125\text{ °C}$	mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			$T_j = 25\text{ °C}$	120
				$T_j = 125\text{ °C}$	nA
V_{CE0}				$T_j = 25\text{ °C}$	1,2
				$T_j = 125\text{ °C}$	V
r_{CE}	$V_{GE} = 15\text{ V}$			$T_j = 25\text{ °C}$	53
				$T_j = 125\text{ °C}$	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 15\text{ A}$, $V_{GE} = 15\text{ V}$			$T_j = 25\text{ °C}_{chipleve.}$	2
				$T_j = 125\text{ °C}_{chipleve.}$	2,5
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$			$f = 1\text{ MHz}$	0,8
C_{oes}					nF
C_{res}					0,06
$t_{d(on)}$	$R_{Gon} = 68\text{ }\Omega$			$V_{CC} = 300\text{ V}$ $I_C = 15\text{ A}$	35
t_r					50
E_{on}	$R_{Goff} = 68\text{ }\Omega$			$T_j = 125\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	0,71
$t_{d(off)}$					250
t_f					20
E_{off}					0,4
$R_{th(j-s)}$	per IGBT				1,9
					K/W



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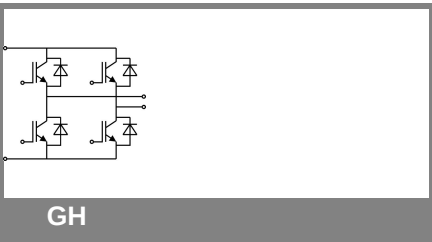
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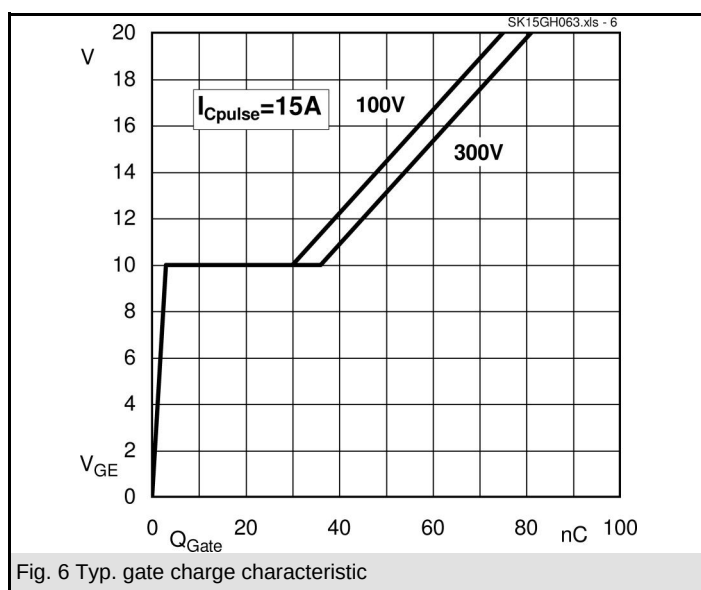
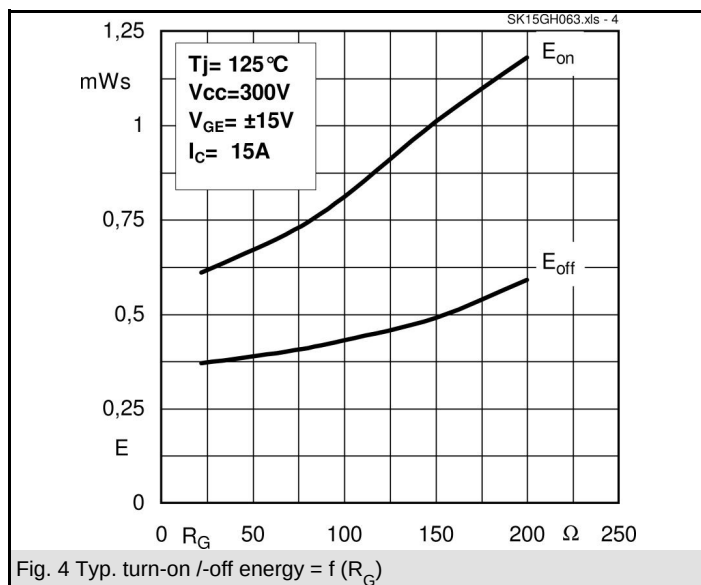
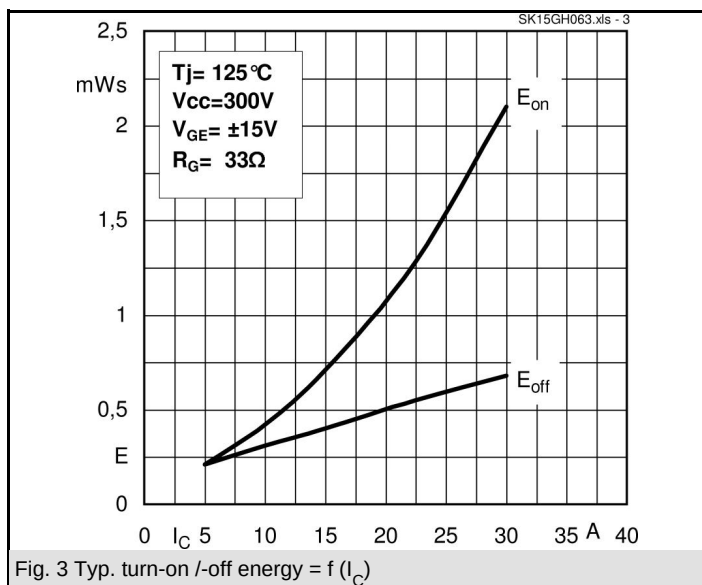
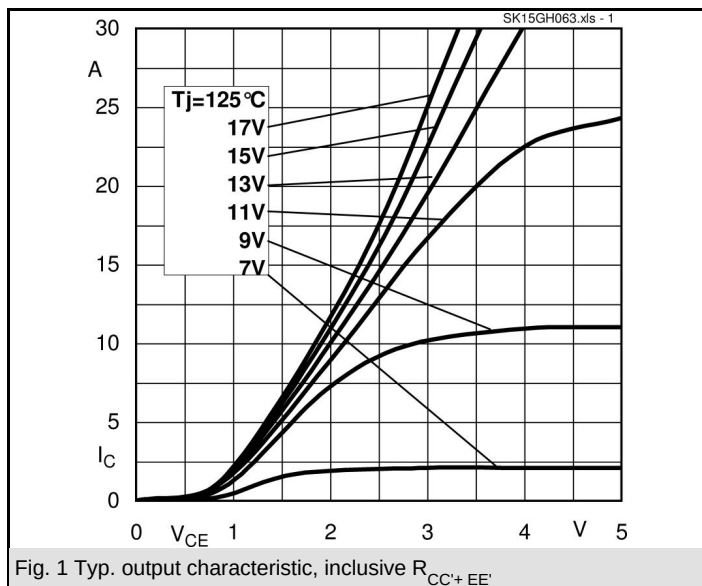
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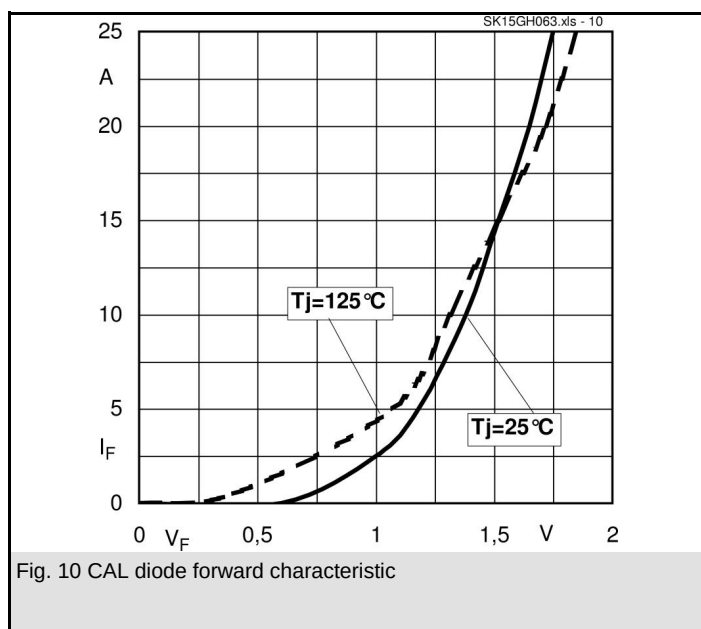
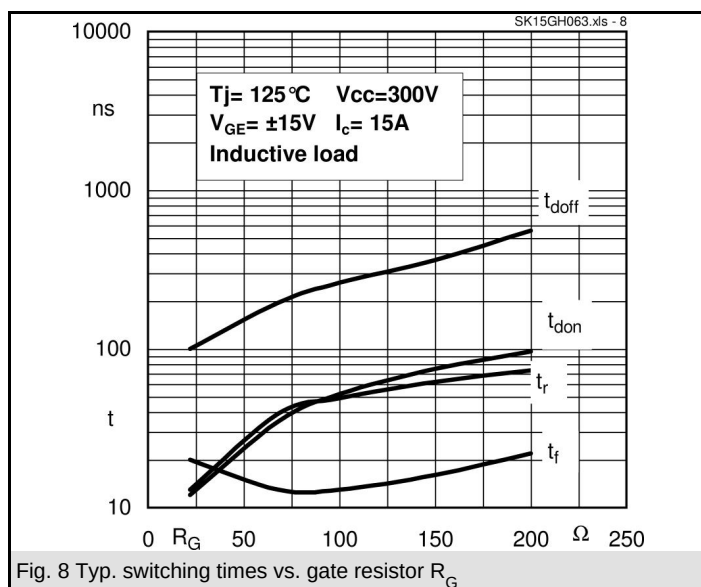
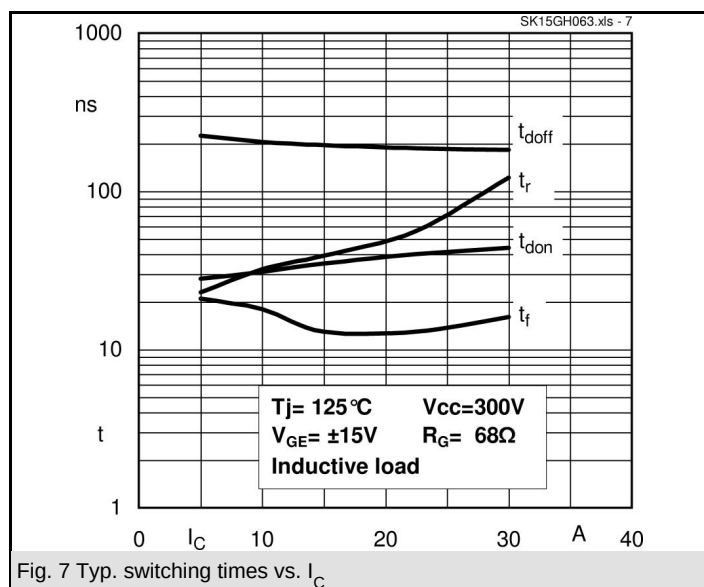


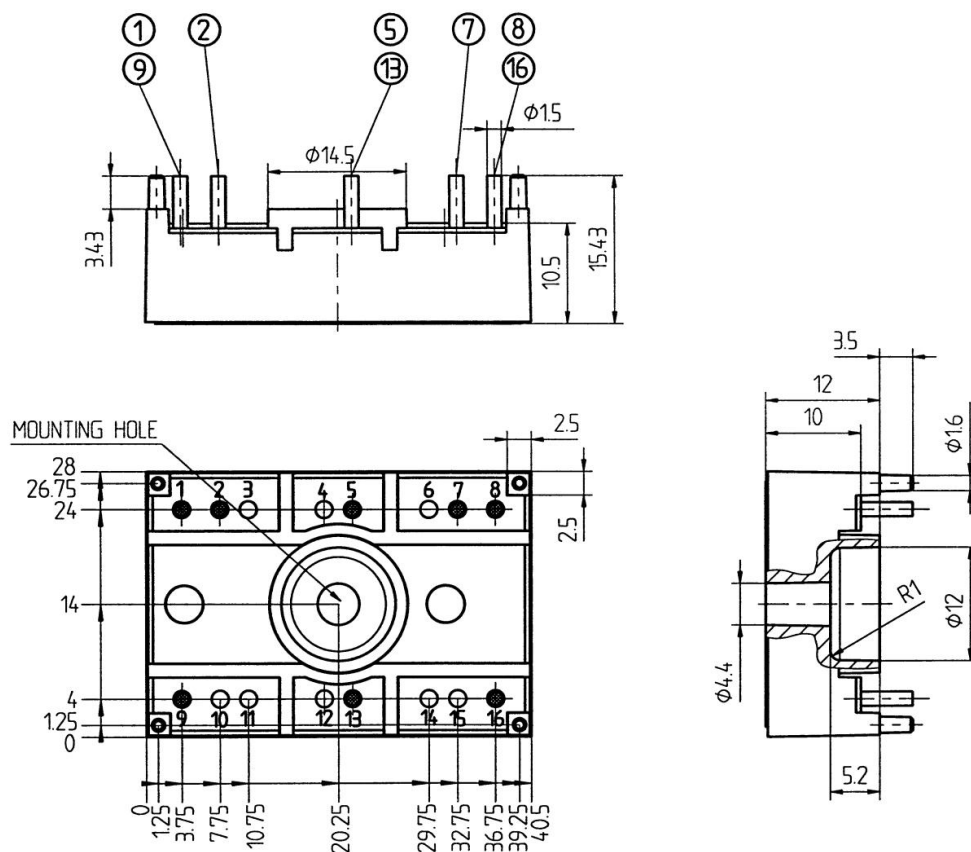
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 10 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,45	1,7	V
		T _j = 125 °C _{chiplev.}		1,4	1,7	V
V _{F0}		T _j = 125 °C		0,85	0,9	V
r _F		T _j = 125 °C		55	80	mΩ
I _{RRM}	I _F = 10 A di/dt = -200 A/μs V _{CC} = 300V	T _j = 125 °C		13		A
Q _{rr}				1,5		μC
E _{rr}				0,45		mJ
R _{th(j-s)D}	per diode				1,2	K/W
M _s	to heat sink M1				2	Nm
w				19		g

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

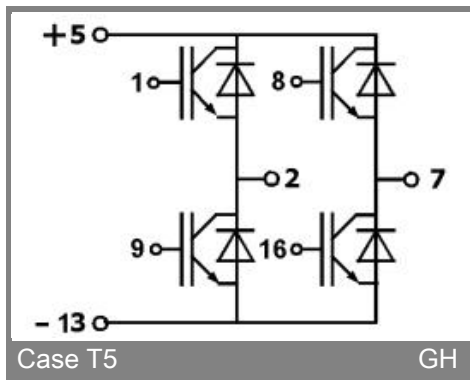
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Case T5 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T5

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