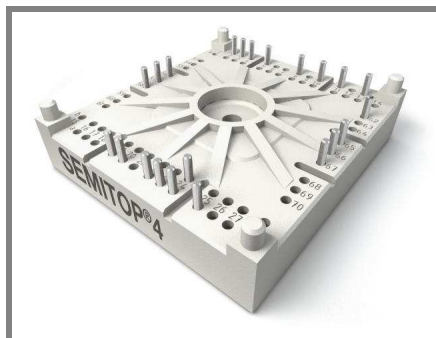


SK75GD12T4T



SEMITOP® 4

IGBT Module

SK75GD12T4T

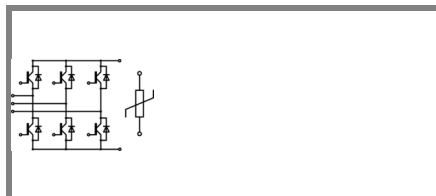
Features

- 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

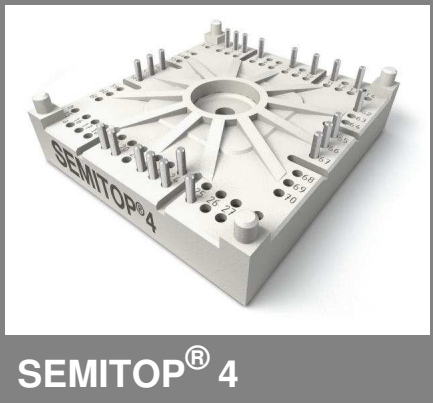


GD-T

Absolute Maximum Ratings				$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions			Values	Units
IGBT					
V_{CES}	$T_j = 25\text{ °C}$			1200	V
I_C	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$		102	A
		$T_s = 70\text{ °C}$		81	A
I_{CRM}	$I_{CRM} = 3 \times I_{Cnom}$			225	A
V_{GES}				± 20	V
t_{psc}	$V_{CC} = 800\text{ V}$; $V_{GE} \leq 15\text{ V}$; $T_j = 150\text{ °C}$ $V_{CES} < 1200\text{ V}$			10	μs
Inverse Diode					
I_F	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$		83	A
		$T_s = 70\text{ °C}$		66	A
I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}$			225	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ °C}$			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 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 3 mA		5	5,8	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C	1,36			mA
		T _j = 125 °C				mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _j = 25 °C	600			nA
		T _j = 125 °C				nA
V _{CE0}		T _j = 25 °C	1,1		1,3	V
		T _j = 150 °C	1		1,2	V
r _{CE}	V _{GE} = 15 V	T _j = 25°C	10			mΩ
		T _j = 150°C	16			mΩ
V _{CE(sat)}	I _{Cnom} = 75 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}	1,85	2,05		V
		T _j = 150°C _{chiplev.}	2,25	2,45		V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz	4,4			nF
C _{oes}			0,29			nF
C _{res}			0,235			nF
Q _G	V _{GE} =-7V...+15V		570			nC
R _{Gint}	T _j = 25 °C		10			Ω
t _{d(on)}	R _{Gon} = 24 Ω	V _{CC} = 600V I _C = 75A T _j = 150 °C V _{GE} = -7/+15V	63			ns
t _r			65			ns
E _{on}				13,6		
t _{d(off)}	R _{Goff} = 24 Ω		521			ns
t _f	di/dt = 1360 A/μs		80			ns
E _{off}			8,2			mJ
R _{th(j-s)}	per IGBT		0,51			K/W

SK75GD12T4T



IGBT Module

SK75GD12T4T

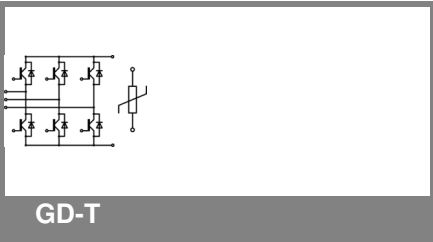
Features

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

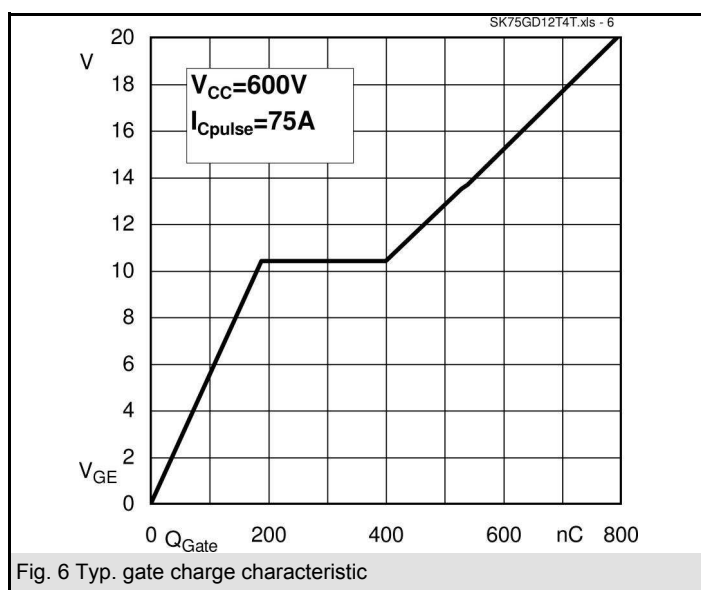
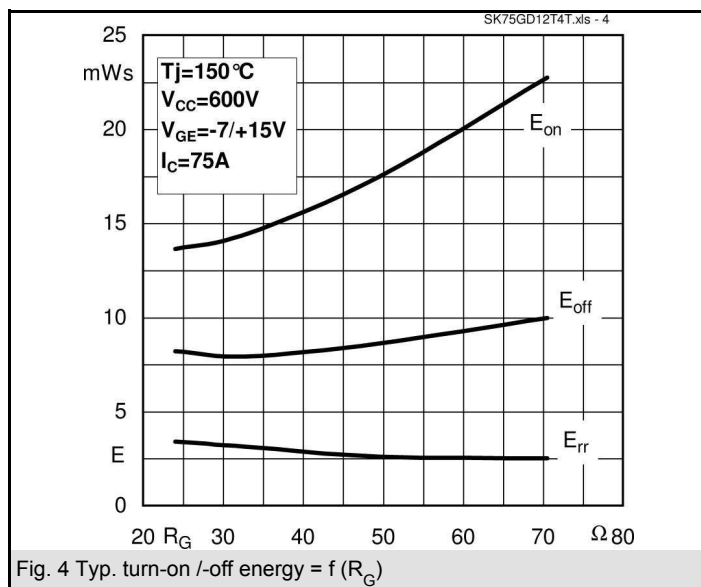
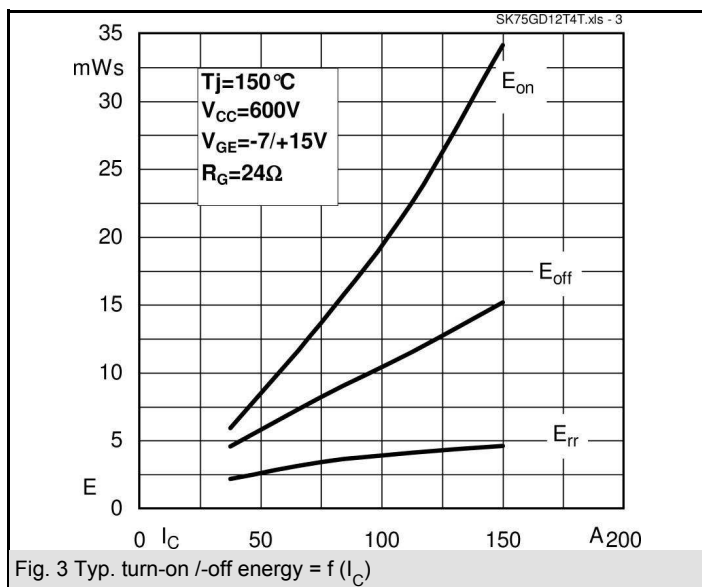
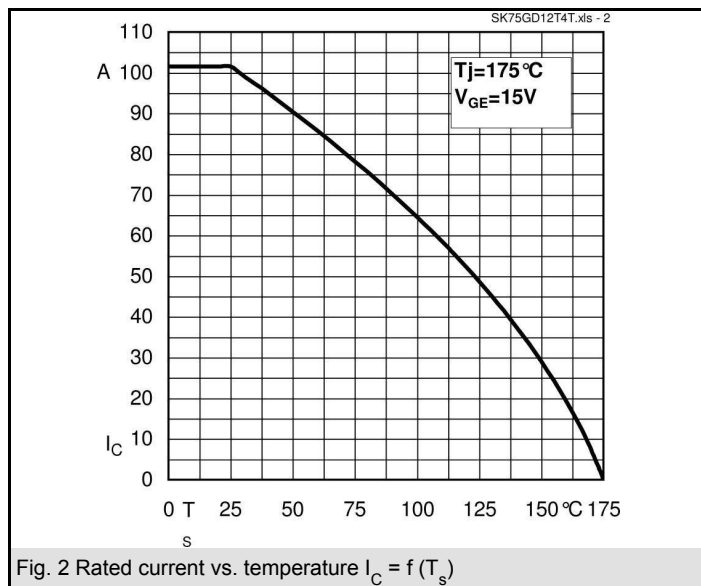
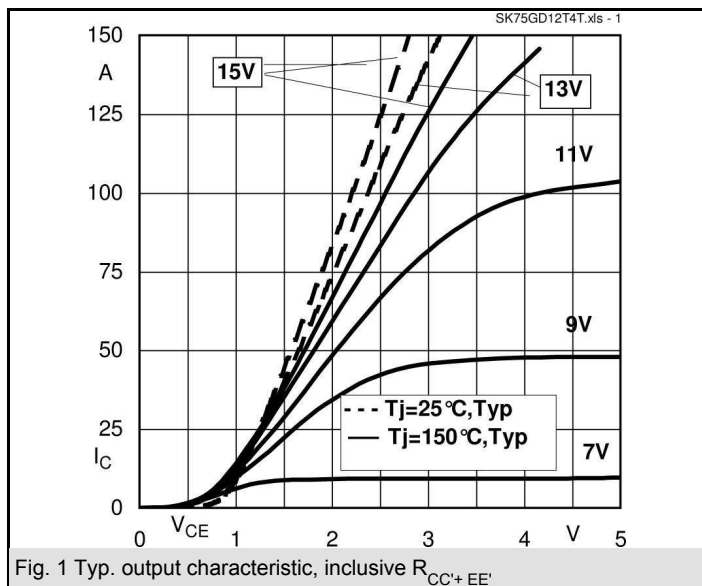
Typical Applications*

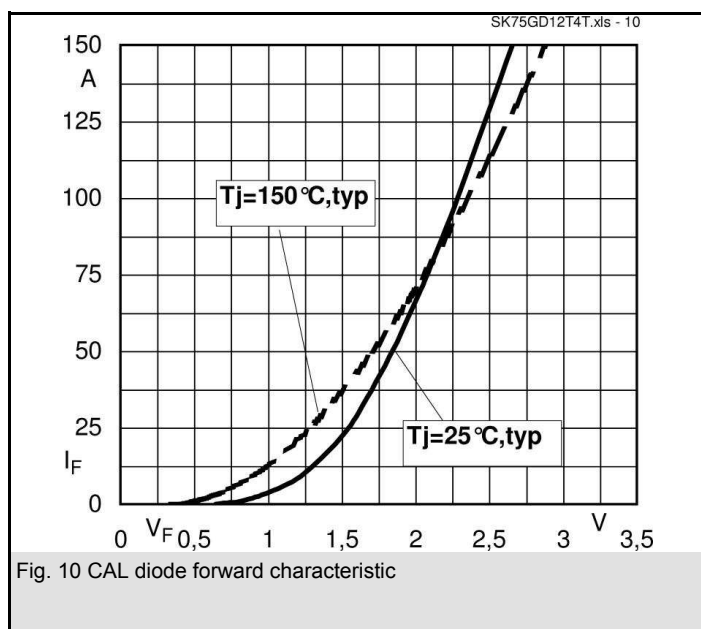
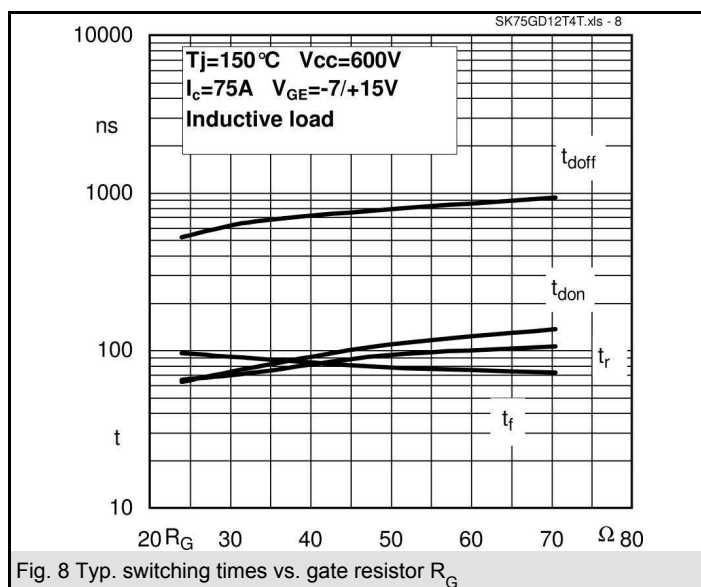
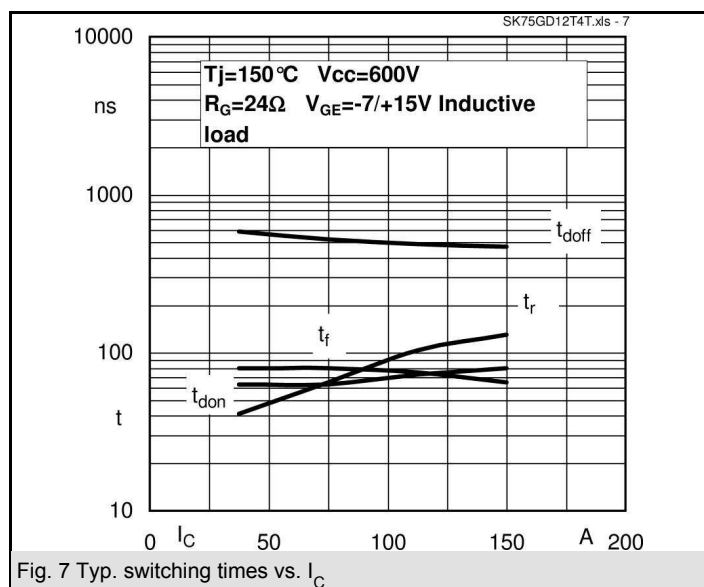
Remarks

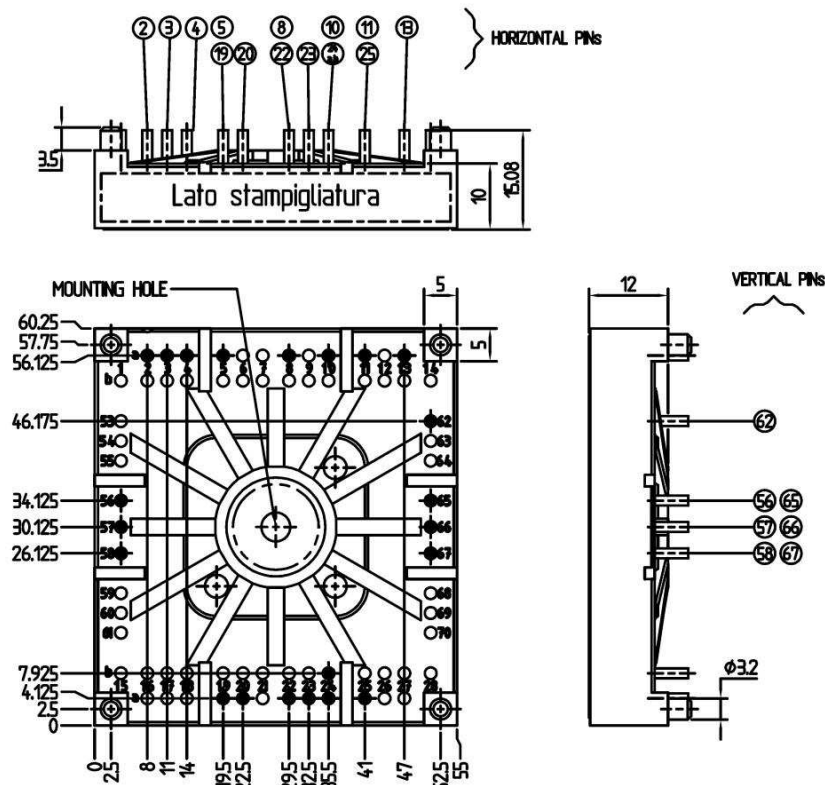
- $V_{CE,sat}$, V_F = chip level value



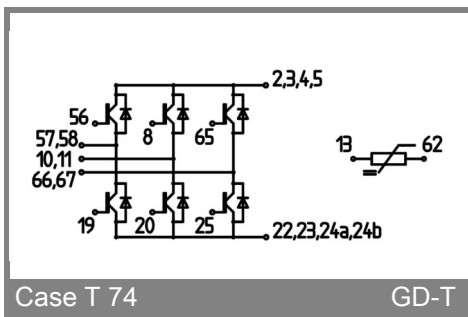
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 75\text{ A}$; $V_{GE} = 0\text{ V}$		$T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$	2,2	V
			$T_j = 150\text{ }^{\circ}\text{C}_{chiplev.}$	2,1	V
V_{F0}			$T_j = 25\text{ }^{\circ}\text{C}$	1,3	V
			$T_j = 150\text{ }^{\circ}\text{C}$	0,9	V
r_F			$T_j = 25\text{ }^{\circ}\text{C}$	12	m Ω
			$T_j = 150\text{ }^{\circ}\text{C}$	16	m Ω
I_{RRM}	$I_F = 75\text{ A}$		$T_j = 150\text{ }^{\circ}\text{C}$	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}	$T_s = 100^{\circ}\text{C}$ ($R_{25} = 5\text{ k}\Omega$)		493 \pm 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)



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

*IMPORTANT INFORMATION AND WARNINGS

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