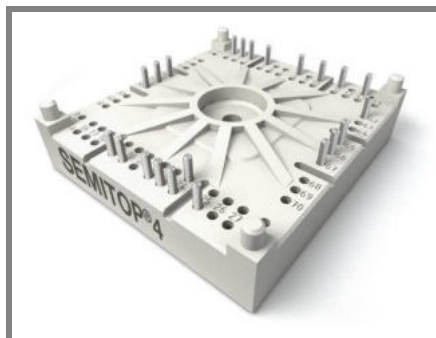




SEMITOP® 4

IGBT Module

SK75GD12T4T

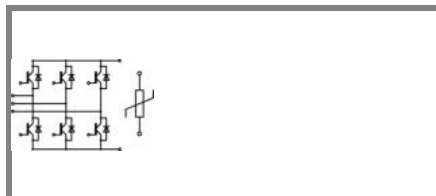
Features

- One screw mounting module
- Fully compatible with SEMITOP®1,2,3
- Improved thermal performances by aluminium oxide substrate
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

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

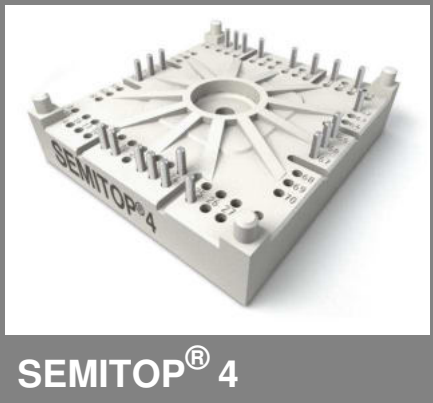


GD-T

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	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	102	A
		$T_s = 70\text{ }^{\circ}\text{C}$	81	A
I_{CRM}	$I_{CRM} = 3 \times I_{Cnom}$		225	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	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	83	A
		$T_s = 70\text{ }^{\circ}\text{C}$	66	A
I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}$		225	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$		425	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					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 3\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$			$T_j = 25\text{ °C}$	1,36
				$T_j = 125\text{ °C}$	mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$			$T_j = 25\text{ °C}$	600
				$T_j = 125\text{ °C}$	nA
V_{CE0}				$T_j = 25\text{ °C}$	1,1
				$T_j = 150\text{ °C}$	1,2
r_{CE}	$V_{GE} = 15\text{ V}$			$T_j = 25\text{ °C}$	10
				$T_j = 150\text{ °C}$	16
$V_{CE(sat)}$	$I_{Cnom} = 75\text{ A}$, $V_{GE} = 15\text{ V}$			$T_j = 25\text{ °C}_{chiplev.}$	1,85
				$T_j = 150\text{ °C}_{chiplev.}$	2,45
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$				4,4
C_{oes}					0,29
C_{res}					0,235
Q_G	$V_{GE} = -7V...+15V$		570		nC
R_{Gint}	$T_j = 25\text{ °C}$		10		Ω
$t_{d(on)}$	$R_{Gon} = 24\text{ }\Omega$				63
t_r					65
E_{on}	$R_{Goff} = 24\text{ }\Omega$ $di/dt = 1360\text{ A}/\mu s$			$V_{CC} = 600V$ $I_C = 75A$	13,6
$t_{d(off)}$				$T_j = 150\text{ °C}$	521
t_f				$V_{GE} = -7/+15V$	80
E_{off}					8,2
$R_{th(j-s)}$	per IGBT		0,51		K/W

SK75GD12T4T



IGBT Module

SK75GD12T4T

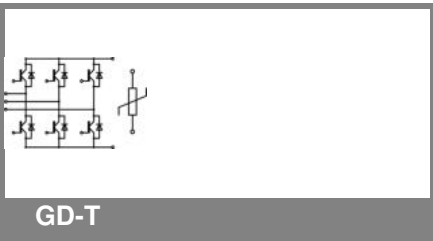
Features

- One screw mounting module
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- Improved thermal performances by aluminium oxide substrate
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

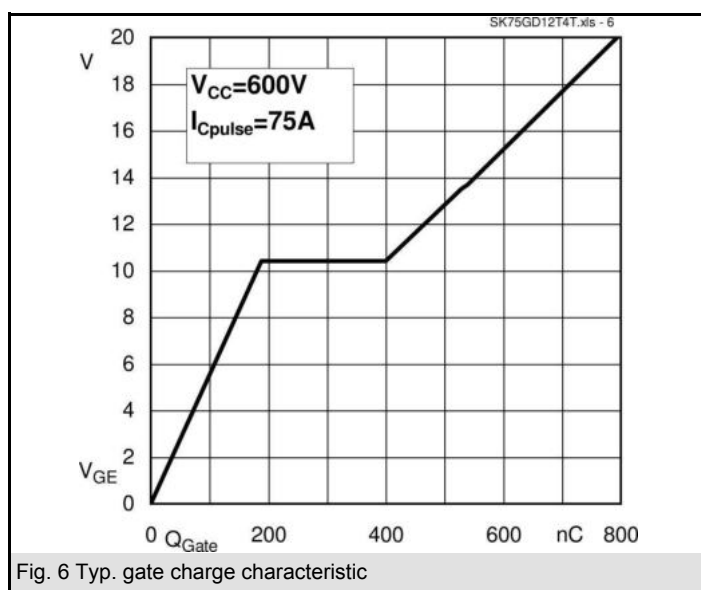
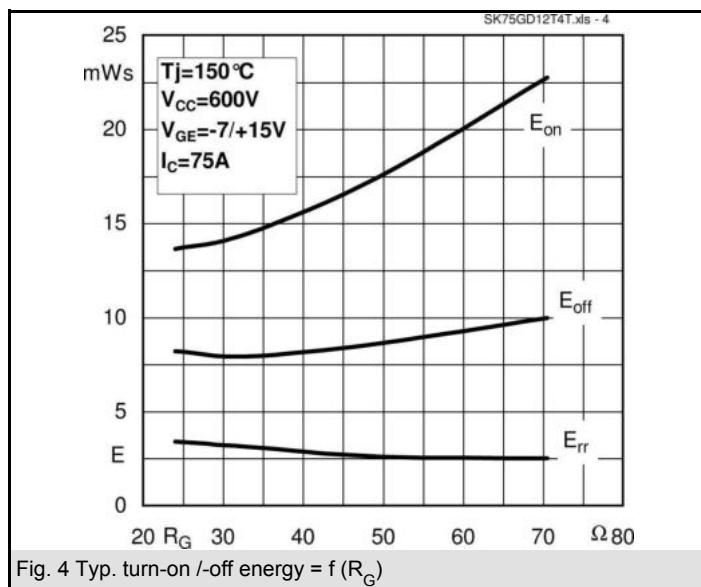
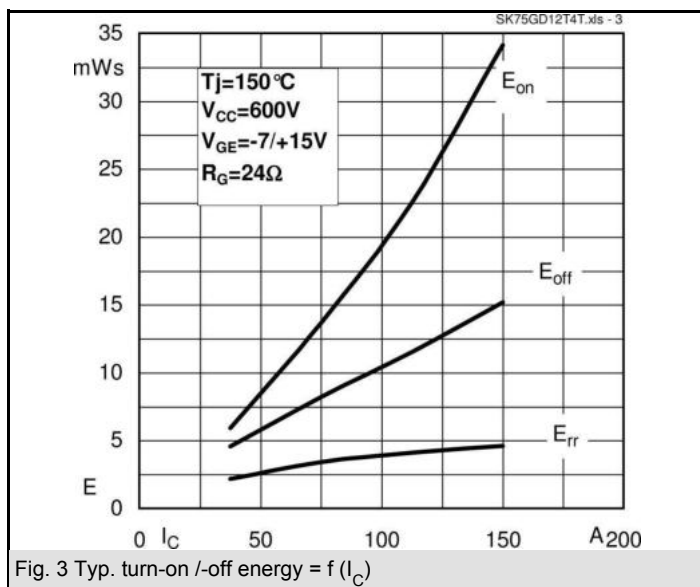
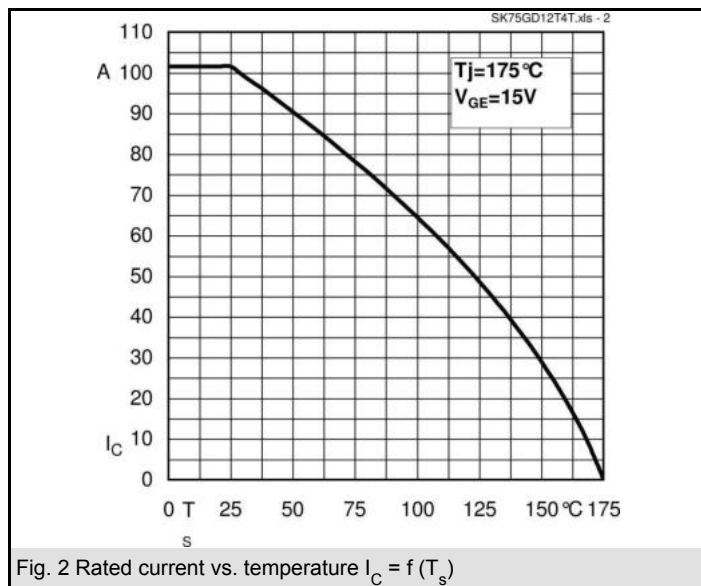
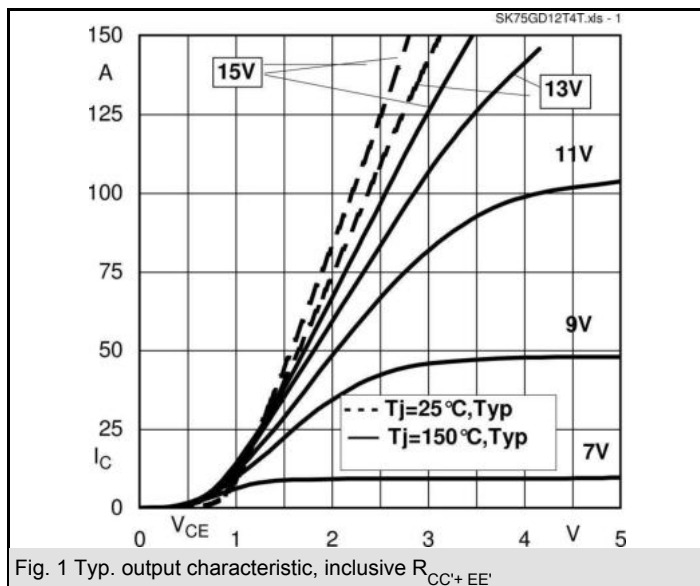
Typical Applications*

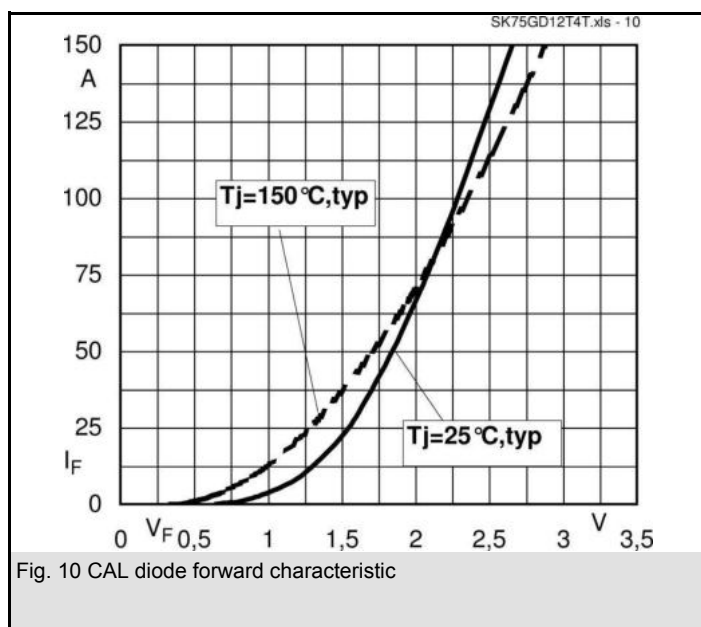
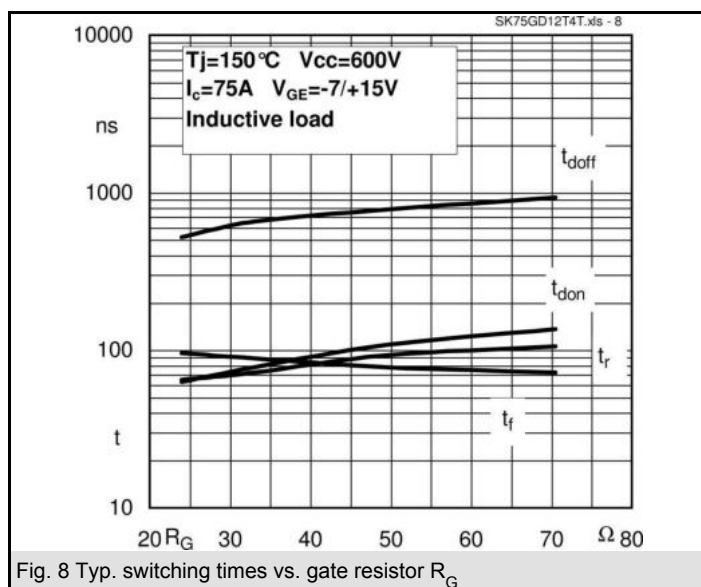
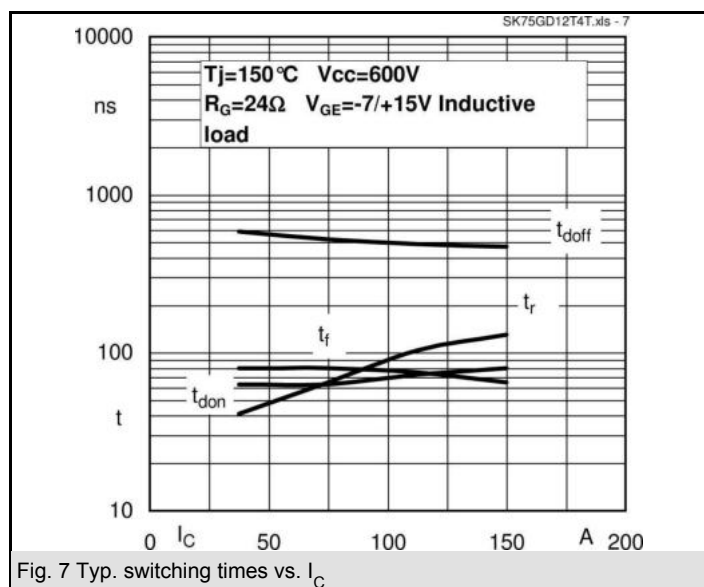
Remarks

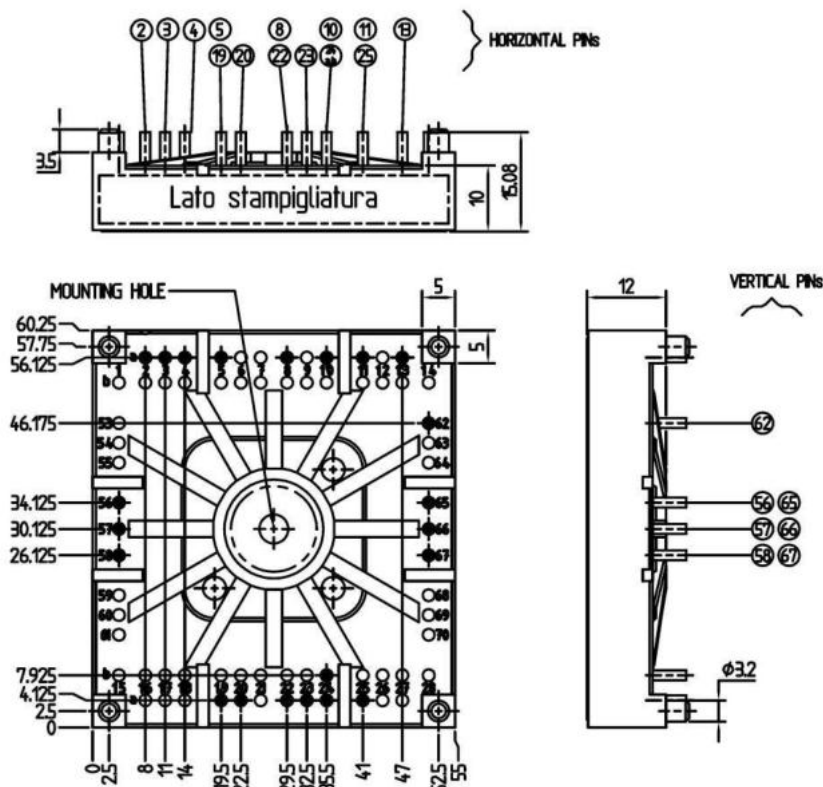
- $V_{CE,sat}$, V_F = chip level value



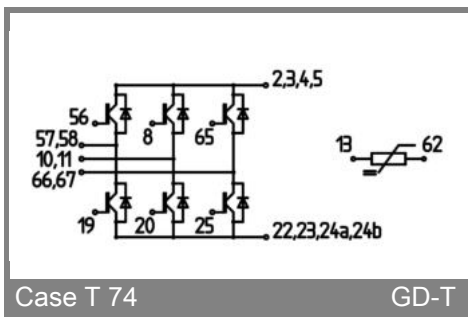
Characteristics		min.	typ.	max.	Units
Symbol	Conditions				
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 75\text{ A}$; $V_{GE} = 0\text{ V}$				
	$T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$		2,2	2,5	V
	$T_j = 150\text{ }^{\circ}\text{C}_{chiplev.}$		2,1	2,4	V
V_{F0}					
	$T_j = 25\text{ }^{\circ}\text{C}$		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}	$V_{CC} = 600\text{ V}$		3,38		mJ
$R_{th(j-s)D}$	per diode		0,75		K/W
M_s	to heat sink	2,5		2,75	Nm
w			60		g
Temperature sensor					
R_{100}	$T_s = 100\text{ }^{\circ}\text{C}$ ($R_{25} = 5\text{ k}\Omega$)		493±5%		Ω







Case T74 (Suggested hole diameter for the solder pins in the circuit board: 2mm. Suggested hole diameter for the mounting pins in the circuit board: 3,6mm)



Case T 74

GD-T

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

*IMPORTANT INFORMATION AND WARNINGS

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