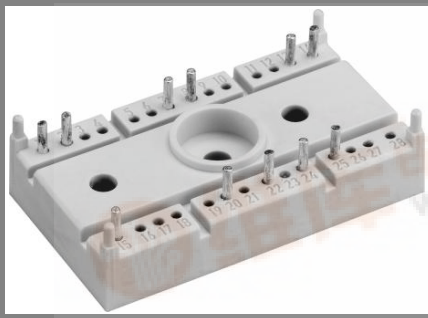


# SK 80 GB 125 T



SEMITOP® 3

## IGBT Module

### SK 80 GB 125 T

#### Preliminary Data

#### Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding Aluminium Nitride ceramic (DBC)
- High short circuit capability
- Low tail current with low temperature dependence
- Integrated NTC temperature sensor

#### Typical Applications

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

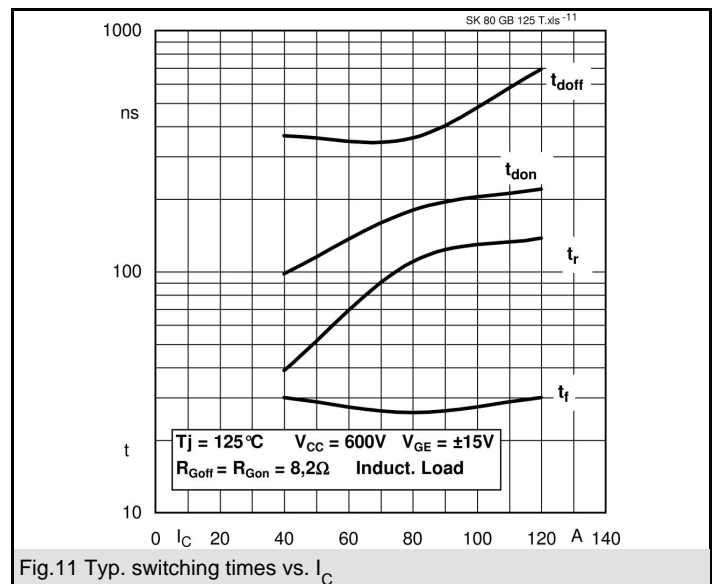
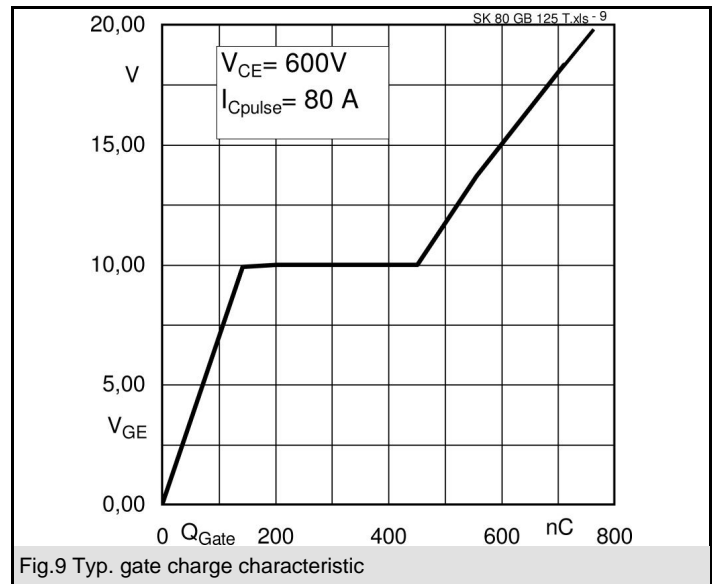
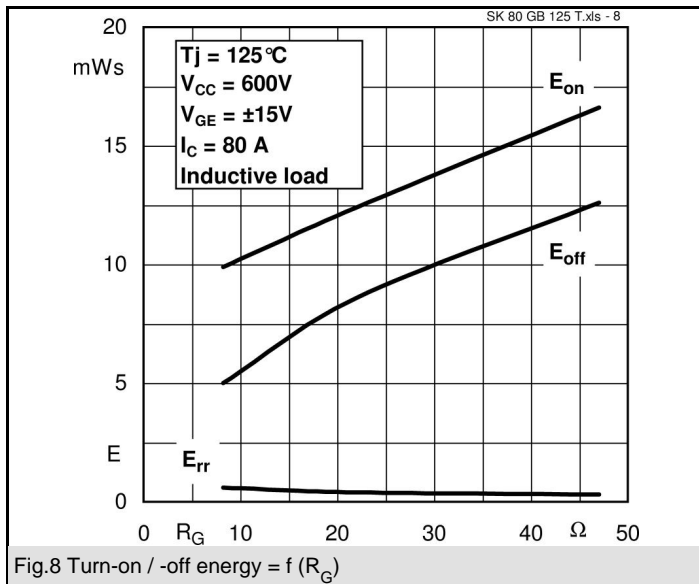
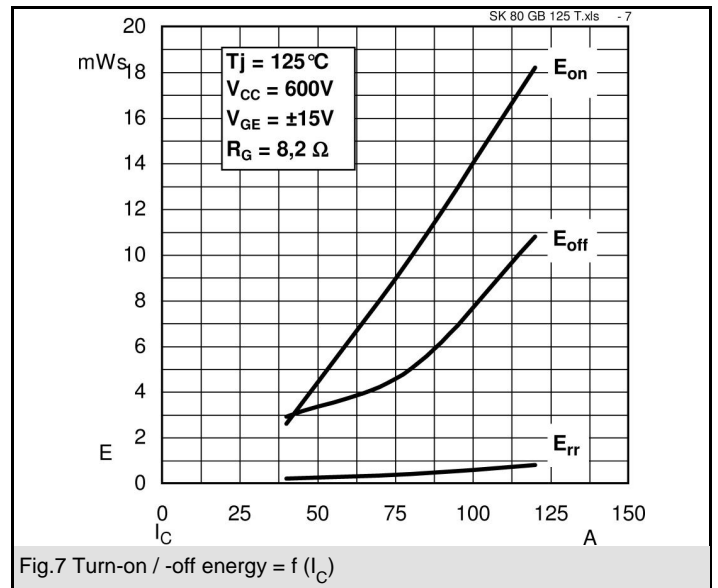
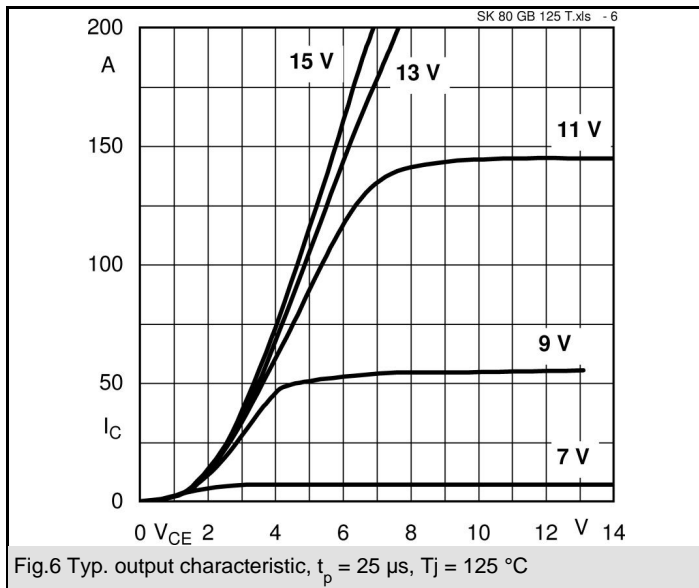
1)  $V_{CE,sat}$ ,  $V_F$  = chip level value

Absolute Maximum Ratings		$T_s = 25\text{ }^\circ\text{C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
$V_{CES}$		1200	V
$V_{GES}$		$\pm 20$	V
$I_C$	$T_s = 25\text{ (80) }^\circ\text{C}$ ;	85 (55)	A
$I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) }^\circ\text{C}$ ;	170 (110)	A
$T_j$		- 40 ... + 150	$^\circ\text{C}$
<b>Inverse/Freewheeling CAL diode</b>			
$I_F$	$T_s = 25\text{ (80) }^\circ\text{C}$ ;	90 (60)	A
$I_{FM} = -I_{CM}$	$t_p < 1\text{ ms}$ ; $T_s = 25\text{ (80) }^\circ\text{C}$ ;	180 (120)	A
$T_j$		- 40 ... + 150	$^\circ\text{C}$
$T_{stg}$		- 40 ... + 125	$^\circ\text{C}$
$T_{sol}$	Terminals, 10 s	260	$^\circ\text{C}$
$V_{isol}$	AC 50 Hz, r.m.s. 1 min. / 1 s	2500 / 3000	V

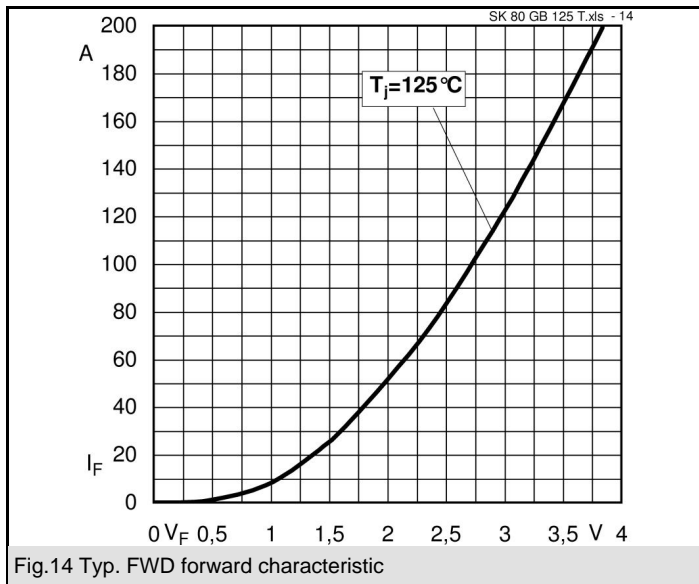
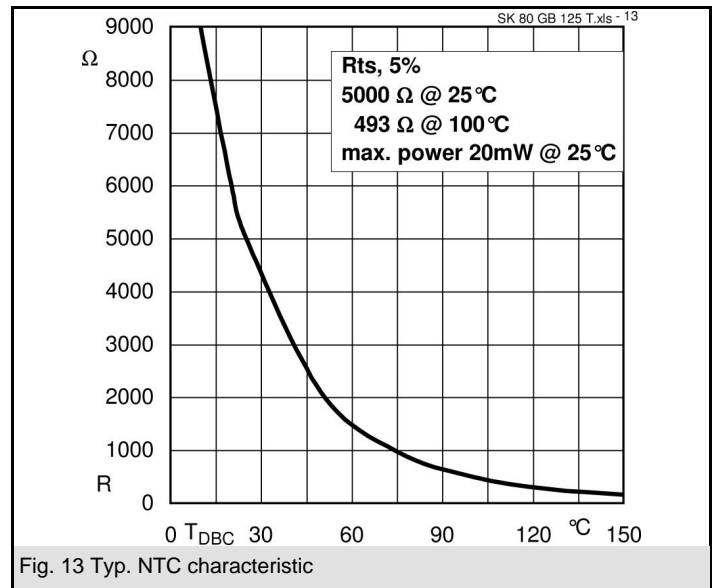
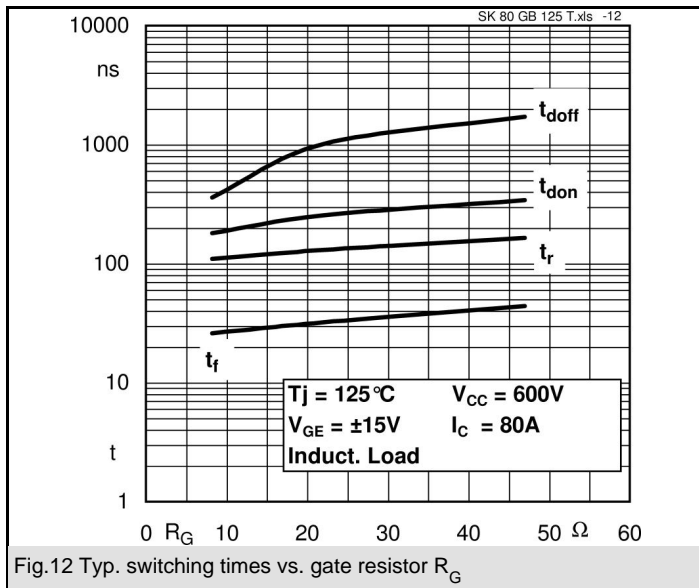
Characteristics		$T_s = 25\text{ }^\circ\text{C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT</b>					
$V_{CE(sat)}$	$I_C = 75\text{ A}$ , $T_j = 25\text{ (125) }^\circ\text{C}$		3,2 (3,85)	3,7	V
$V_{GE(th)}$	$V_{CE} = V_{GE}$ ; $I_C = 0,003\text{ A}$	4,5	5,5	6,5	V
$C_{ies}$	$V_{CE} = 25\text{ V}$ ; $V_{GE} = 0\text{ V}$ ; 1 MHz		5,1		nF
$R_{th(j-s)}$	per IGBT per module			0,32	K/W
under following conditions:					
$t_{d(on)}$	$V_{CC} = 600\text{ V}$ , $V_{GE} = \pm 15\text{ V}$		180		ns
$t_r$	$I_C = 80\text{ A}$ , $T_j = 125\text{ }^\circ\text{C}$		110		ns
$t_{d(off)}$	$R_{Gon} = R_{Goff} = 8,2\text{ }\Omega$		358		ns
$t_f$			26		ns
$E_{on} + E_{off}$	Inductive load		15		mJ
<b>Inverse/Freewheeling CAL Diode</b>					
$V_F = V_{EC}$	$I_F = 55\text{ A}$ ; $T_j = 25\text{ (125) }^\circ\text{C}$		2 (1,8)		V
$V_{(TO)}$	$T_j = (125)\text{ }^\circ\text{C}$		(1,2)		V
$r_T$	$T_j = (125)\text{ }^\circ\text{C}$		(11)		m $\Omega$
$R_{th(j-s)}$				0,65	K/W
under following conditions:					
$I_{RRM}$	$I_F = 50\text{ A}$ ; $V_R = 600\text{ V}$		40		A
$Q_{rr}$	$di_F/dt = -800\text{ A}/\mu\text{s}$		8		$\mu\text{C}$
$E_{off}$	$V_{GE} = 0\text{ V}$ ; $T_j = 125\text{ }^\circ\text{C}$		1		mJ
<b>Mechanical data</b>					
M1	mounting torque	2,25		2,5	Nm
w			30		g
Case	SEMITOP® 3		T 73		



# SK 80 GB 125 T



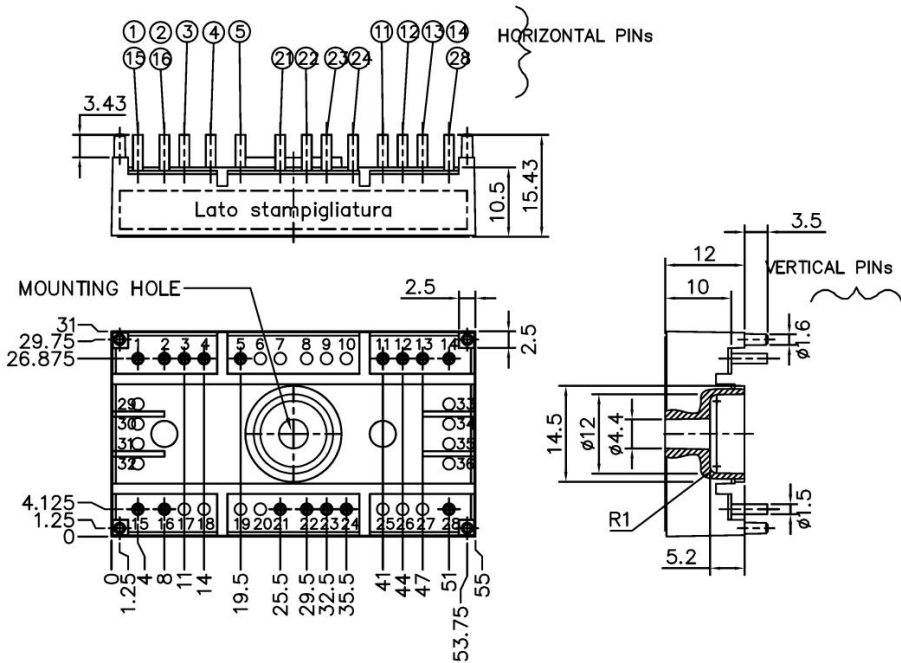
# SK 80 GB 125 T



# SK 80 GB 125 T

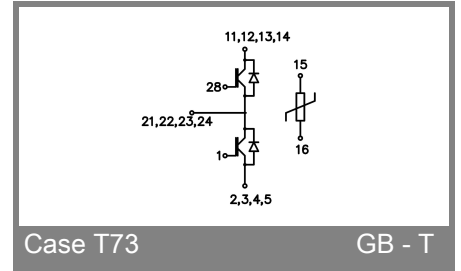
UL Recognized  
File no. E 63532

Dimensions in mm



SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T73



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.