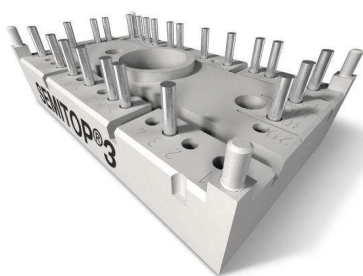


SK50GB12T4T



SEMITOP® 3

IGBT Module

SK50GB12T4T

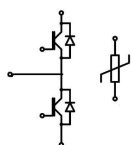
Features

- 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

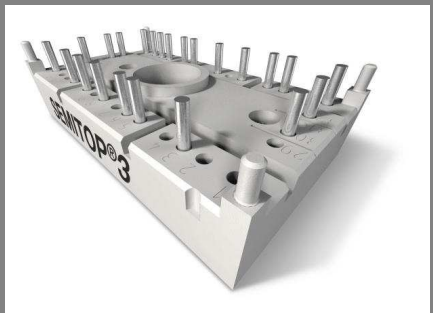


GB-T

Absolute Maximum Ratings		$T_s = 25\text{ }^{\circ}\text{C}$, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$		1200	V
I_C	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	71	A
		$T_s = 70\text{ }^{\circ}\text{C}$	56	A
I_{CRM}	$I_{CRM} = 3 \times I_{Cnom}$		150	A
V_{GES}			± 20	V
t_{psc}	$V_{CC} = 800\text{ V}$; $V_{GE} \leq 15\text{ V}$; $T_j = 150\text{ }^{\circ}\text{C}$ $V_{CES} < 1200\text{ V}$		10	μs
Inverse Diode				
I_F	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	50	A
		$T_s = 70\text{ }^{\circ}\text{C}$	40	A
I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}$		150	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$		265	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +175	$^{\circ}\text{C}$
T_{stg}			-40 ... +125	$^{\circ}\text{C}$
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}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$			1,0	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
C_{oes}				0,2	nF
C_{res}				0,16	nF
Q_G	$V_{GE} = -7\text{ V} \dots +15\text{ V}$			375	nC
R_{Gint}	$T_j = 25\text{ °C}$			4	Ω
$t_{d(on)}$	$R_{Gon} = 32\text{ }\Omega$ $di/dt = 920\text{ A}/\mu\text{s}$	$V_{CC} = 600\text{ V}$ $I_C = 50\text{ A}$		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

Features

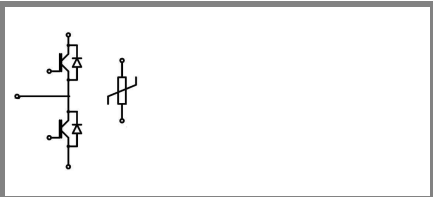
- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

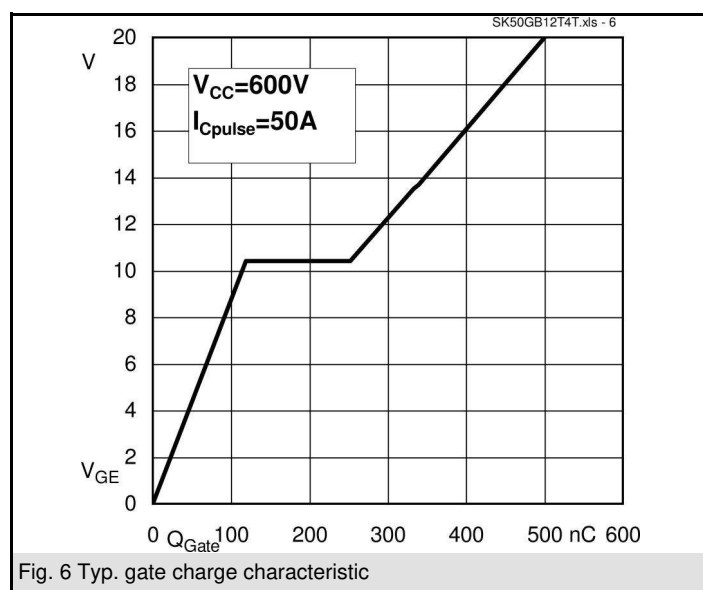
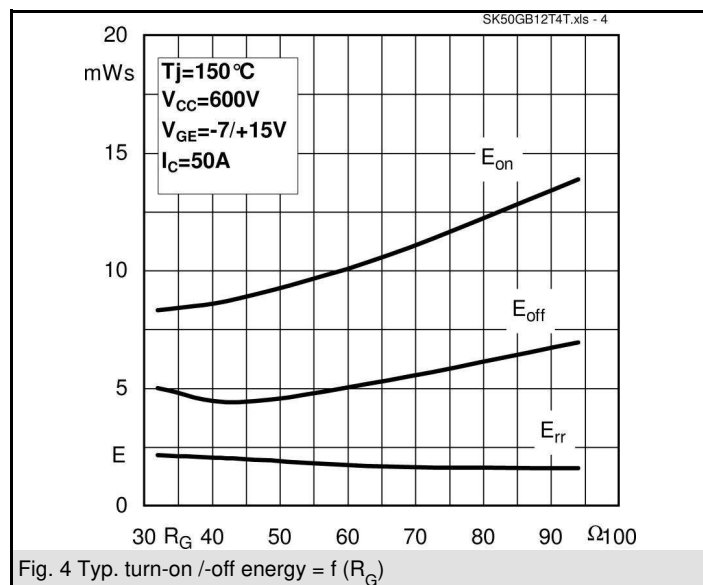
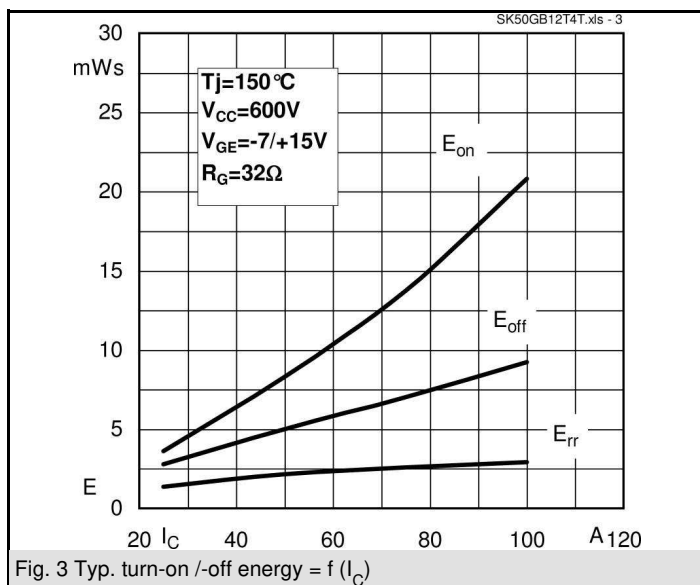
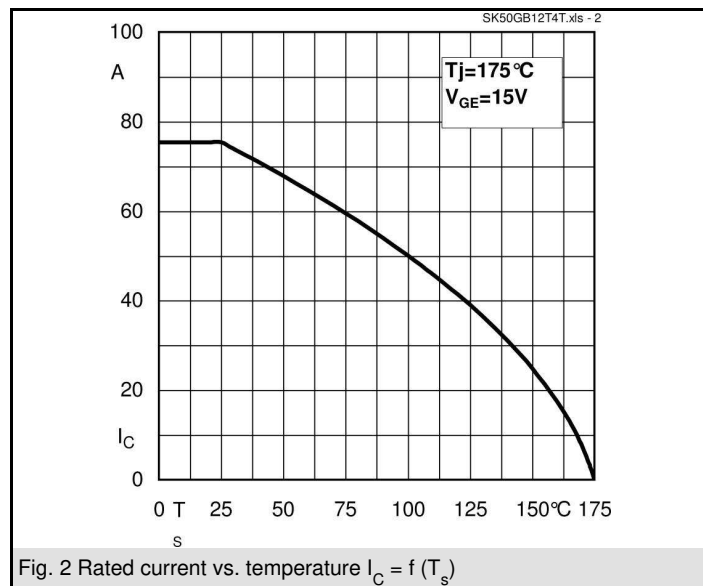
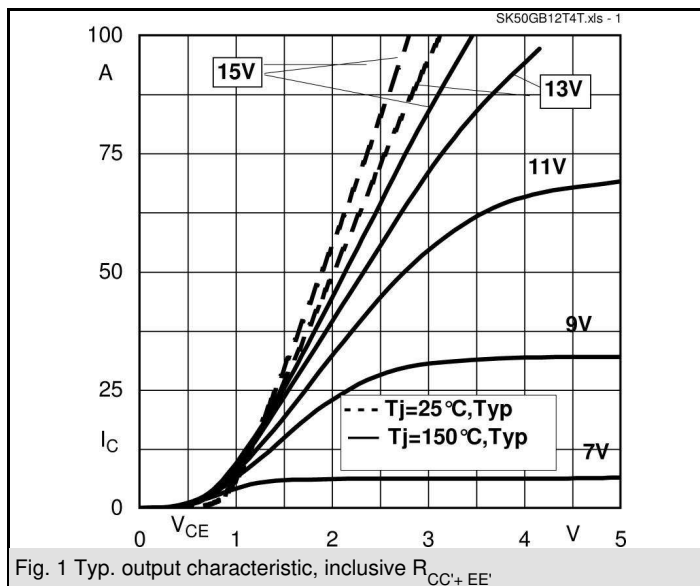
Remarks

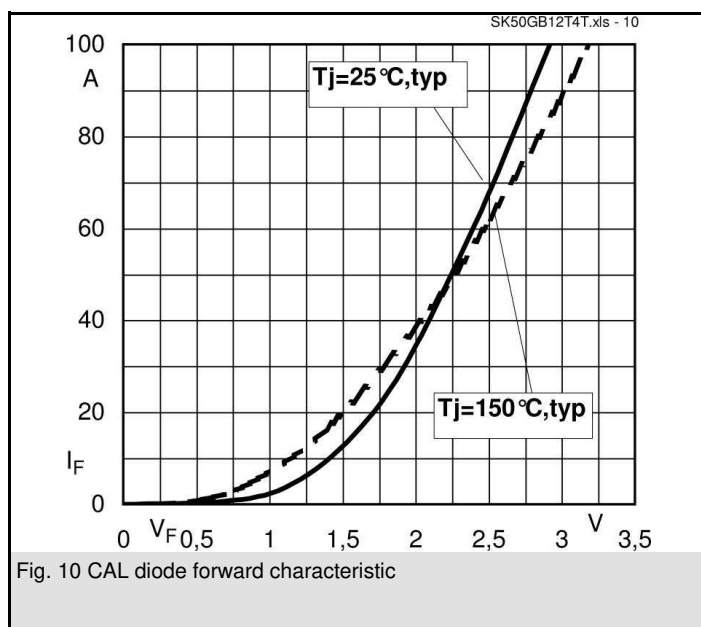
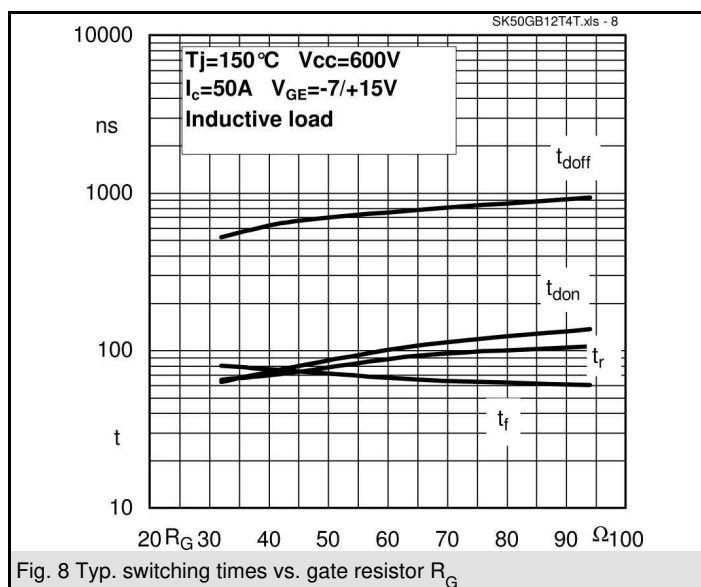
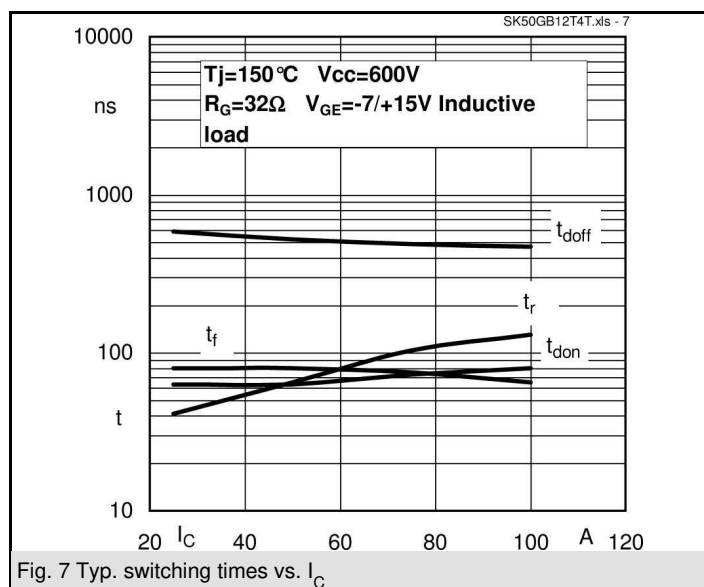
- $V_{CE,sat}$, V_F = chip level value

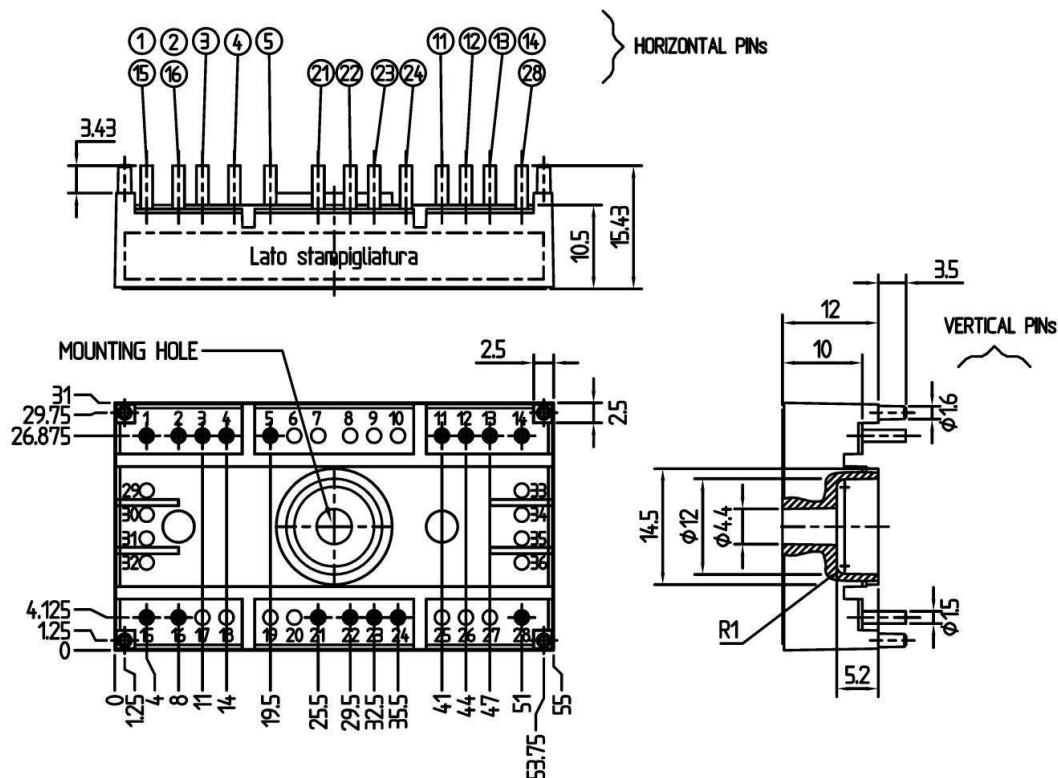
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 50 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2,2	2,55	V
		T _j = 150 °C _{chiplev.}		2,18	2,5	V
V _{F0}		T _j = 25 °C		1,3	1,5	V
		T _j = 150 °C		0,9	1,1	V
r _F		T _j = 25 °C		19	21	mΩ
		T _j = 150 °C		26	28	mΩ
I _{RRM}	I _F = 50 A	T _j = 150 °C		30		A
Q _{rr}	di/dt = 920 A/μs			7,2		μC
E _{rr}	V _{CC} = 600V			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°C (R ₂₅ =5kΩ)			493±5%		Ω



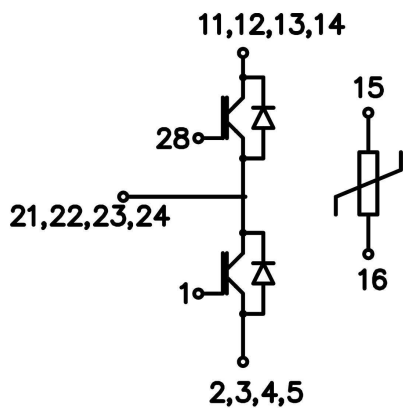
GB-T







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



Case T73

GB-T

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

*IMPORTANT INFORMATION AND WARNINGS

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