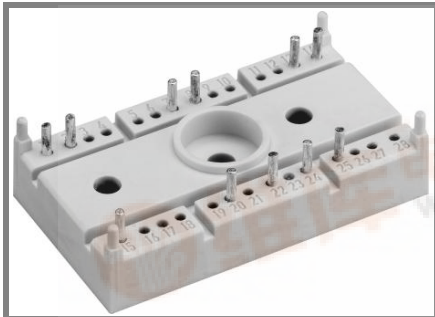


# SK 50 GB 067



SEMITOP® 3

## IGBT Module

SK 50 GAL 067

SK 50 GAR 067

SK 50 GB 067

Target Data

### Features

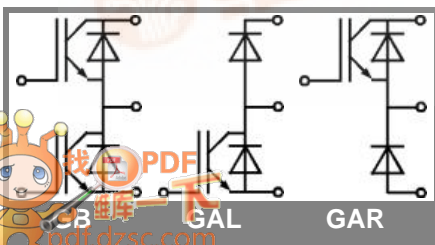
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- Hyper fast NPT IGBT
- N-channel homogeneous silicon structure (NPT-Non punch-through IGBT)
- Positive Vcesat temperature coefficient (Easy paralleling)
- Low threshold voltage
- Low tail current with low temperature dependence

### Typical Applications

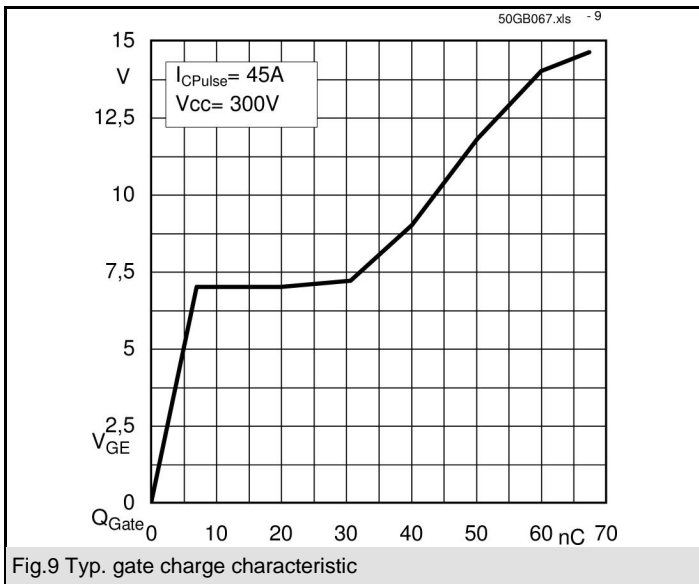
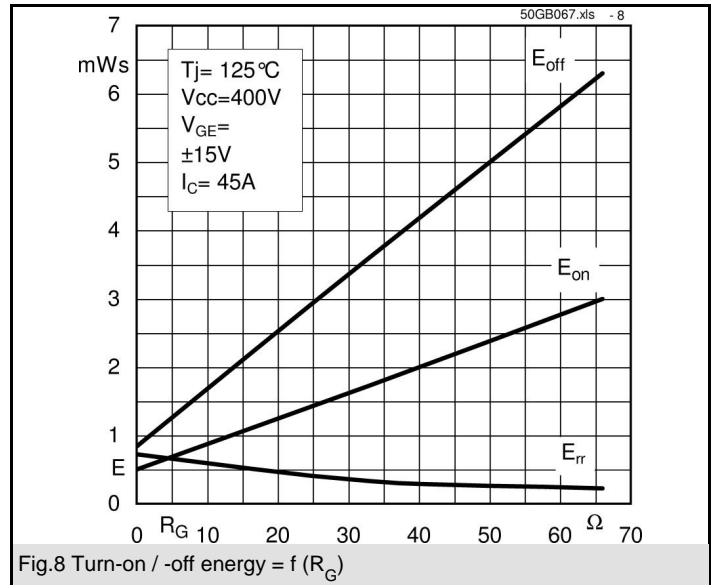
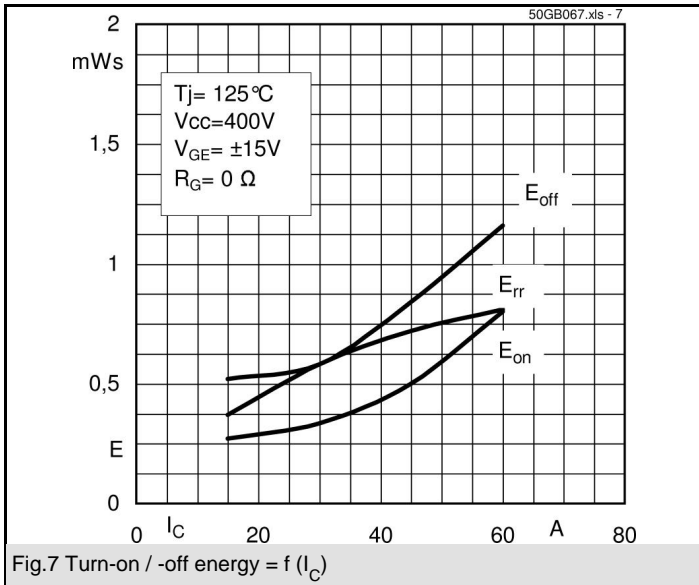
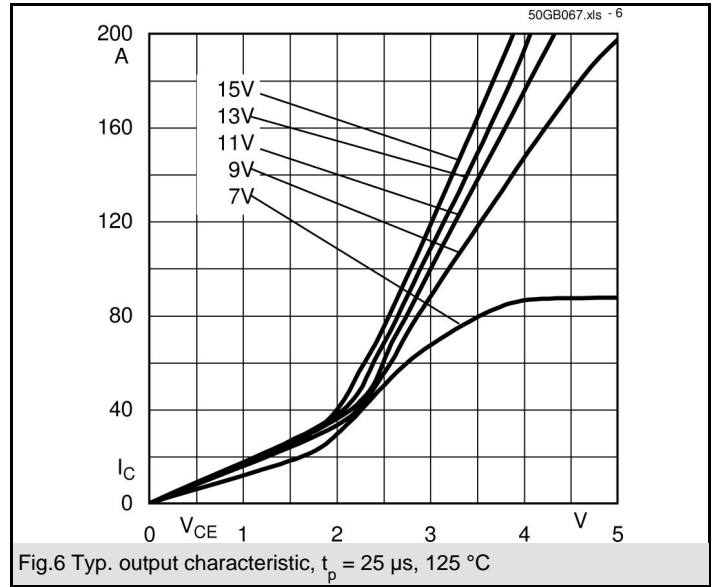
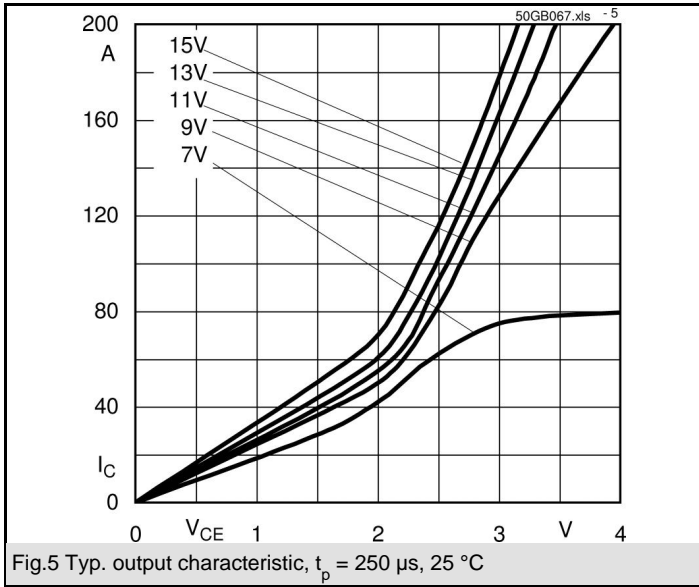
- Switching (not for linear use)
- High Frequencies Applications
- Welding Generator
- Switched mode power supplies
- UPS

Absolute Maximum Ratings		T <sub>s</sub> = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
V <sub>CES</sub>		600	V
V <sub>GES</sub>		± 20	V
I <sub>C</sub>	T <sub>s</sub> = 25 (80) °C;	83 (54)	A
I <sub>CM</sub>	t <sub>p</sub> < 1 ms; T <sub>s</sub> = 25 (80) °C;	166 (108)	A
T <sub>j</sub>		- 40 ... + 150	°C
<b>Inverse / Freewheeling diode</b>			
I <sub>F</sub>	T <sub>s</sub> = 25 (80) °C;	90 (56)	A
I <sub>FM</sub> = - I <sub>CM</sub>	t <sub>p</sub> < 1 ms; T <sub>s</sub> = 25 (80) °C;	180 (112)	A
T <sub>j</sub>		- 40 ... + 150	°C
T <sub>stg</sub>	Terminals, 10 s	- 40 ... + 125	°C
T <sub>sol</sub>		260	°C
V <sub>isol</sub>	AC 50 Hz, r.m.s. 1 min. / 1 s	2500 / 3000	V

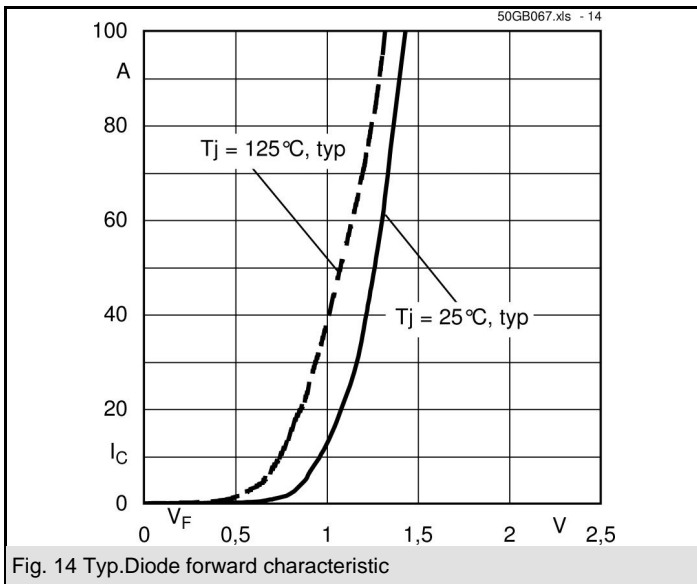
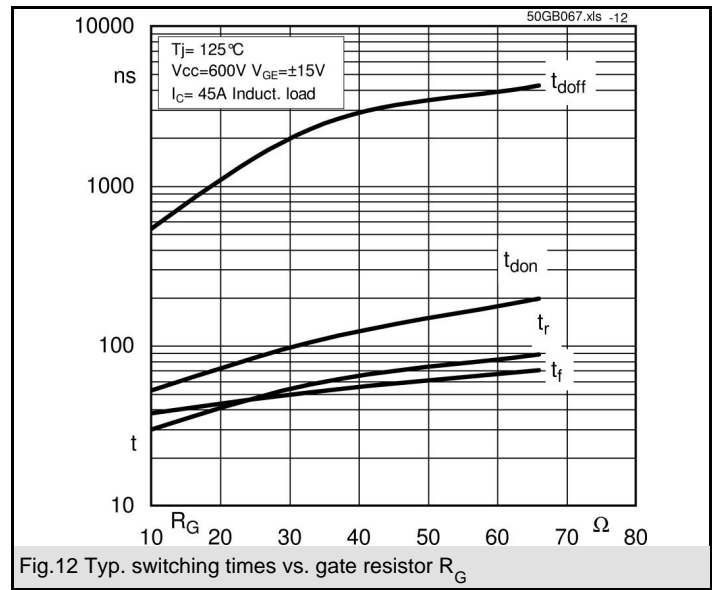
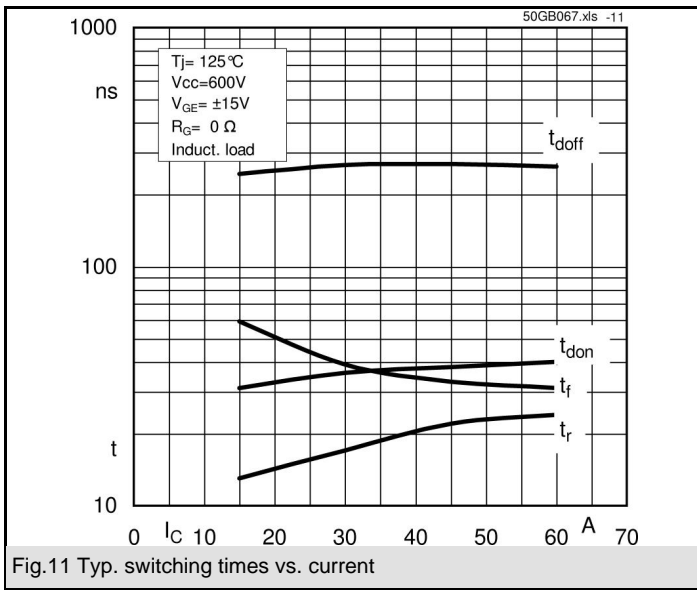
Characteristics		T <sub>s</sub> = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT</b>					
V <sub>CE(sat)</sub>	I <sub>C</sub> = 120 A, T <sub>j</sub> = 25 (125) °C		2,8 (3,5)		V
V <sub>GE(th)</sub>	V <sub>CE</sub> = V <sub>GE</sub> ; I <sub>C</sub> = 0,0028 A	3	4	5	V
C <sub>ies</sub>	V <sub>CE</sub> = 15 V; V <sub>GE</sub> = 0 V; 1 MHz		6		nF
R <sub>th(j-s)</sub>	per IGBT			0,45	K/W
	per module				K/W
under following conditions:					
t <sub>d(on)</sub>	V <sub>CC</sub> = 400 V, V <sub>GE</sub> = ± 15 V		22		ns
t <sub>r</sub>	I <sub>C</sub> = 120 A, T <sub>j</sub> = 125 °C		10		ns
t <sub>d(off)</sub>	R <sub>Gon</sub> = R <sub>Goff</sub> = 11 Ω		280		ns
t <sub>f</sub>			26		ns
E <sub>on</sub> + E <sub>off</sub>	Inductive load		6,7		mJ
<b>Inverse / Freewheeling diode</b>					
V <sub>F</sub> = V <sub>EC</sub>	I <sub>F</sub> = 120 A; T <sub>j</sub> = 25 (150) °C		(1,25)		V
V <sub>(TO)</sub>	T <sub>j</sub> = (150) °C		(1)		V
r <sub>T</sub>	T <sub>j</sub> = (150) °C		(4)		mΩ
R <sub>th(j-s)</sub>				0,8	K/W
under following conditions:					
I <sub>RRM</sub>	I <sub>F</sub> = 120 A; V <sub>R</sub> = 600 V				A
Q <sub>rr</sub>	dI <sub>F</sub> /dt = -100 A/μs				μC
E <sub>off</sub>	V <sub>GE</sub> = 0 V; T <sub>j</sub> = 125 °C				mJ
<b>Mechanical data</b>					
M1	mounting torque	2,3		2,5	Nm
w			29		g
Case	SEMITOP® 3		T 66		



# SK 50 GB 067



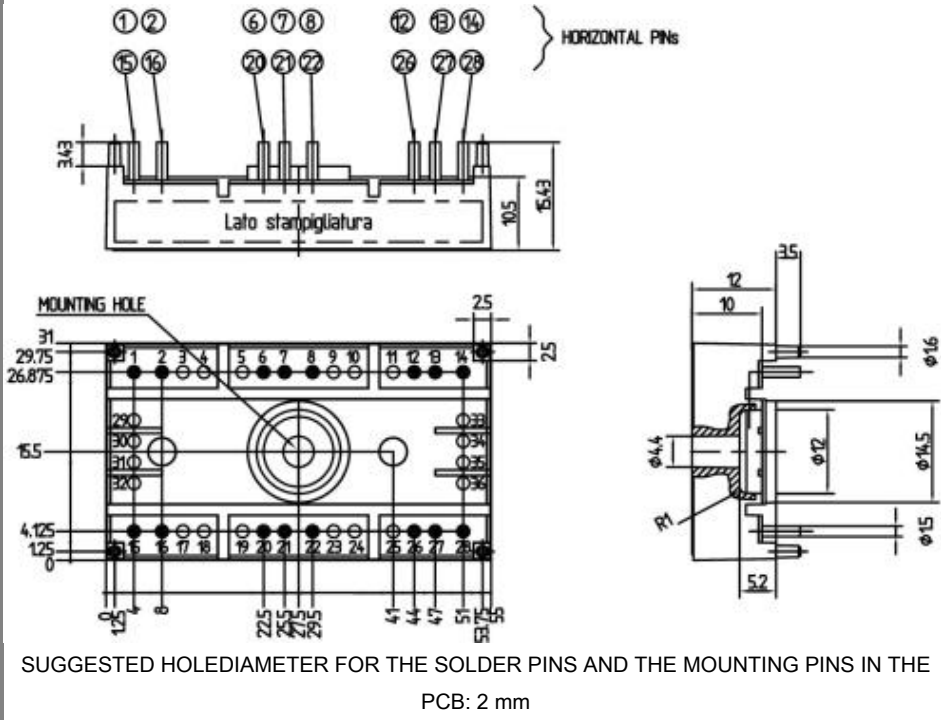
# SK 50 GB 067



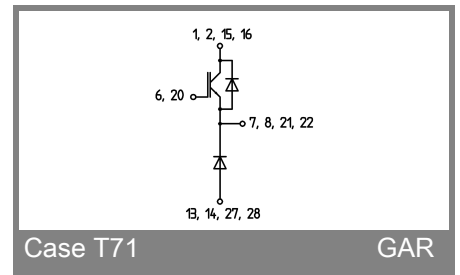
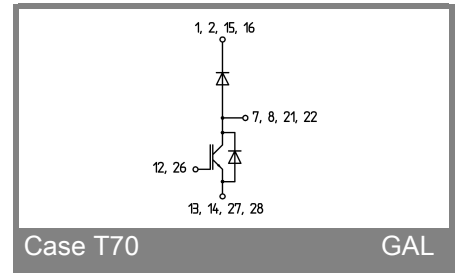
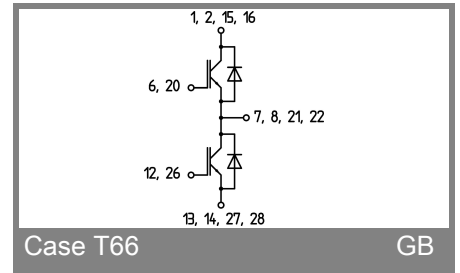
# SK 50 GB 067

UL Recognized  
File no. E 63532

Dimensions in mm



Case T66



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

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