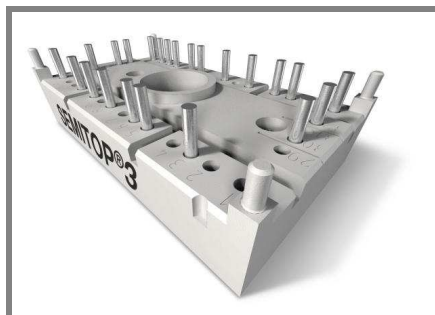


SK50GBB066T



SEMITOP® 3

IGBT Module

SK50GBB066T

Target Data

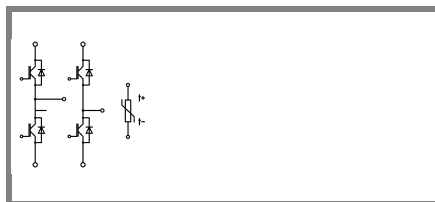
Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL HD technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

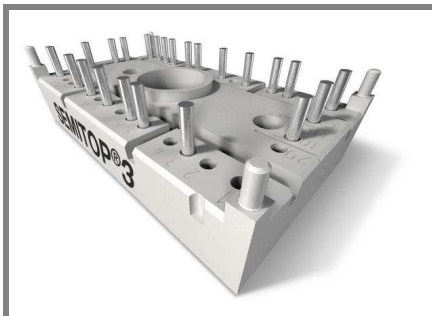
- Visol = 3000V AC, 50Hz, 1s



GBB-T

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V _{CES}	T _j = 25 °C	600	V
I _C	T _j = 175 °C	T _s = 25 °C	60
		T _s = 70 °C	50
I _{CRM}	I _{CRM} = 2 × I _{Cnom}	100	A
V _{GES}		± 20	V
t _{psc}	V _{CC} = 360 V; V _{GE} ≤ 20 V; T _j = 150 °C V _{CES} < 600 V	6	µs
Inverse Diode			
I _F	T _j = 175 °C	T _s = 25 °C	56
		T _s = 70 °C	44
I _{FRM}	I _{FRM} = 2 × I _{Fnom}	60	A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C	320	A
Module			
I _{t(RMS)}			A
T _{vj}		-40 ... +175	°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 = 0,8 mA	5	5,8	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C			mA
		T _j = 150 °C			mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _j = 25 °C		600	nA
		T _j = 150 °C			nA
V _{CE0}		T _j = 25 °C	0,9	1,1	V
		T _j = 150 °C	0,8	1	V
r _{CE}	V _{GE} = 15 V	T _j = 25 °C	11	15	mΩ
		T _j = 150 °C	17	21	mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _j = 25 °C _{chiplev.}	1,45	1,85	V
		T _j = 150 °C _{chiplev.}	1,65	2,05	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz	3,1		nF
C _{oes}			0,2		nF
C _{res}			0,093		nF
Q _G	V _{GE} = -7V...+15V		250		nC
t _{d(on)}	R _{Gon} = 16 Ω di/dt = 2438 A/µs	V _{CC} = 300V I _C = 50A	28		ns
t _r			32		ns
E _{on}			2,2		mJ
t _{d(off)}	R _{Goff} = 16 Ω di/dt = 2438 A/µs	T _j = 150 °C V _{GE} = -7/+15V	301		ns
t _f			45		ns
E _{off}			1,73		mJ
R _{th(j-s)}	per IGBT		1,11		K/W



SEMITOP[®] 3

IGBT Module

SK50GBB066T

Target Data

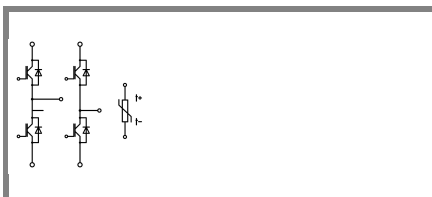
Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL HD technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

- Visol = 3000V AC, 50Hz, 1s

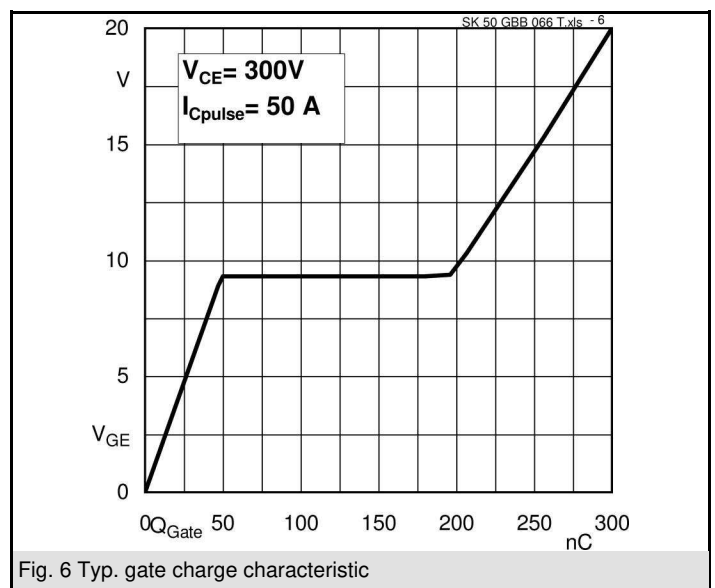
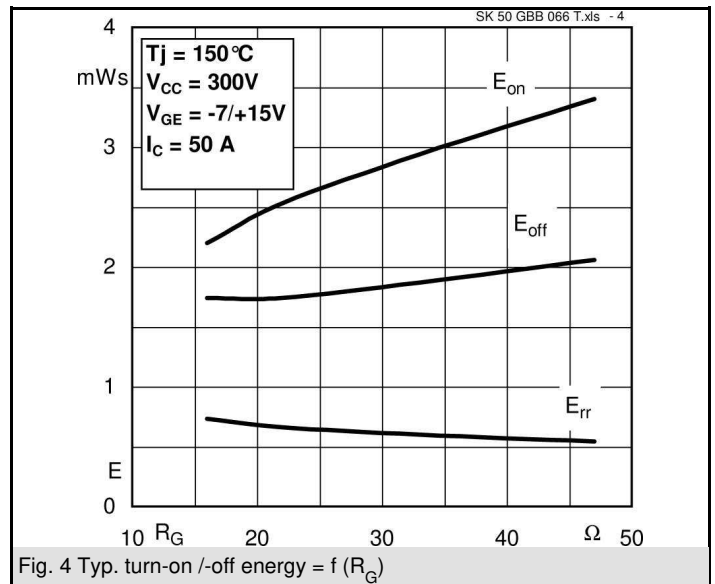
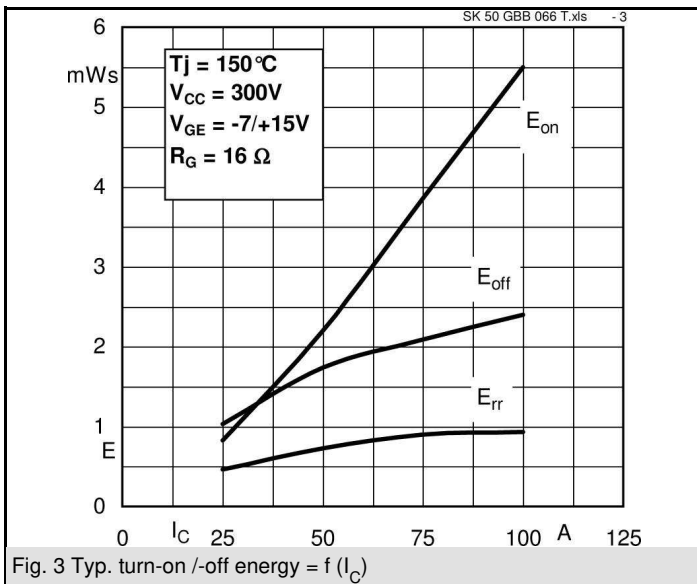
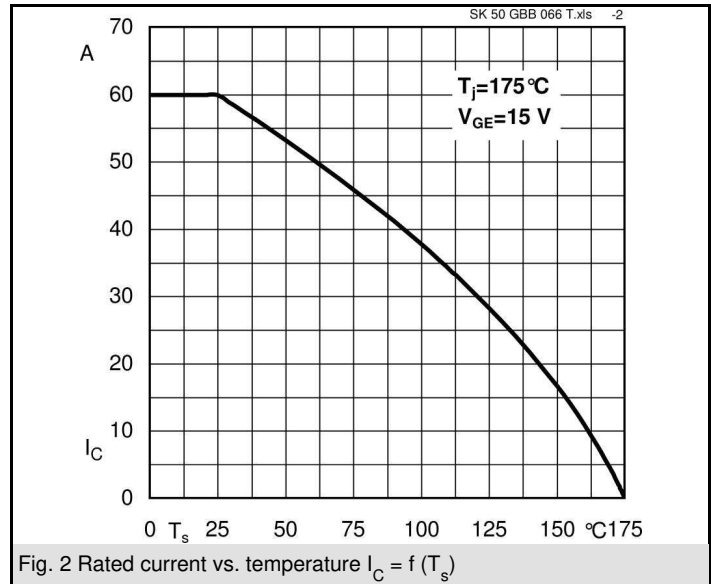
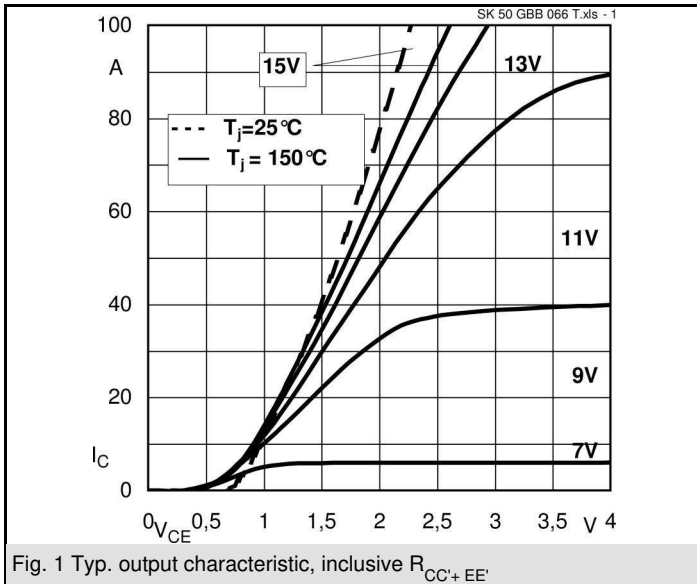


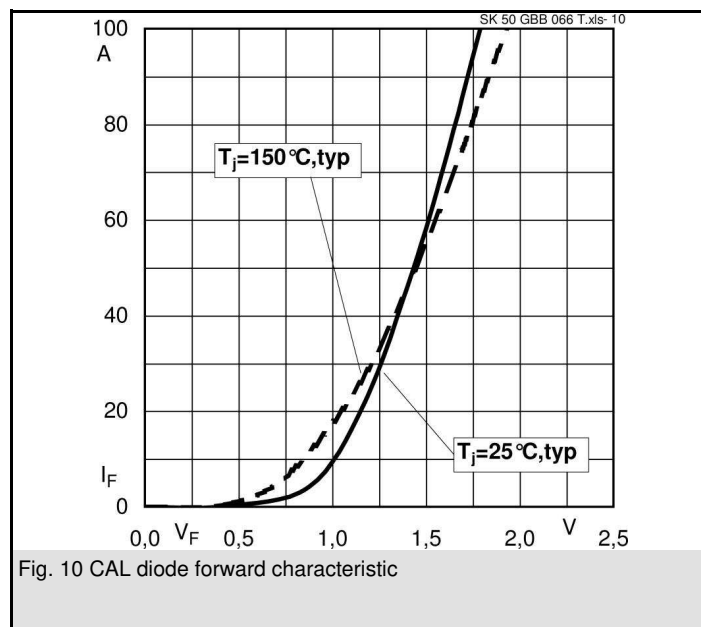
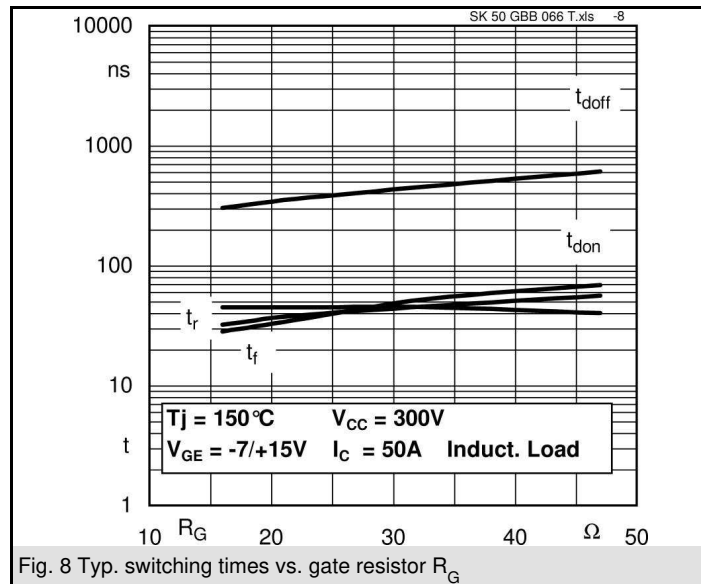
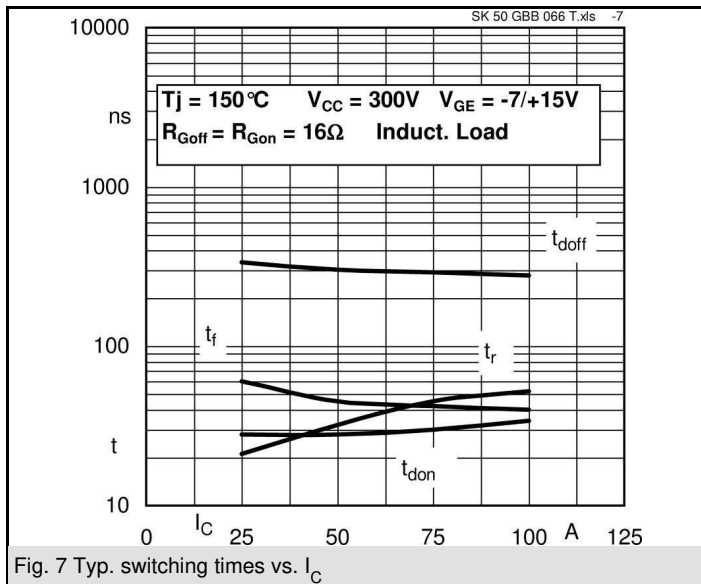
GBB-T

Characteristics			min.	typ.	max.	Units
Inverse Diode						
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,5		V
		$T_j = 150 \text{ }^\circ\text{C}_{\text{chiplev.}}$		1,5		V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$		1	1,1	V
		$T_j = 150 \text{ }^\circ\text{C}$		0,9	1	V
r_F		$T_j = 25 \text{ }^\circ\text{C}$		10	12	m Ω
		$T_j = 150 \text{ }^\circ\text{C}$		12	14	m Ω
I_{RRM}	$I_F = 50 \text{ A}$	$T_j = 150 \text{ }^\circ\text{C}$		44		A
Q_{rr}	$di/dt = 2438 \text{ A}/\mu\text{s}$			4,8		μC
E_{rr}	$V_{CC} = 300\text{V}$			0,72		mJ
$R_{th(j-s)D}$	per diode			1,7		K/W
M_s	to heat sink		2,25		2,5	Nm
w				30		g
Temperature sensor						
R_{100}	$T_s = 100^\circ\text{C} (R_{25} = 5\text{k}\Omega)$			493 \pm 5%		Ω

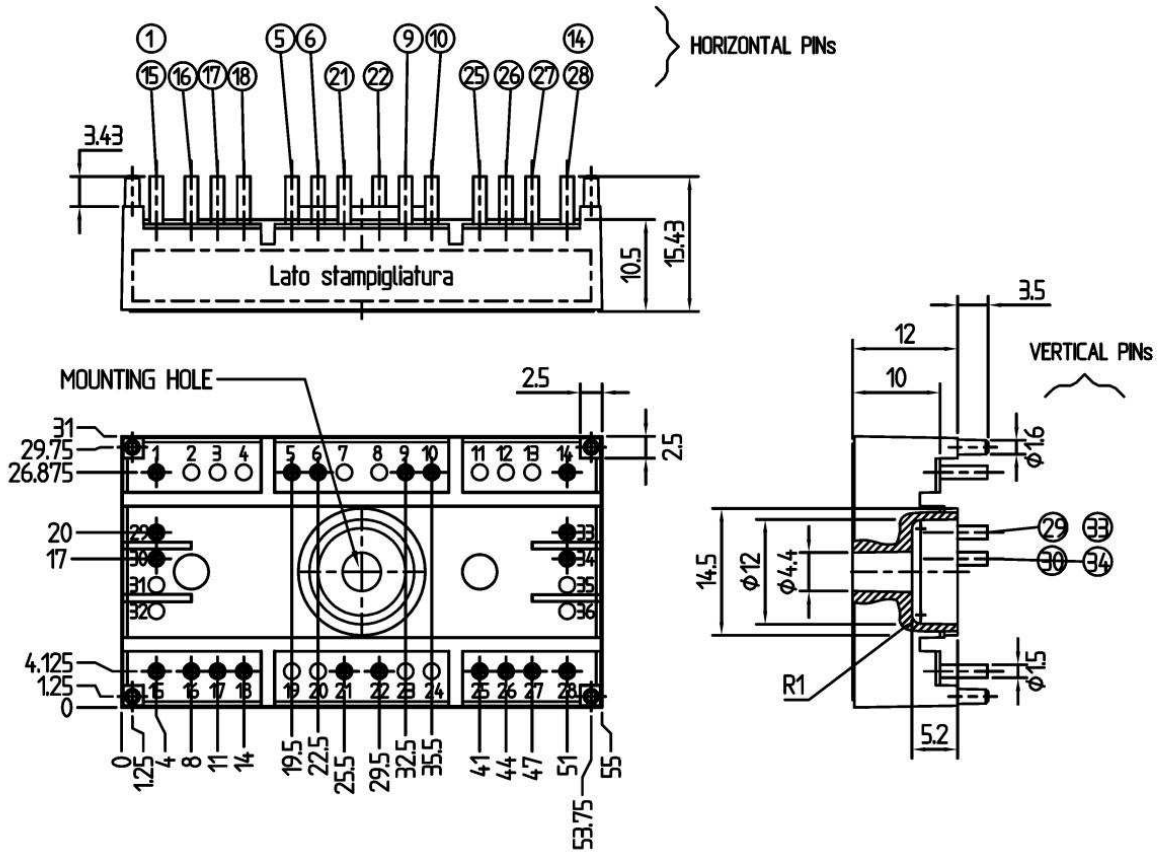
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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.

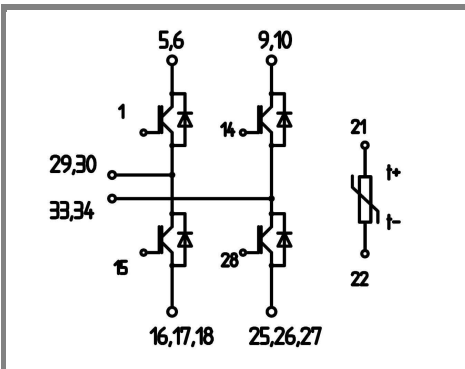




SK50GBB066T



Case T98 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 98

GBB-T