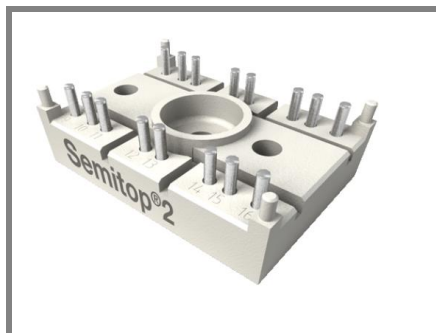


SK70GAL063



SEMITOP® 2

IGBT Module

SK70GAL063

SK70GAR063

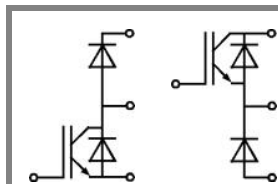
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High short circuit capability
- Low tail current with low temperature dependence

Typical Applications

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

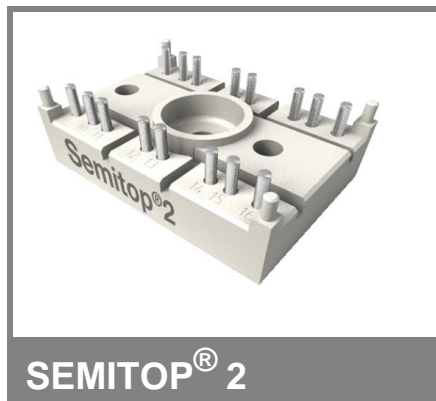


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Absolute Maximum Ratings				$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions			Values	Units
IGBT					
V_{CES}	$T_j = 25\text{ °C}$			600	V
I_C	$T_j = 125\text{ °C}$	$T_s = 25\text{ °C}$		81	A
		$T_s = 80\text{ °C}$		57	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$			200	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	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$		22	A
		$T_s = 80\text{ °C}$		15	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$			28	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ °C}$			100	A
Freewheeling Diode					
I_F	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$		79	A
		$T_s = 80\text{ °C}$		53	A
I_{FRM}				150	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ °C}$			720	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 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 1,5 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C T _j = 125 °C			0,3	mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 30 V	T _j = 25 °C T _j = 125 °C			300	nA 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		11 9		mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 100 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.} T _j = 125°C _{chiplev.}		2,1 2	2,5 2,3	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		4,3 0,4		nF nF nF
Q _G	V _{GE} = 0 ... 20 V			310		nC
t _{d(on)} t _r E _{on}	R _{Gon} = 10 Ω	V _{CC} = 300V I _{Cnom} = 100A		50 40 4		ns ns mJ
t _{d(off)} t _f E _{off}	R _{Goff} = 10 Ω	T _j = 125 °C V _{GE} =±15V		300 35 3		ns ns mJ
R _{th(j-s)}	per IGBT				0,6	K/W



IGBT Module

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SK70GAR063

Preliminary Data

Features

- Compact design
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- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High short circuit capability
- Low tail current with low temperature dependence

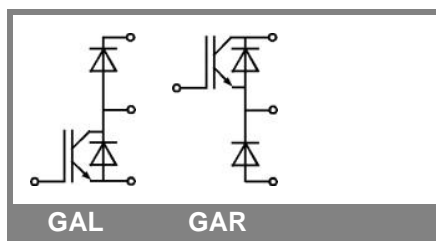
Typical Applications

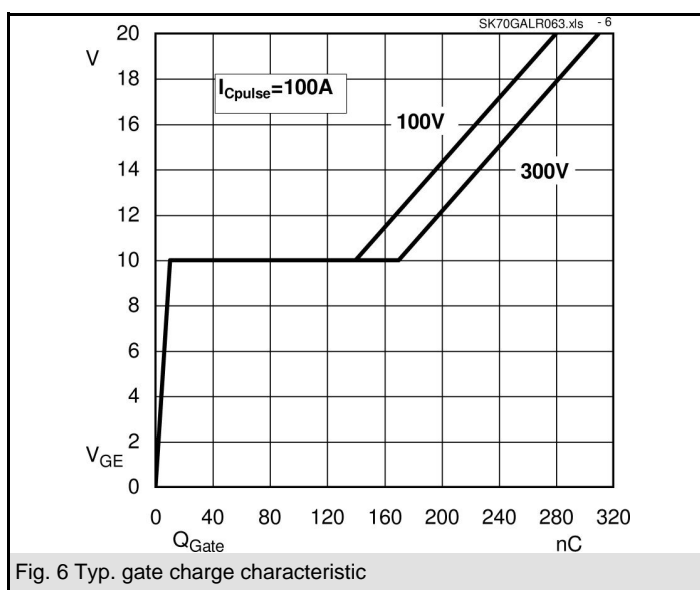
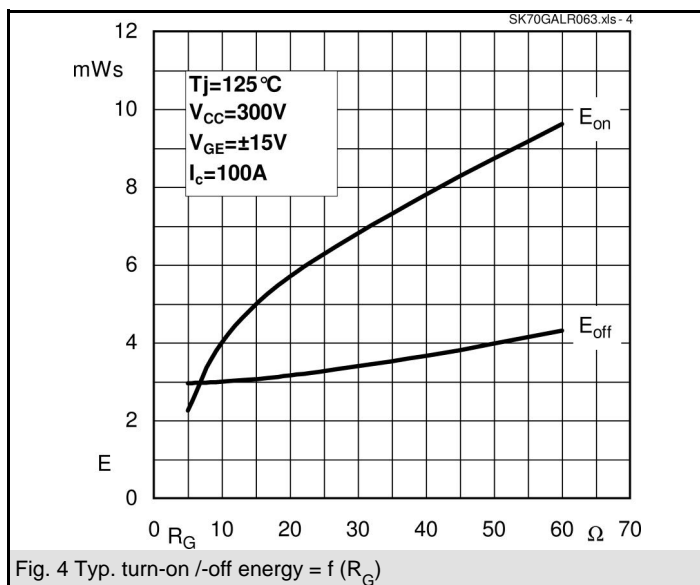
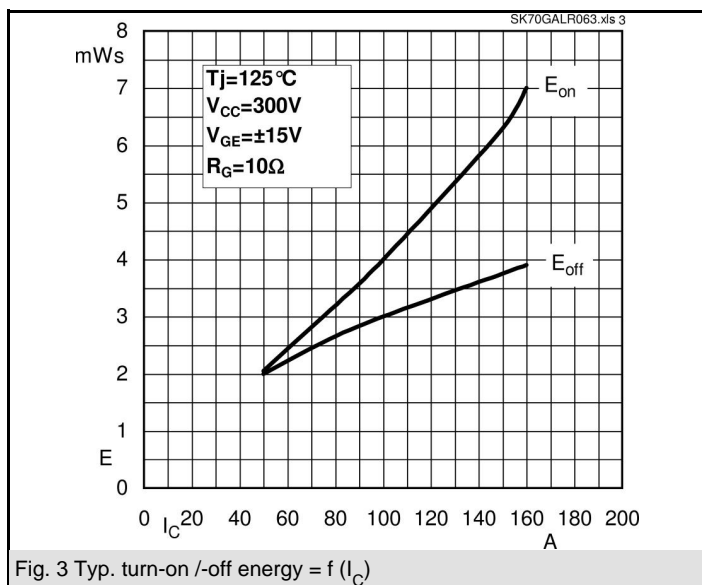
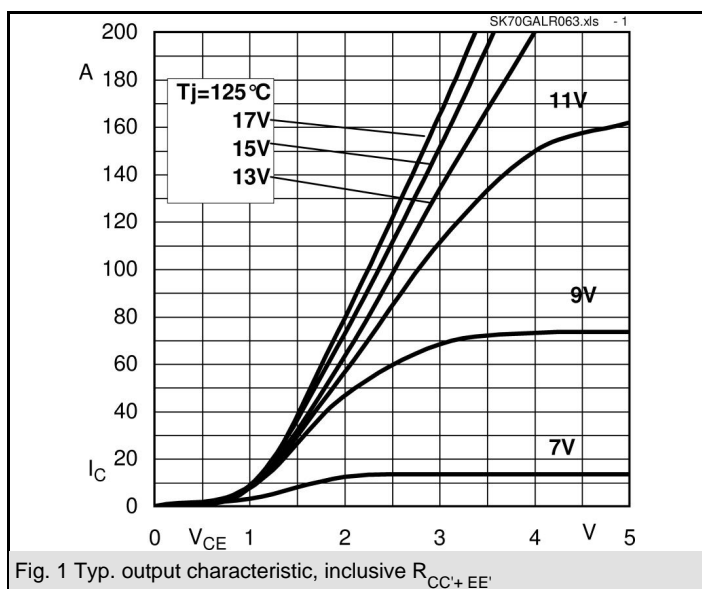
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

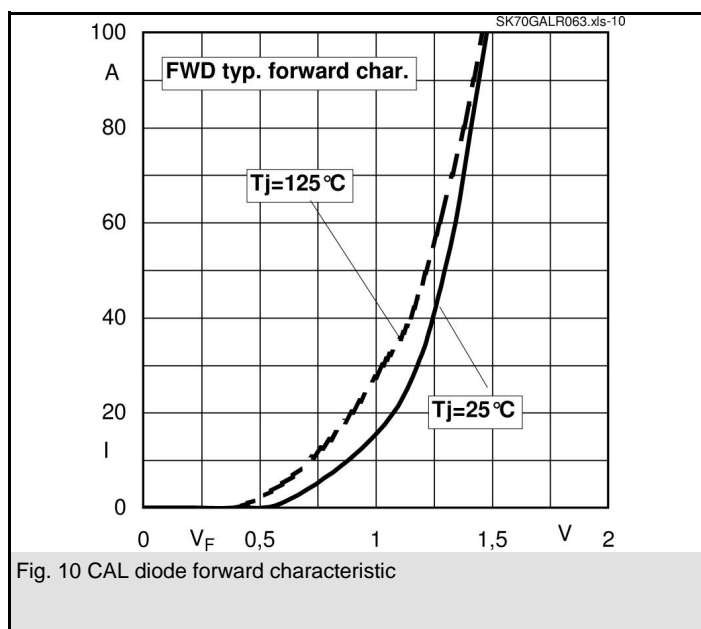
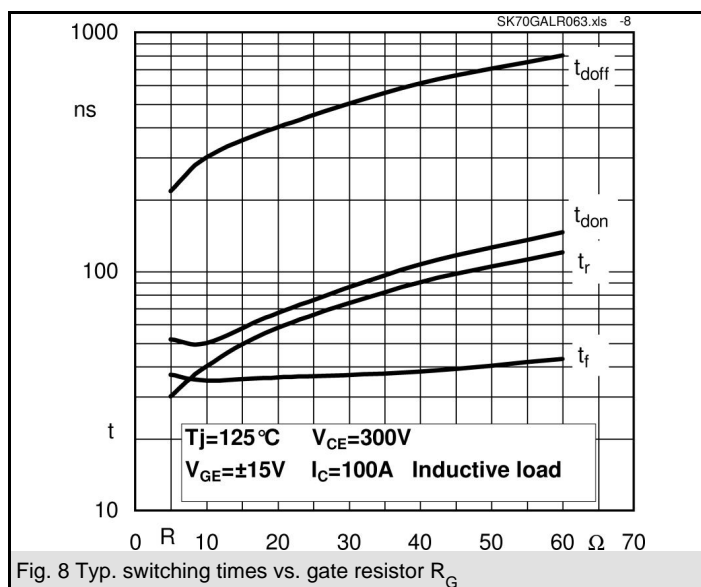
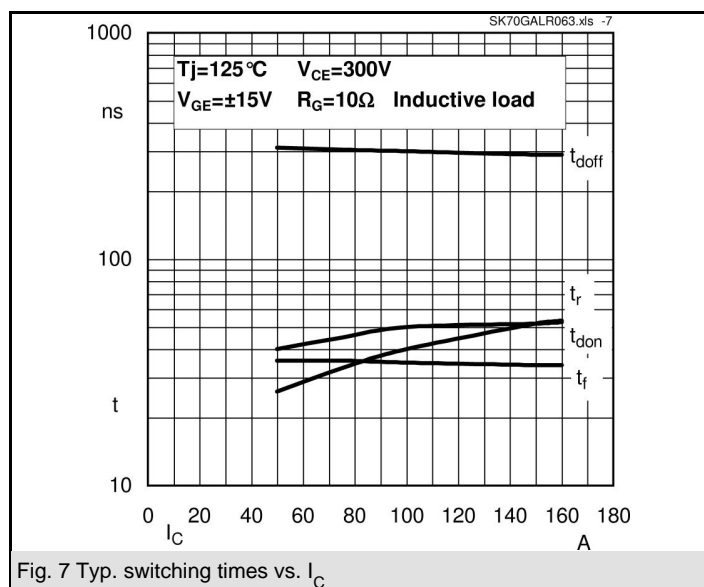
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 10 \text{ A}; V_{GE} = 0 \text{ V}$		$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$ $T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$	1,45 1,4	1,7 1,7 V V
V_{F0}			$T_j = 125 \text{ }^\circ\text{C}$	0,85	0,9 V
r_F			$T_j = 125 \text{ }^\circ\text{C}$	55	80 mΩ
I_{RRM}	$I_{Fnom} = 10 \text{ A}$		$T_j = 125 \text{ }^\circ\text{C}$	6,5	A
Q_{rr}	$di/dt = -200 \text{ A}/\mu\text{s}$			1	μC
E_{rr}	$V_{CC} = 300 \text{ V}$			0,1	mJ
$R_{th(j-s)D}$	per diode			2,3	K/W
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = 60 \text{ A}; V_{GE} = 0 \text{ V}$		$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$ $T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$	1,4 1,3	V V
V_{F0}			$T_j = 125 \text{ }^\circ\text{C}$	0,85	0,9 V
r_F			$T_j = 125 \text{ }^\circ\text{C}$	6,5	11 V
I_{RRM}	$I_{Fnom} = 60 \text{ A}$		$T_j = 125 \text{ }^\circ\text{C}$	90	A
Q_{rr}	$di/dt = -3000 \text{ A}/\mu\text{s}$			7	μC
E_{rr}	$V_R = 300 \text{ V}$			1,2	mJ
$R_{th(j-s)FD}$	per diode			0,9	K/W
M_s	to heat sink M1			2	Nm
w				19	g

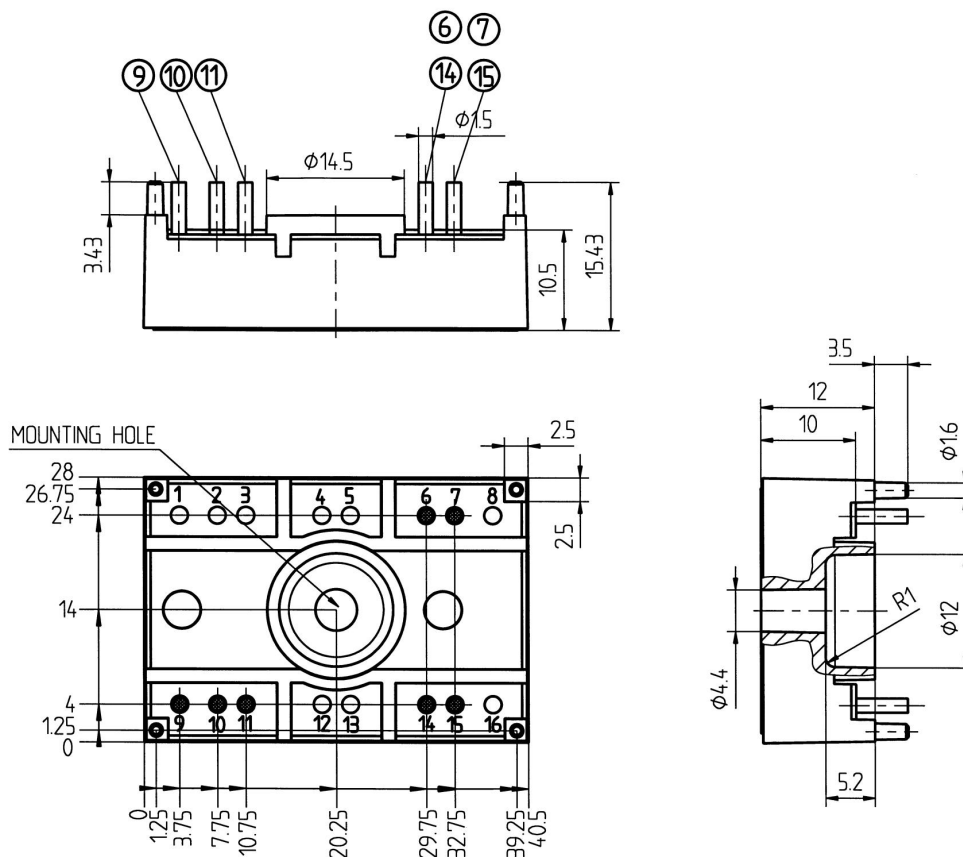
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

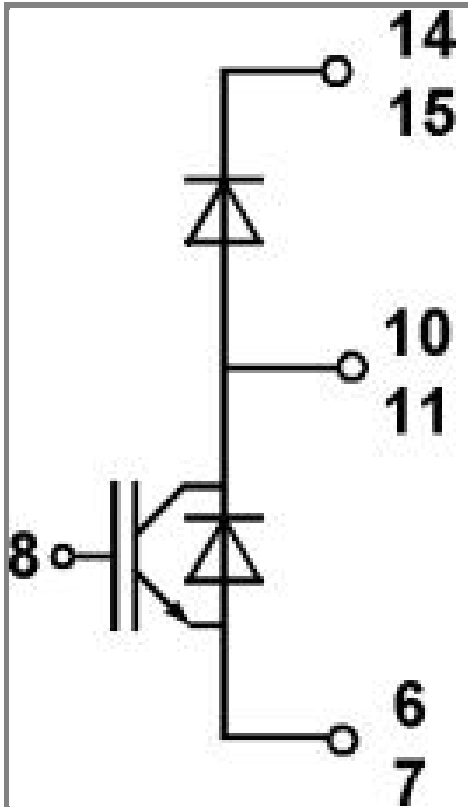






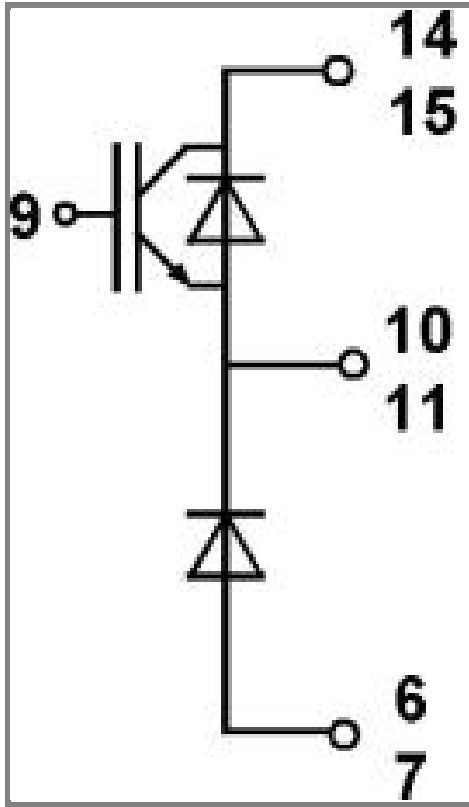


Case T18 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 18

GAL



Case T18

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