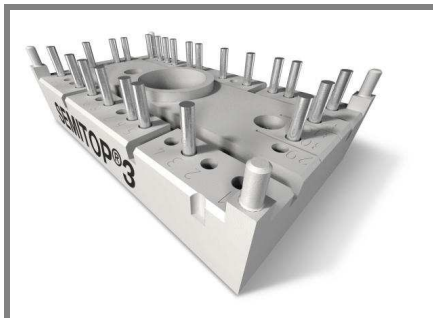


# SK75GB12T4T



SEMITOP® 3

## IGBT Module

SK75GB12T4 T

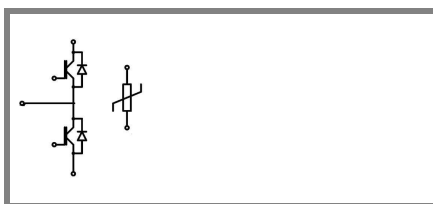
### Features

- 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

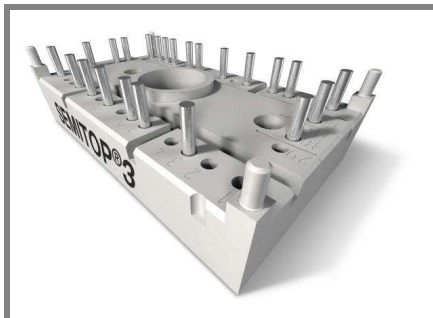


GB-T

Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT</b>			
$V_{CES}$	$T_j = 25\text{ °C}$	1200	V
$I_C$	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	80
		$T_s = 70\text{ °C}$	65
$I_{CRM}$	$I_{CRM} = 3 \times I_{Cnom}$	225	A
$V_{GES}$		$\pm 20$	V
$t_{psc}$	$V_{CC} = 800\text{ V}$ ; $V_{GE} \leq 15\text{ V}$ ; $T_j = 150\text{ °C}$ $V_{CES} < 1200\text{ V}$	10	$\mu\text{s}$
<b>Inverse Diode</b>			
$I_F$	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	70
		$T_s = 70\text{ °C}$	55
$I_{FRM}$	$I_{FRM} = 3 \times I_{Fnom}$	225	A
$I_{FSM}$	$t_p = 10\text{ ms}$ ; half sine wave $T_j = 150\text{ °C}$	425	A
<b>Module</b>			
$I_t(RMS)$			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
<b>IGBT</b>					
$V_{GE(th)}$	$V_{GE} = V_{CE}$ , $I_C = 3\text{ mA}$	5	5,8	6,5	V
$I_{CES}$	$V_{GE} = 0\text{ V}$ , $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$		1	mA
		$T_j = 125\text{ °C}$			mA
$I_{GES}$	$V_{CE} = 0\text{ V}$ , $V_{GE} = 20\text{ V}$	$T_j = 25\text{ °C}$		600	nA
		$T_j = 125\text{ °C}$			nA
$V_{CE0}$		$T_j = 25\text{ °C}$	1,1	1,3	V
		$T_j = 150\text{ °C}$	1	1,2	V
$r_{CE}$	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	10		m $\Omega$
		$T_j = 150\text{ °C}$	16		m $\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 75\text{ A}$ , $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,85	2,05	V
		$T_j = 150\text{ °C}_{chiplev.}$	2,25	2,45	V
$C_{ies}$	$V_{CE} = 25$ , $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	4,4		nF
$C_{oes}$			0,29		nF
$C_{res}$			0,235		nF
$Q_G$	$V_{GE} = -7\text{ V} \dots +15\text{ V}$		570		nC
$R_{Gint}$	$T_j = 25\text{ °C}$		10		$\Omega$
$t_{d(on)}$	$R_{Gon} = 24\text{ }\Omega$ $di/dt = 1360\text{ A}/\mu\text{s}$	$V_{CC} = 600\text{ V}$ $I_C = 75\text{ A}$	63		ns
$t_r$			65		ns
$E_{on}$			13,6		mJ
$t_{d(off)}$	$R_{Goff} = 24\text{ }\Omega$	$T_j = 150\text{ °C}$ $V_{GE} = -7/+15\text{ V}$	521		ns
			80		ns
$E_{off}$			8,2		mJ
$R_{th(j-s)}$	per IGBT		0,74		K/W

# SK75GB12T4T



**SEMITOP® 3**

## IGBT Module

SK75GB12T4 T

### Features

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

### Typical Applications\*

### Remarks

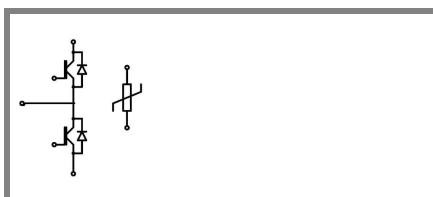
- $V_{CE,sat}$ ,  $V_F$  = chip level value

### Characteristics

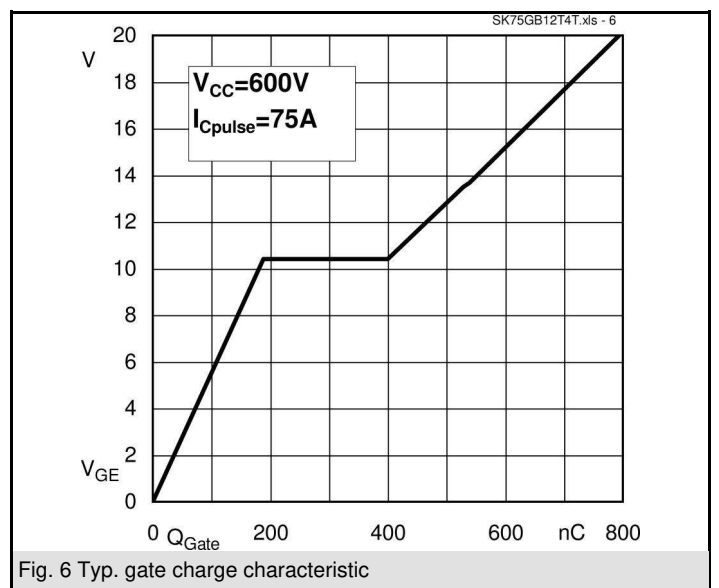
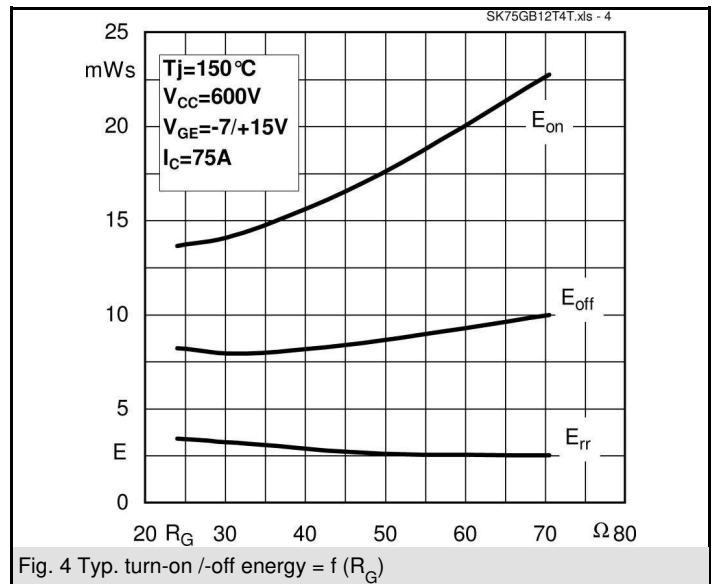
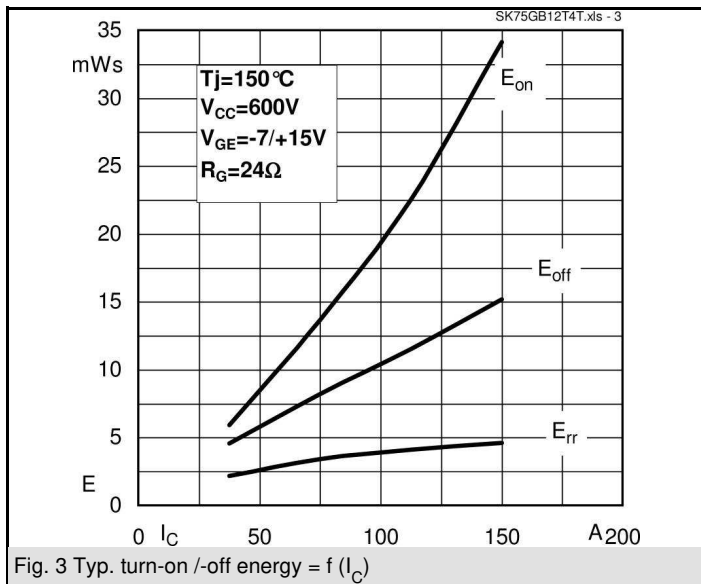
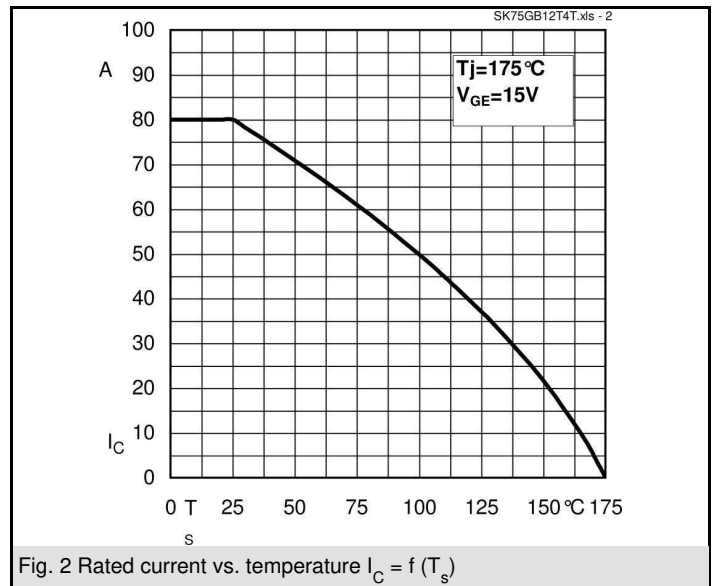
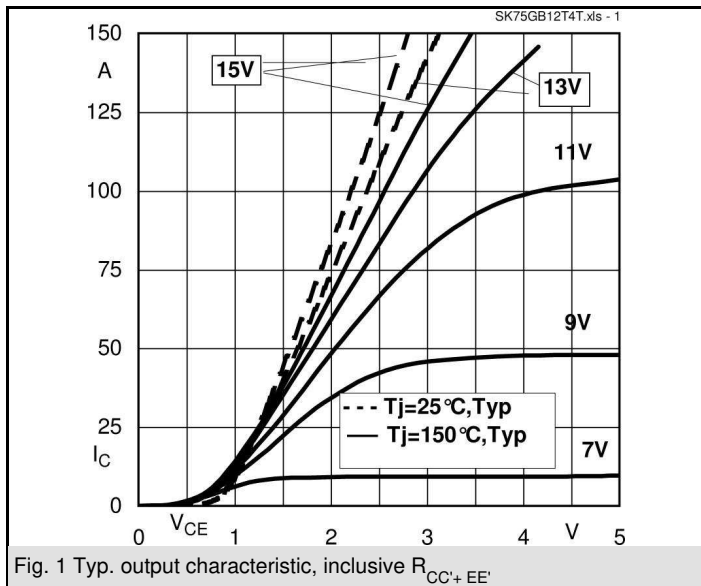
Symbol	Conditions	min.	typ.	max.	Units
<b>Inverse Diode</b>					
$V_F = V_{EC}$	$I_{Fnom} = 75 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$	2,1	2,5	V
		$T_j = 150 \text{ }^\circ\text{C}_{chiplev.}$	2,4	2,5	V
$V_{F0}$		$T_j = 25 \text{ }^\circ\text{C}$	1,3	1,5	V
		$T_j = 150 \text{ }^\circ\text{C}$	0,9	1,1	V
$r_F$		$T_j = 25 \text{ }^\circ\text{C}$	12	13,3	mΩ
		$T_j = 150 \text{ }^\circ\text{C}$	16	17,3	mΩ
$I_{RRM}$	$I_F = 75 \text{ A}$		41		A
$Q_{rr}$	$di/dt = 1360 \text{ A}/\mu\text{s}$		10,6		μC
$E_{rr}$	$V_{CC} = 600\text{V}$		3,39		mJ
$R_{th(j-s)D}$	per diode		0,97		K/W
$M_s$	to heat sink			2,5	Nm
w			30		g
<b>Temperature sensor</b>					
$R_{100}$	$T_s = 100^\circ\text{C}$ ( $R_{25} = 5\text{k}\Omega$ )		493±5%		Ω

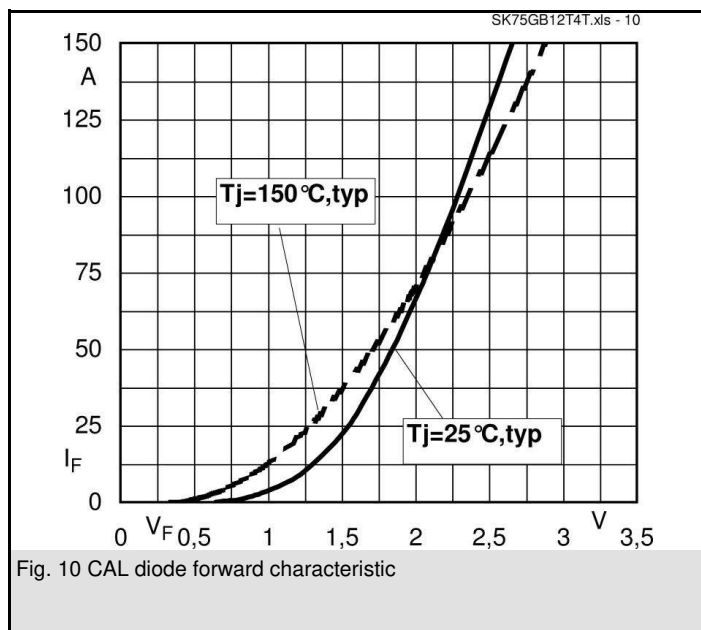
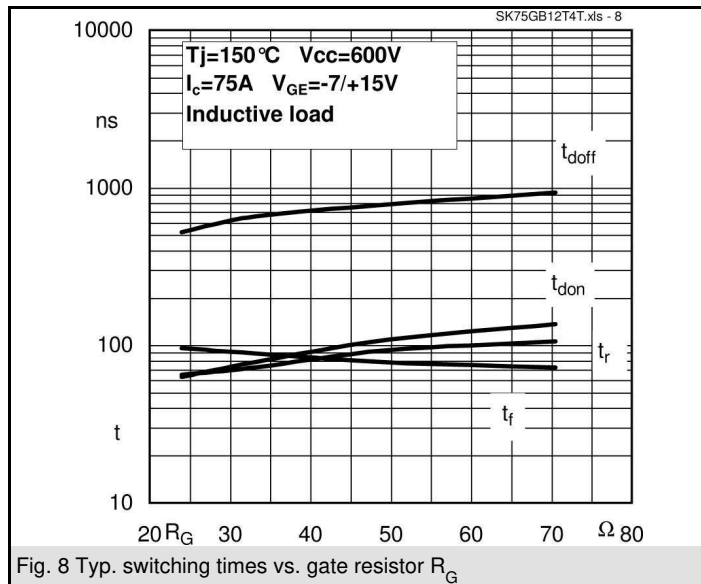
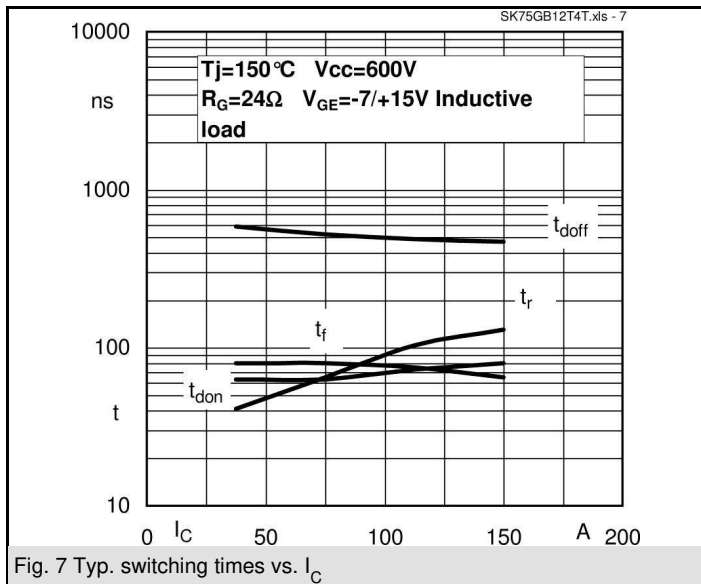
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

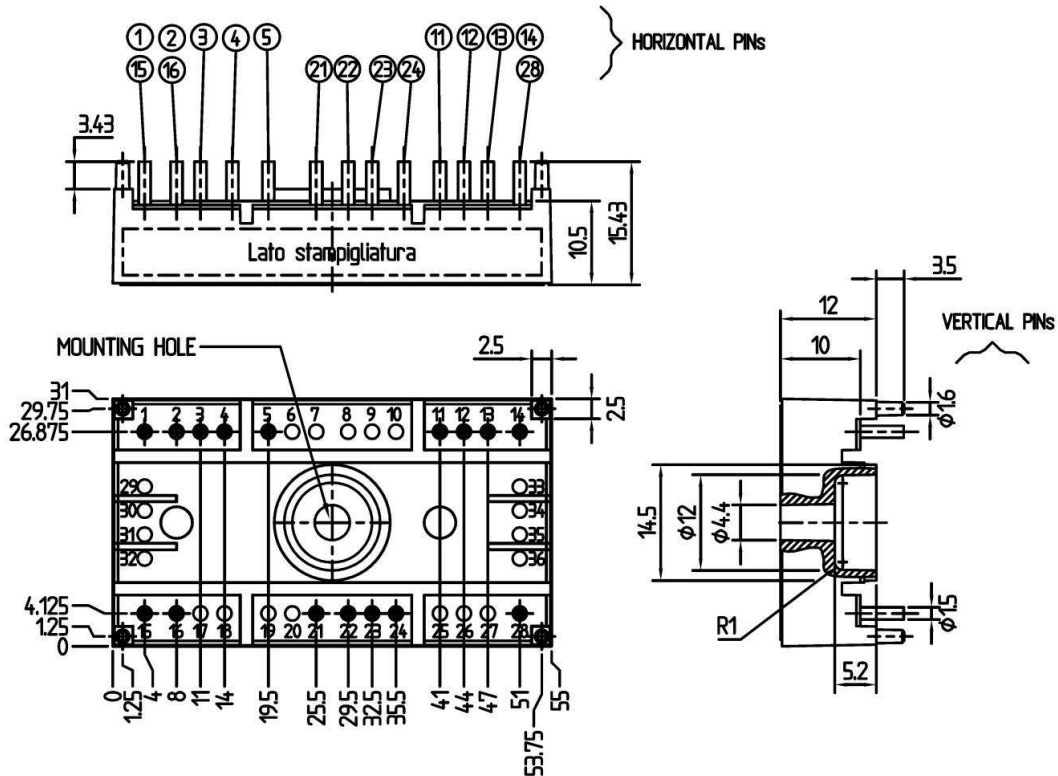
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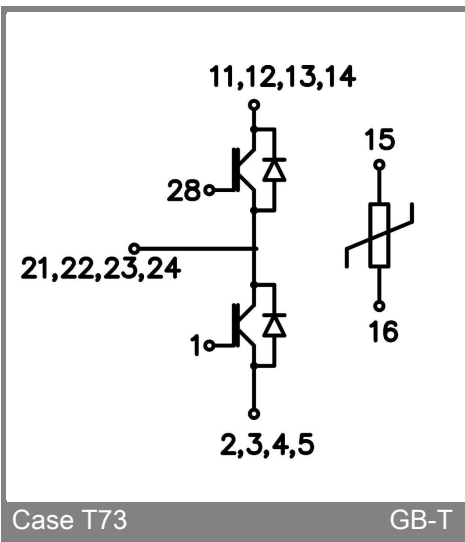
GB-T







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



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

**\*IMPORTANT INFORMATION AND WARNINGS**

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