



**SEMITOP® 3**

## IGBT Module

SK 50 GAL 067

SK 50 GAR 067

SK 50 GB 067

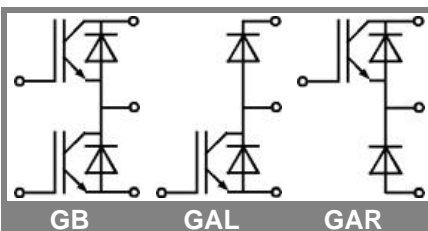
Target Data

### 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

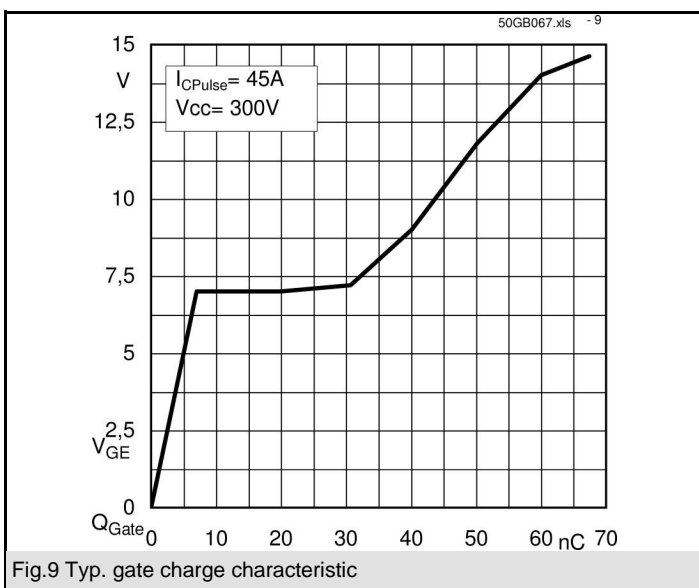
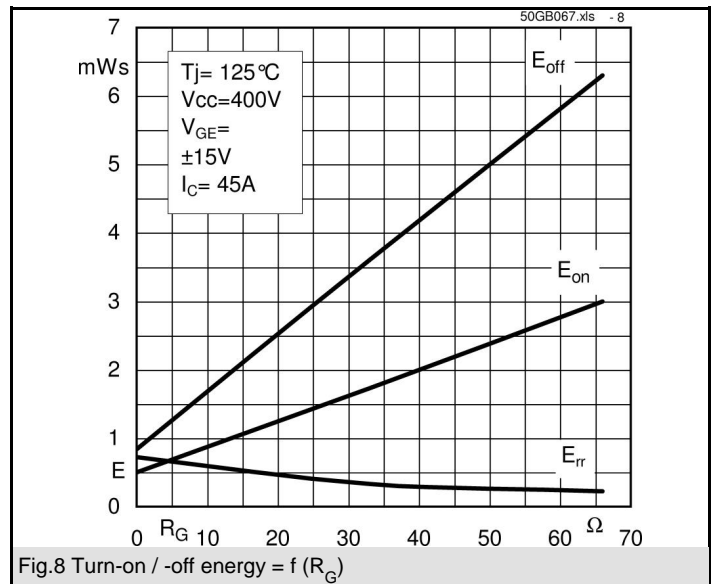
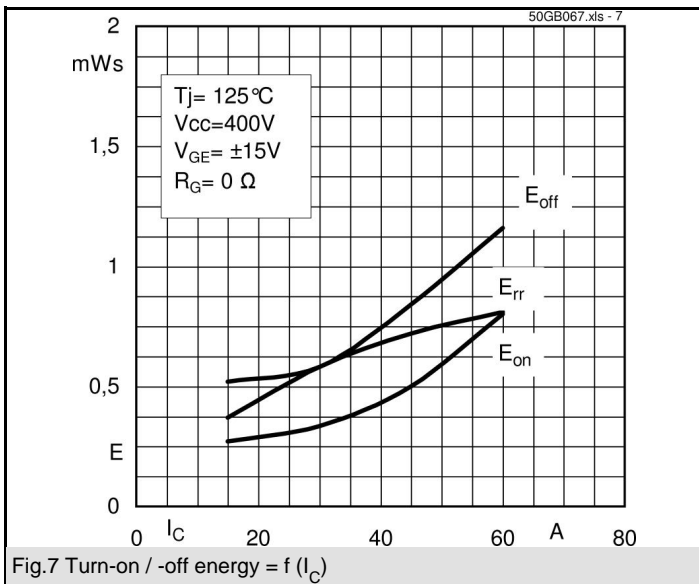
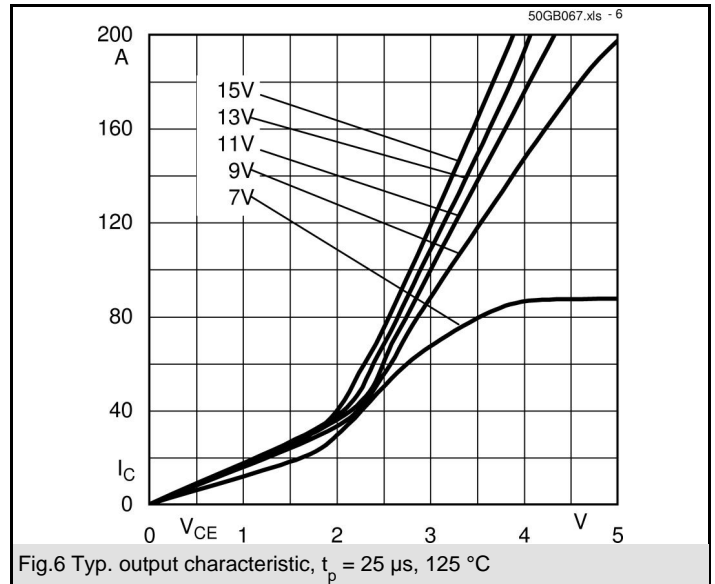
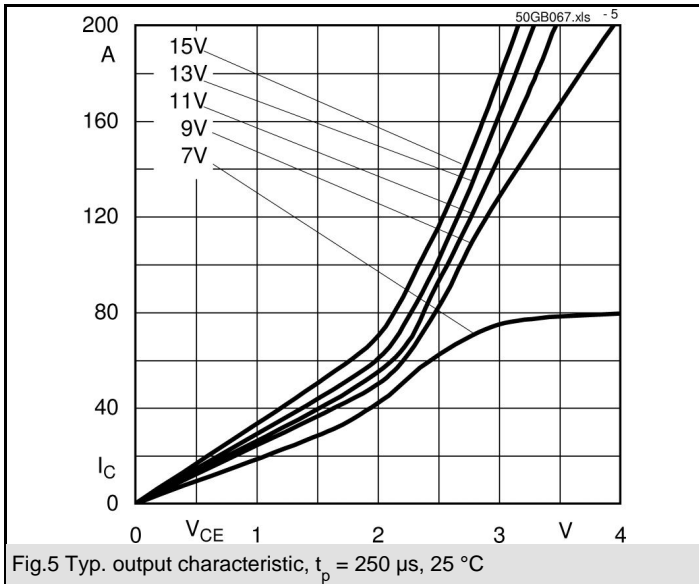
### Typical Applications

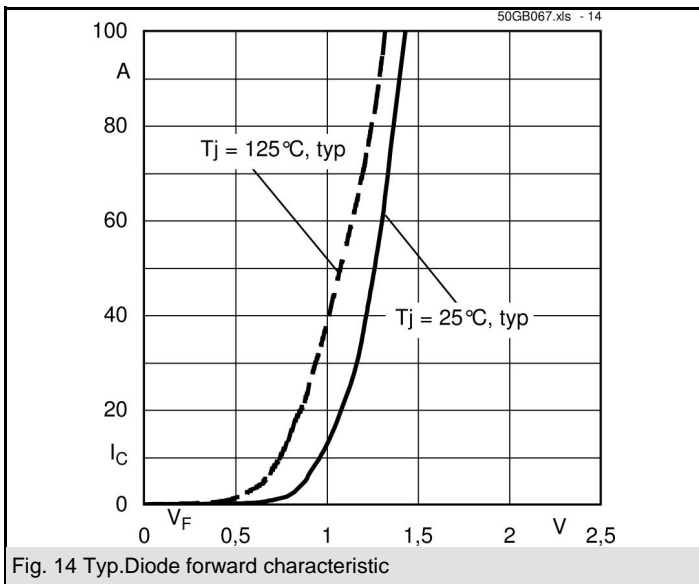
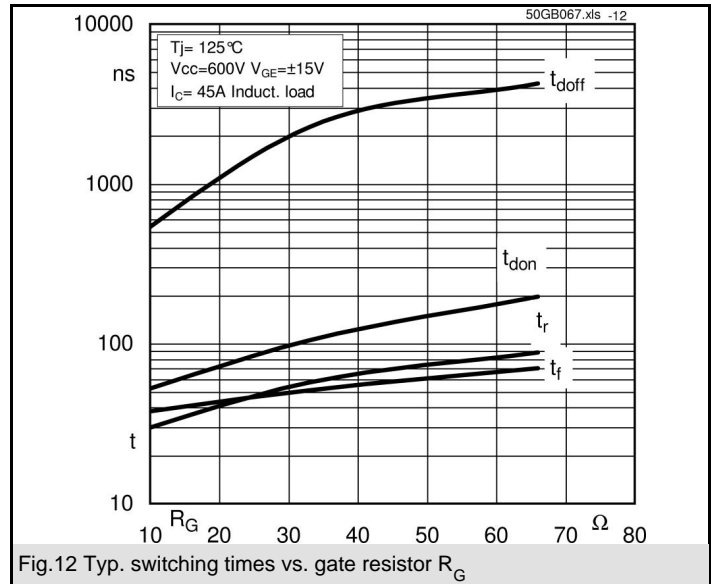
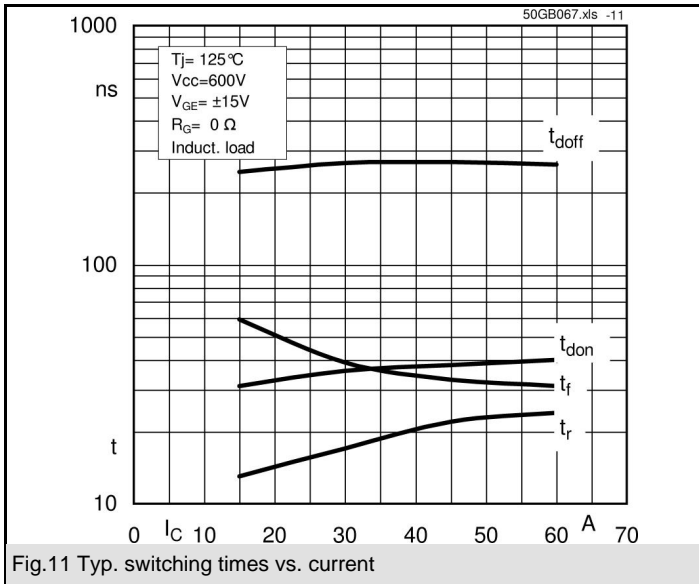
- Switching (not for linear use)
- High Frequencies Applications
- Welding Generator
- Switched mode power supplies
- UPS



Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
$V_{CES}$		600	V
$V_{GES}$		$\pm 20$	V
$I_C$	$T_s = 25\text{ (80) °C}$ ;	83 (54)	A
$I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	166 (108)	A
$T_j$		- 40 ... + 150	°C
<b>Inverse / Freewheeling diode</b>			
$I_F$	$T_s = 25\text{ (80) °C}$ ;	90 (56)	A
$I_{FM} = -I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) °C}$ ;	180 (112)	A
$T_j$		- 40 ... + 150	°C
$T_{stg}$		- 40 ... + 125	°C
$T_{sol}$	Terminals, 10 s	260	°C
$V_{isol}$	AC 50 Hz, r.m.s. 1 min. / 1 s	2500 / 3000	V

Characteristics		$T_s = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT</b>					
$V_{CE(sat)}$	$I_C = 120\text{ A}$ , $T_j = 25\text{ (125) °C}$		2,8 (3,5)		V
$V_{GE(th)}$	$V_{CE} = V_{GE}$ ; $I_C = 0,0028\text{ A}$	3	4	5	V
$C_{res}$	$V_{CE} = 15\text{ V}$ ; $V_{GE} = 0\text{ V}$ ; 1 MHz		6		nF
$R_{th(j-s)}$	per IGBT			0,45	K/W
	per module				K/W
$t_{d(on)}$	under following conditions: $V_{CC} = 400\text{ V}$ , $V_{GE} = \pm 15\text{ V}$		22		ns
$t_r$	$I_C = 120\text{ A}$ , $T_j = 125\text{ °C}$		10		ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 11\ \Omega$		280		ns
$t_f$			26		ns
$E_{on} + E_{off}$	Inductive load		6,7		mJ
<b>Inverse / Freewheeling diode</b>					
$V_F = V_{EC}$	$I_F = 120\text{ A}$ ; $T_j = 25\text{ (150) °C}$		(1,25)		V
$V_{(TO)}$	$T_j = (150)\text{ °C}$		(1)		V
$r_T$	$T_j = (150)\text{ °C}$		(4)		mΩ
$R_{th(j-s)}$				0,8	K/W
$I_{RRM}$	under following conditions: $I_F = 120\text{ A}$ ; $V_R = 600\text{ V}$				A
$Q_{rr}$	$di_F/dt = -100\text{ A}/\mu\text{s}$				μC
$E_{off}$	$V_{GE} = 0\text{ V}$ ; $T_j = 125\text{ °C}$				mJ
<b>Mechanical data</b>					
M1	mounting torque	2,3		2,5	Nm
w			29		g
Case	SEMITOP® 3		T 66		

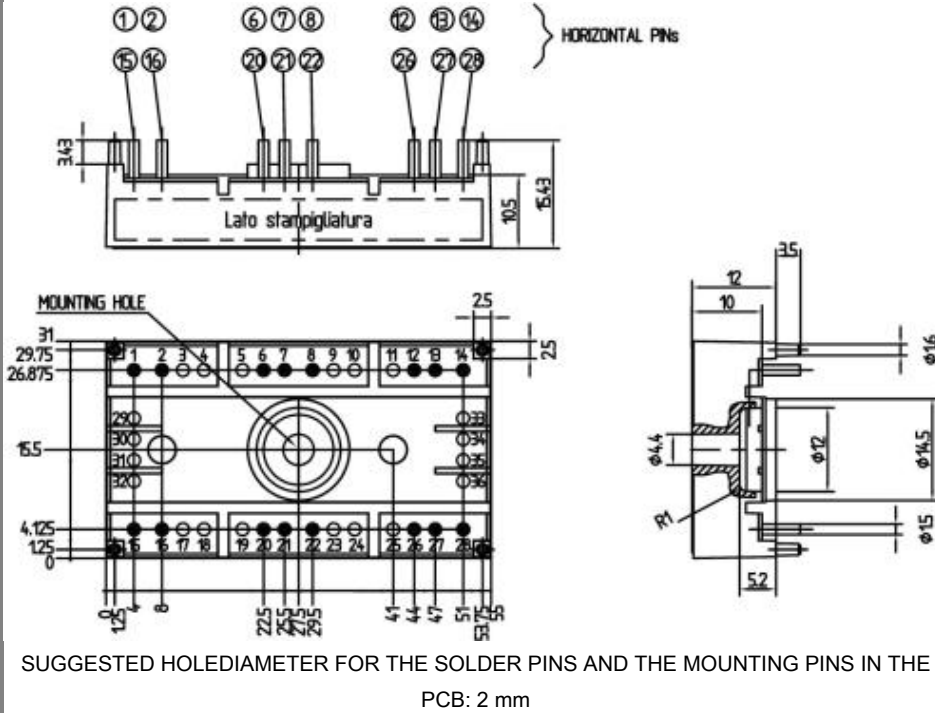




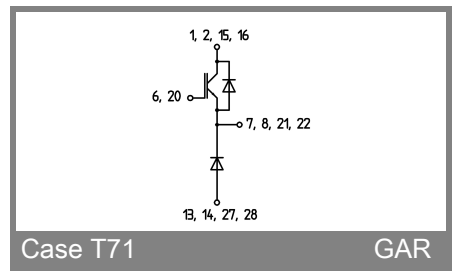
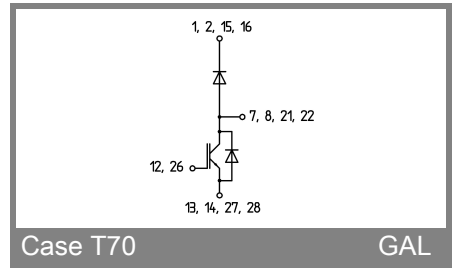
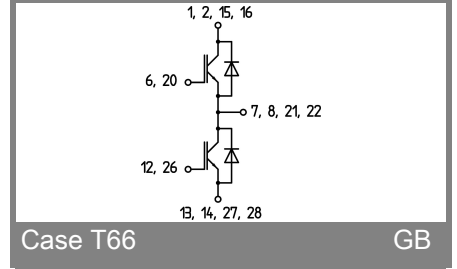
# SK 50 GB 067

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.

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