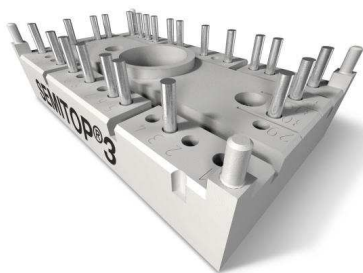


SK50GB12T4T



SEMITOP® 3

IGBT Module

SK50GB12T4T

Target Data

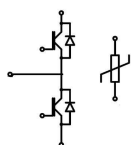
Features

- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

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

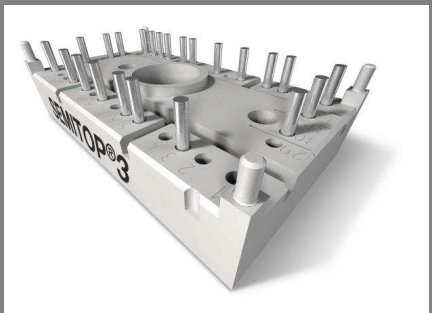


GB-T

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 = 175 °C	T _s = 25 °C	71	A
		T _s = 70 °C	56	A
I _{CRM}	I _{CRM} = 3 x I _{Cnom}		150	A
V _{GES}			± 20	V
t _{psc}	V _{CC} = 800 V; V _{GE} ≤ 15 V; T _j = 150 °C V _{CES} < 1200 V		10	µs
Inverse Diode				
I _F	T _j = 175 °C	T _s = 25 °C	50	A
		T _s = 70 °C	40	A
I _{FRM}	I _{FRM} = 3 x I _{Fnom}		150	A
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C		265	A
Module				
I _{t(RMS)}				A
T _{vj}			-40 ... +175	°C
T _{stg}			-40 ... +125	°C
V _{isol}	AC, 1 min.		2500	V

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 1,7\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$			0,01	mA
					mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			600	nA
					nA
V_{CE0}				1,1	V
				1	V
r_{CE}	$V_{GE} = 15\text{ V}$			15	m Ω
				25	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 50\text{ A}$, $V_{GE} = 15\text{ V}$			1,85	V
				2,05	V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$		2,77	nF
				0,2	nF
C_{oes}				0,16	nF
C_{res}					nF
Q_G	$V_{GE} = -7V \dots +15V$		375		nC
R_{Gint}	$T_j = 25\text{ °C}$		4		Ω
$t_{d(on)}$	$R_{Gon} = 32\text{ }\Omega$ $di/dt = 920\text{ A}/\mu\text{s}$	$V_{CC} = 600V$ $I_C = 50A$	63		ns
t_r			65		ns
E_{on}	$R_{Goff} = 32\text{ }\Omega$ $di/dt = 920\text{ A}/\mu\text{s}$	$T_j = 150\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	8,3		mJ
$t_{d(off)}$			521		ns
t_f			80		ns
E_{off}			5		mJ
$R_{th(j-s)}$	per IGBT		0,9		K/W

SK50GB12T4T



SEMITOP[®] 3

IGBT Module

SK50GB12T4T

Target Data

Features

- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

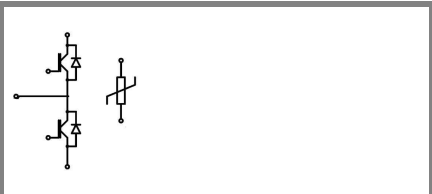
Remarks

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

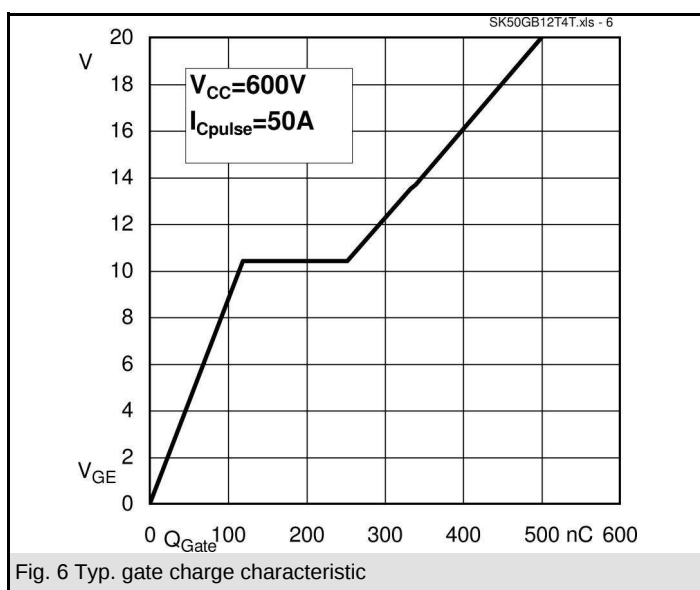
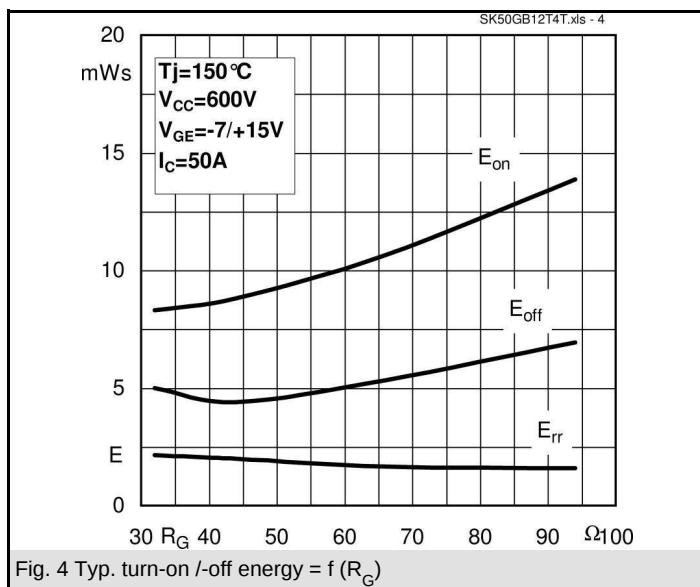
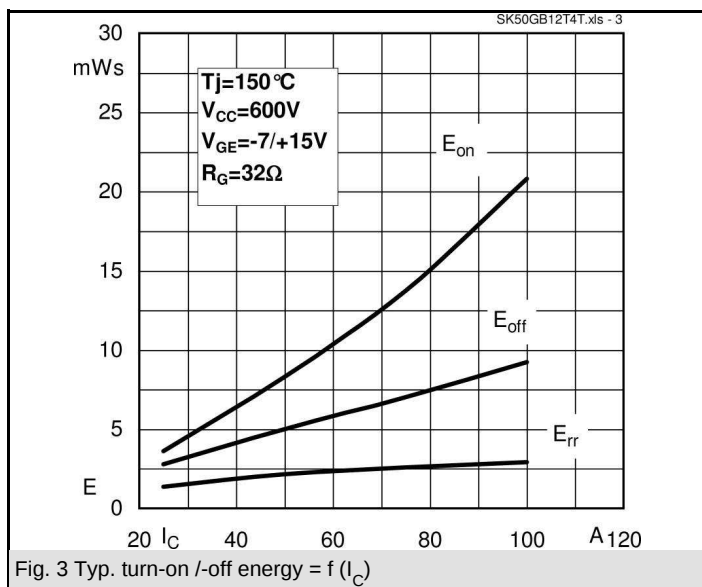
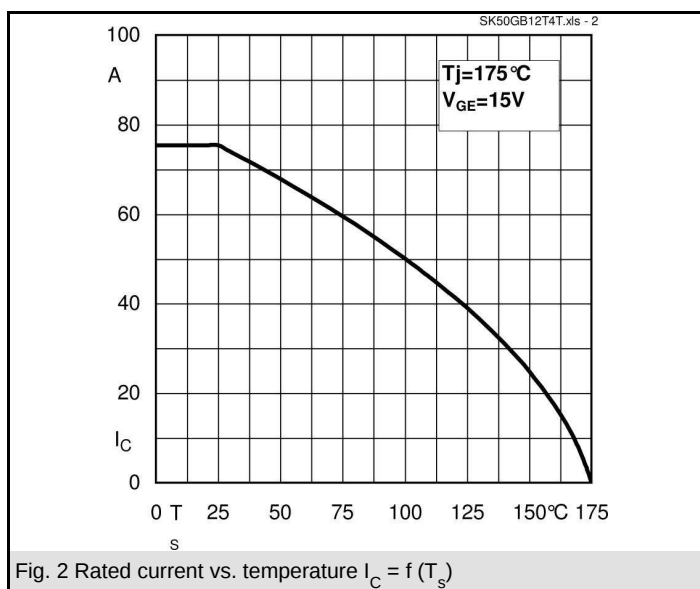
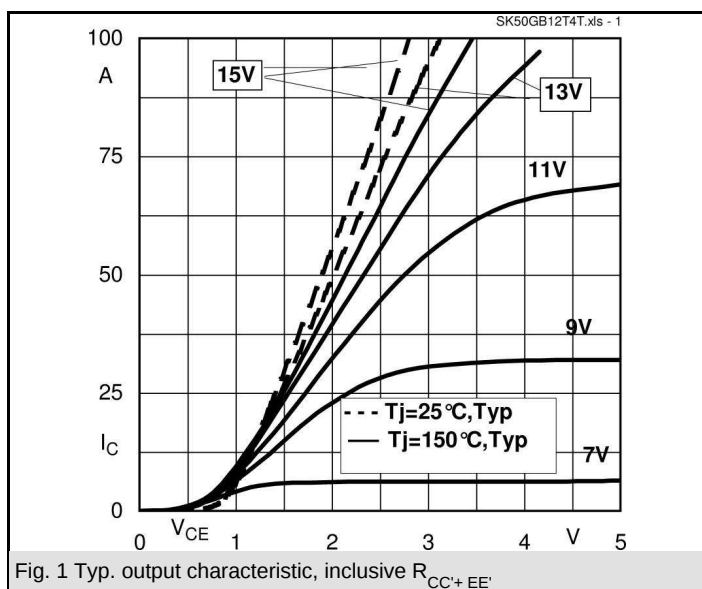
Characteristics		min.	typ.	max.	Units
Symbol	Conditions				
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50\text{ A}$; $V_{GE} = 0\text{ V}$				
	$T_j = 25\text{ °C}_{chiplev.}$		2,2	2,55	V
	$T_j = 150\text{ °C}_{chiplev.}$		2,18	2,5	V
V_{F0}					
	$T_j = 25\text{ °C}$		1,3	1,5	V
	$T_j = 150\text{ °C}$		0,9	1,1	V
r_F					
	$T_j = 25\text{ °C}$		19	21	mΩ
	$T_j = 150\text{ °C}$		26	28	mΩ
I_{RRM}	$I_F = 50\text{ A}$		30		A
Q_{rr}	$di/dt = 920\text{ A/μs}$		7,2		μC
E_{rr}	$V_{CC} = 600\text{ V}$		2,15		mJ
$R_{th(j-s)D}$	per diode		1,24		K/W
M_s	to heat sink			2,5	Nm
w			30		g
Temperature sensor					
R_{100}	$T_s = 100\text{ °C}$ ($R_{25} = 5\text{ kΩ}$)		493±5%		Ω

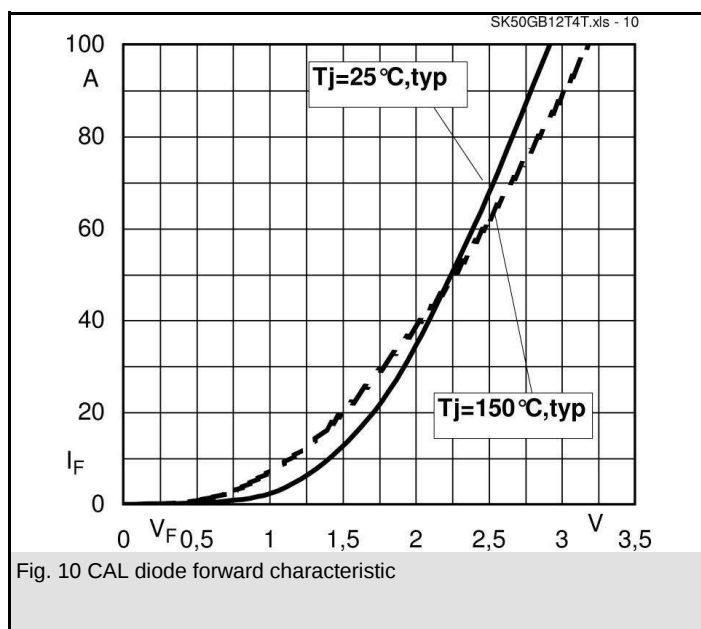
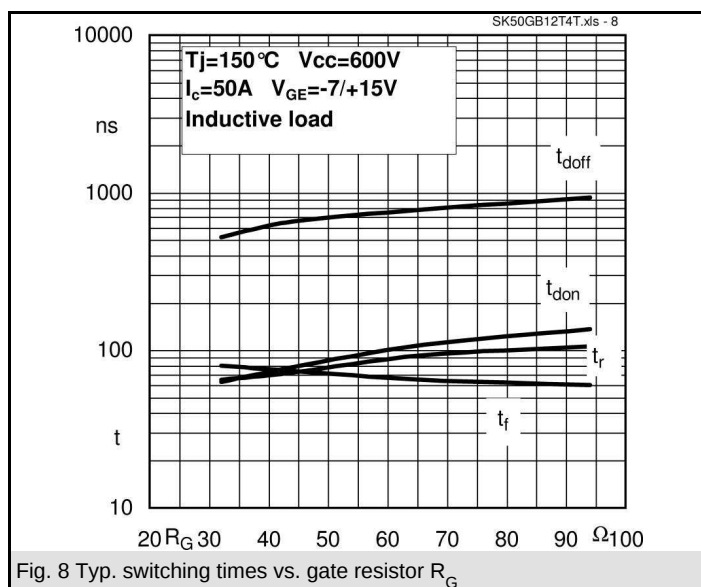
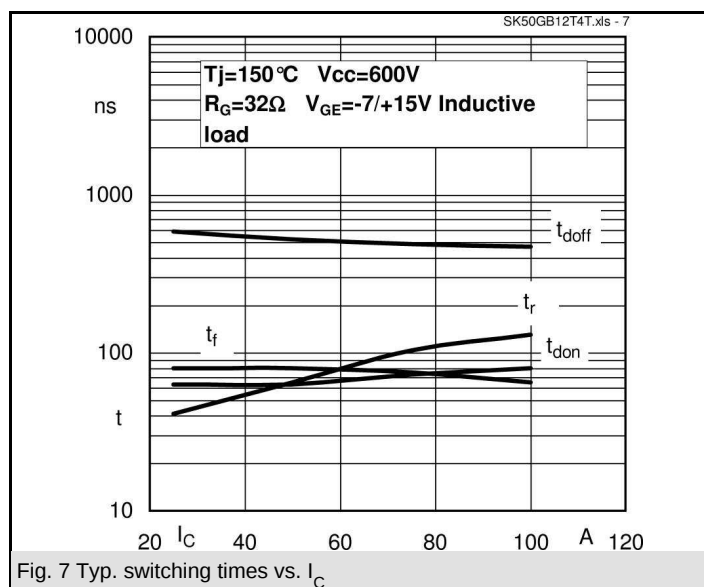
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

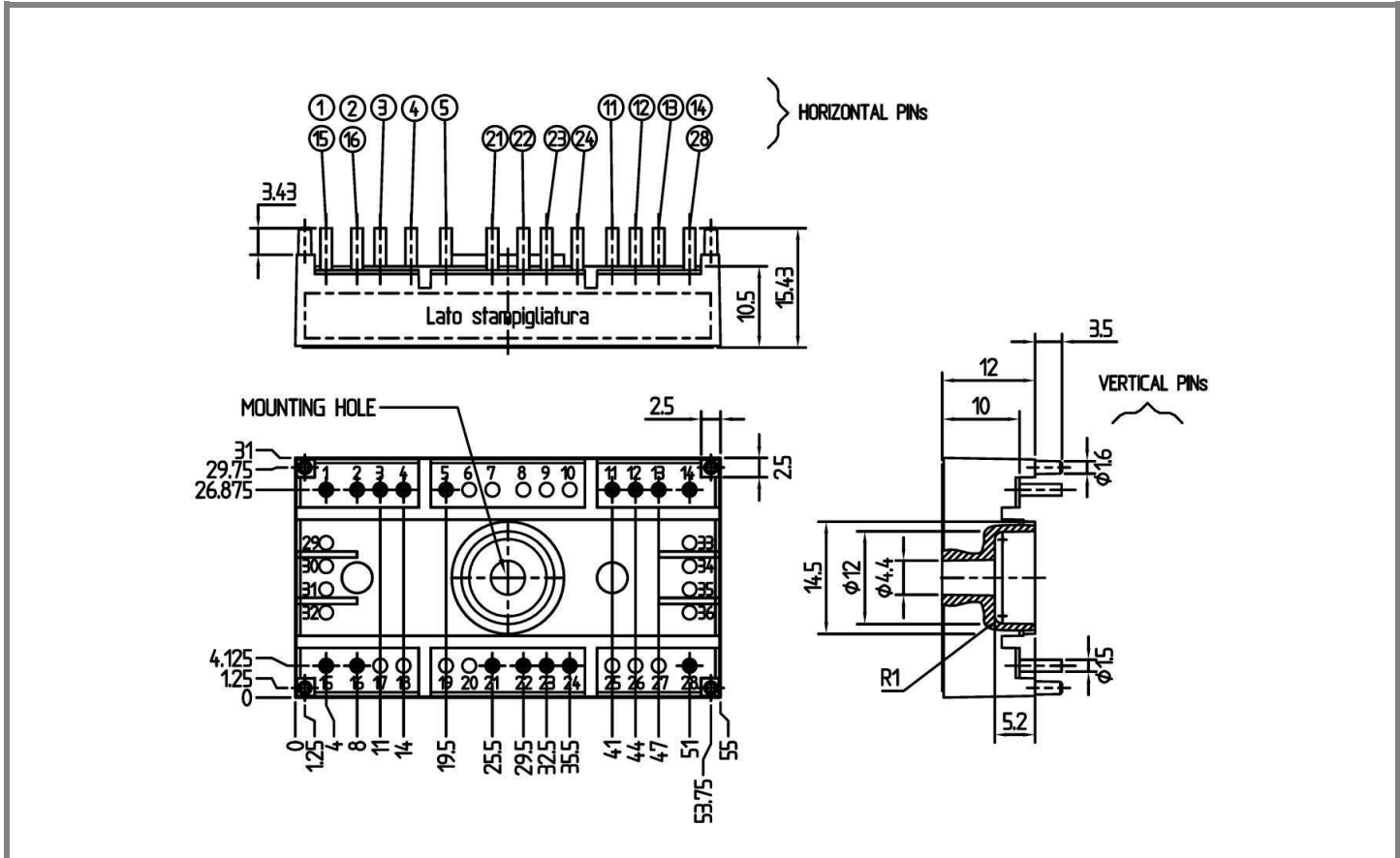
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and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



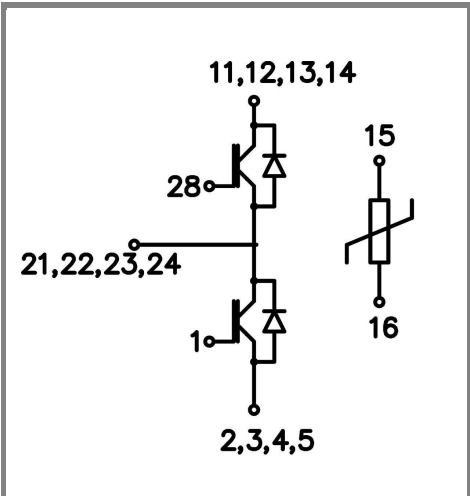
GB-T







Case T73 (Suggested hole diameter for the solder pins and mounting plastic pins: 2mm)



Case T73 GB-T

GB-T