

SEMITOP® 3

IGBT Module

SK60GB125

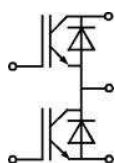
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High short circuit capability
- Ultra Fast NPT IGBT technology
- $V_{ce,sat}$ with positive coefficient

Typical Applications*

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



GB

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V _{CES}	T _j = 25 °C		1200	V
I _C	T _j = 125 °C	T _s = 25 °C	51	A
		T _s = 80 °C	35	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}		100	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	57	A
		T _s = 80 °C	38	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}			A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C		550	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 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 2 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C			0,006	mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _j = 25 °C			300	nA
V _{CE0}		T _j = 25 °C		1,4	1,9	V
		T _j = 125 °C		1,7	2,2	V
r _{CE}	V _{GE} = 15 V	T _j = 25°C		36		mΩ
		T _j = 125°C		43		mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}		3,2	3,7	V
		T _j = 125°C _{chiplev.}		3,85		V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		3,3		nF
C _{oes}				0,5		nF
C _{res}				0,22		nF
t _{d(on)}	R _{Gon} = 33 Ω	V _{CC} = 600V I _C = 45A T _j = 125 °C V _{GE} = ±15V		80		ns
t _r				65		ns
E _{on}			8,36		mJ	
t _{d(off)}	R _{Goff} = 33 Ω			539		ns
t _f				22		ns
E _{off}			3,32		mJ	
R _{th(j-s)}	per IGBT				0,6	K/W



IGBT Module

SK60GB125

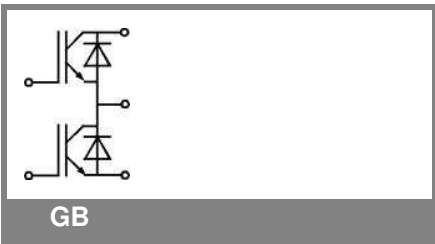
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High short circuit capability
- Ultra Fast NPT IGBT technology
- $V_{ce,sat}$ with positive coefficient

Typical Applications*

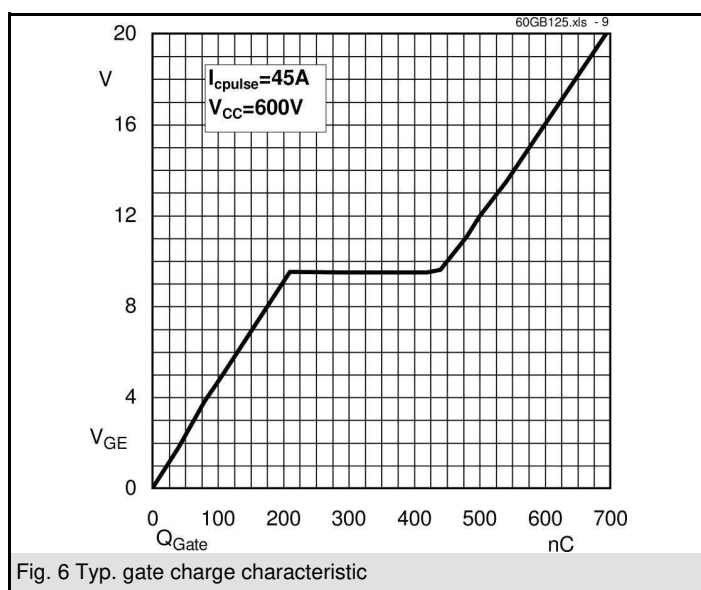
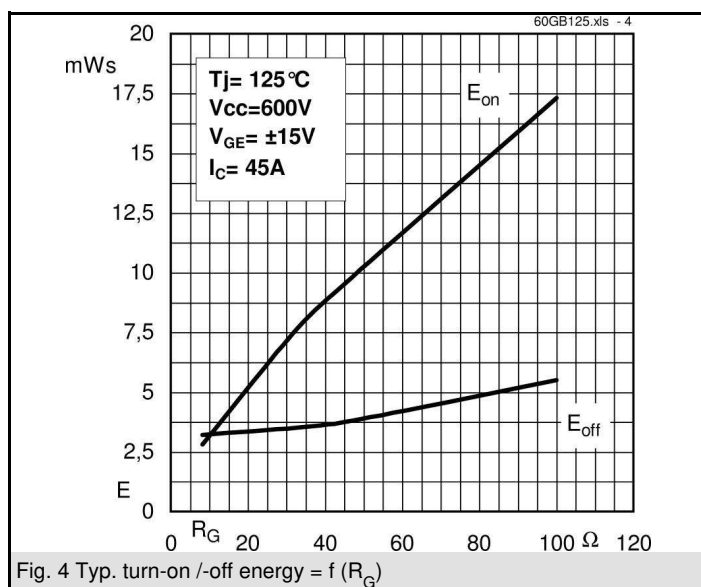
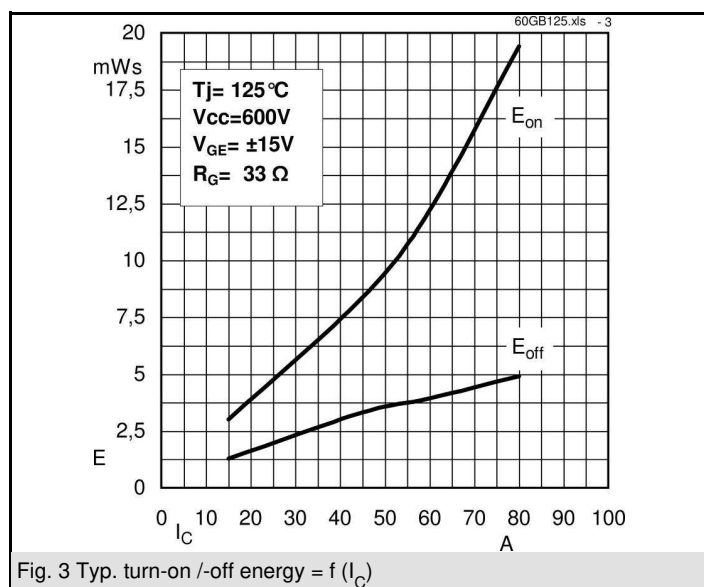
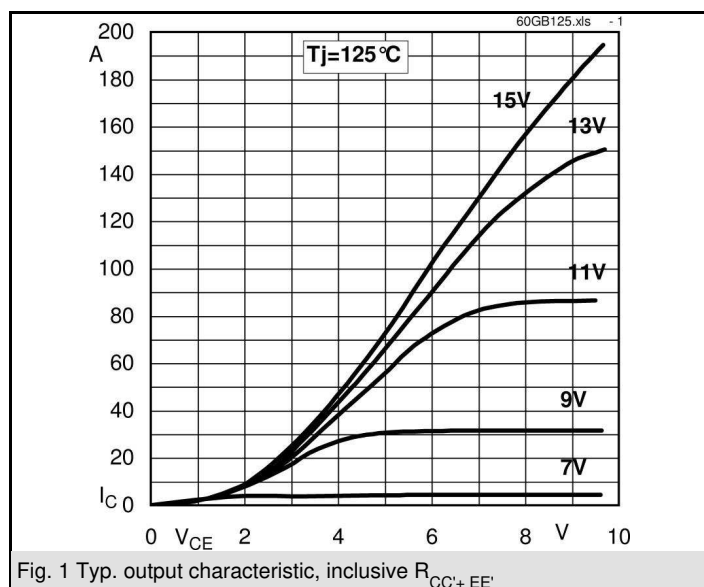
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

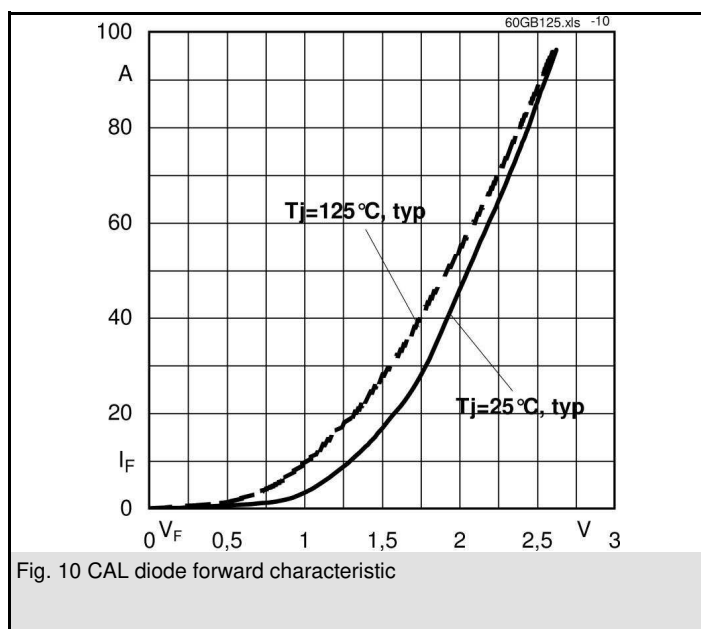
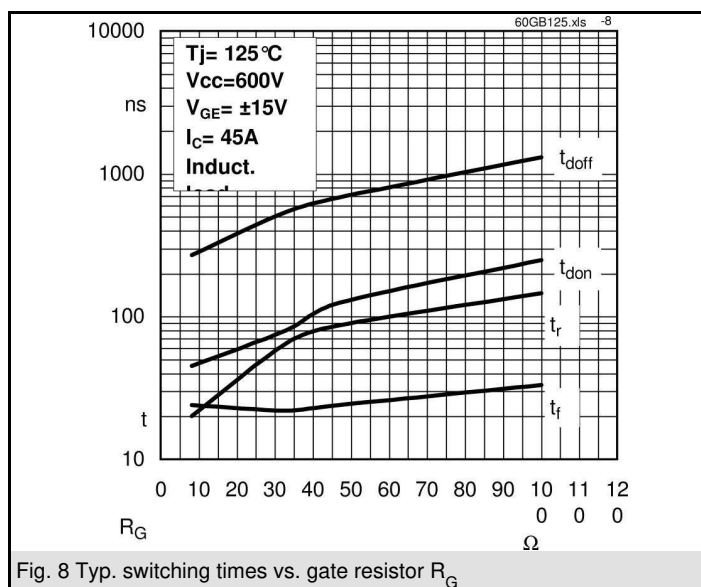
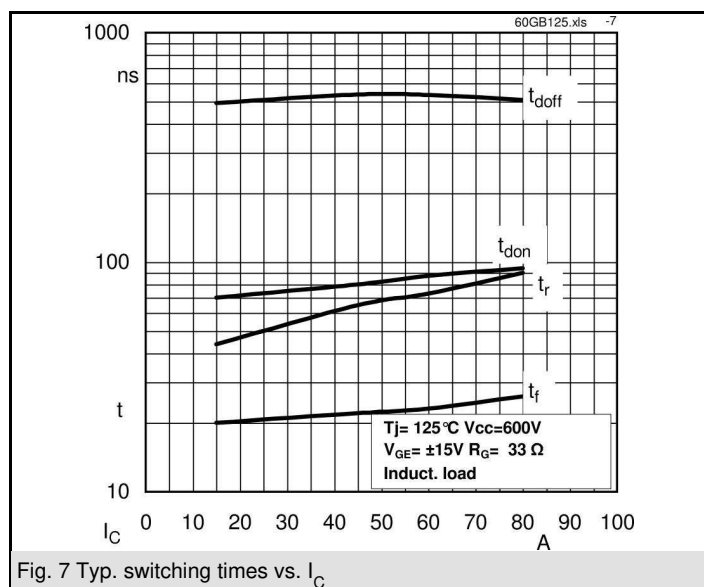


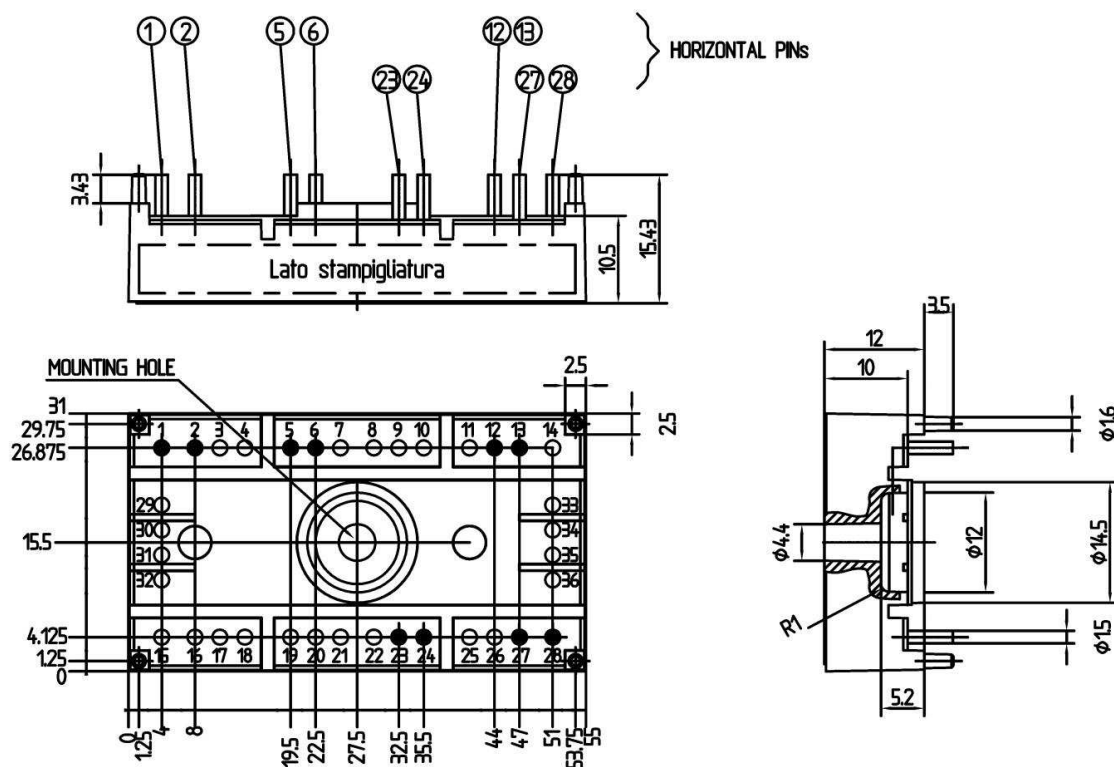
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 50 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2		V
		T _j = 125 °C _{chiplev.}		1,8		V
V _{F0}		T _j = 25 °C				V
		T _j = 125 °C		1	1,2	V
r _F		T _j = 25 °C				mΩ
		T _j = 125 °C		16	22	mΩ
I _{RRM}	I _F = 50 A	T _j = 125 °C		40		A
Q _{rr}	di/dt = -800 A/μs			8		μC
E _{rr}	V _{CC} = 600V			2		mJ
R _{th(j-s)D}	per diode				0,9	K/W
M _s	to heat sink		2,25		2,5	Nm
w				30		g

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

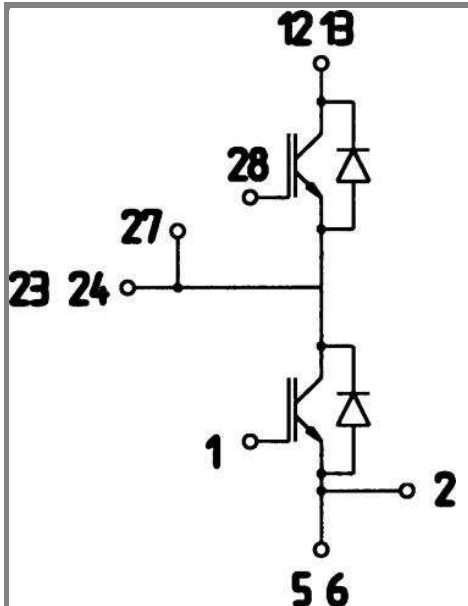
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.







Case T27 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 27

GB