

SK75GAL12T4



SEMITOP® 2

IGBT Module

SK75GAL12T4

SK75GAR12T4

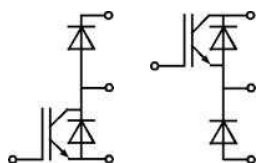
Features

- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD

Typical Applications*

Remarks

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



GAL

GAR

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	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	80	A
		$T_s = 70\text{ }^{\circ}\text{C}$	65	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	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	20	A
		$T_s = 70\text{ }^{\circ}\text{C}$	16	A
I_{FRM}	$I_{FRM} = 3 \times I_{Fnom}$		45	A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$		90	A
Freewheeling Diode				
I_F	$T_j = 175\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	70	A
		$T_s = 70\text{ }^{\circ}\text{C}$	55	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 °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		1,0	mA	
			T _j = 150 °C			mA	
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V		T _j = 25 °C		600	nA	
			T _j = 150 °C			nA	
V _{CE0}			T _j = 25 °C		1,1	V	
			T _j = 150 °C			1	1,2
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} = 15 Ω di/dt = 2000 A/μs	V _{CC} = 600V I _C = 75A			50	ns	
t _r					60	ns	
E _{on}					13	mJ	
t _{d(off)}	R _{Goff} = 15 Ω	T _j = 150 °C V _{GE} = -7/+15V			500	ns	
t _f					60	ns	
E _{off}					7	mJ	
R _{th(i-s)}	per IGBT				0,74	K/W	

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Features

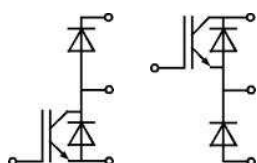
- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD

Typical Applications*

Remarks

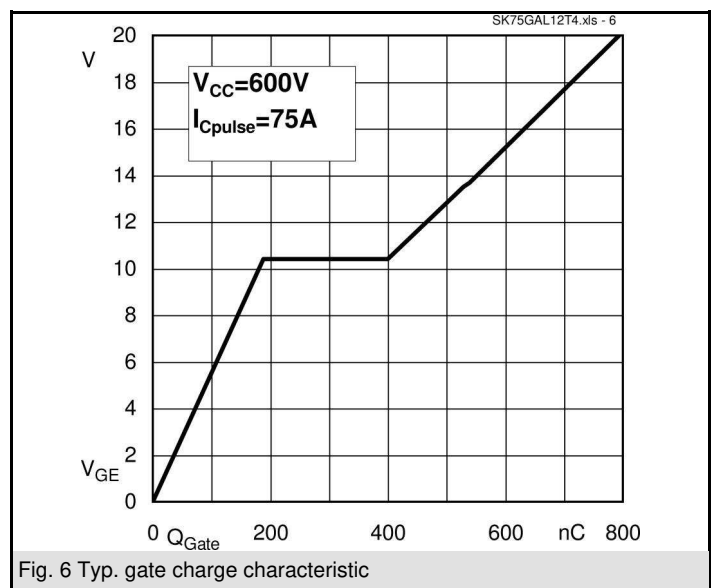
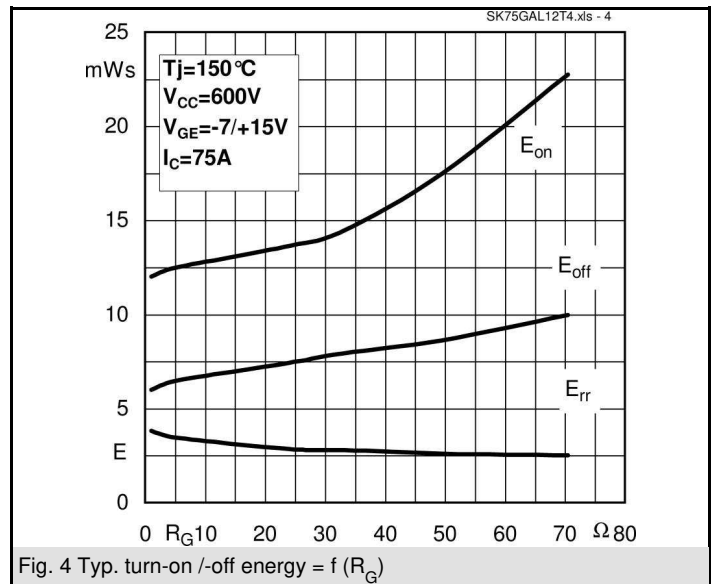
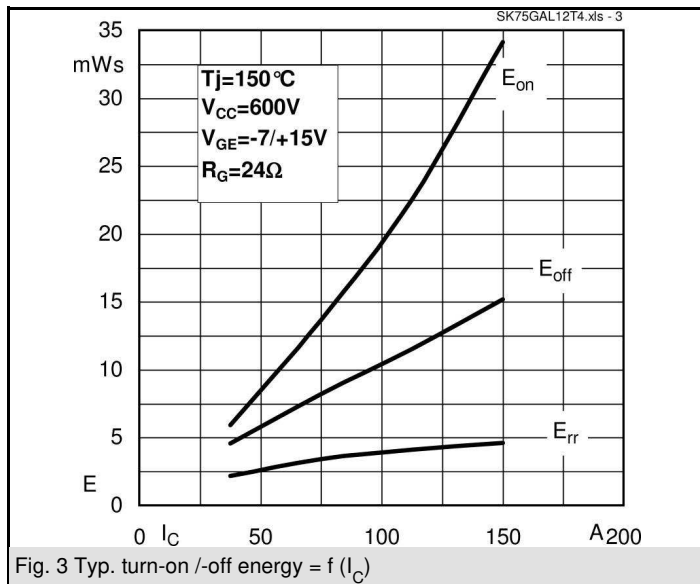
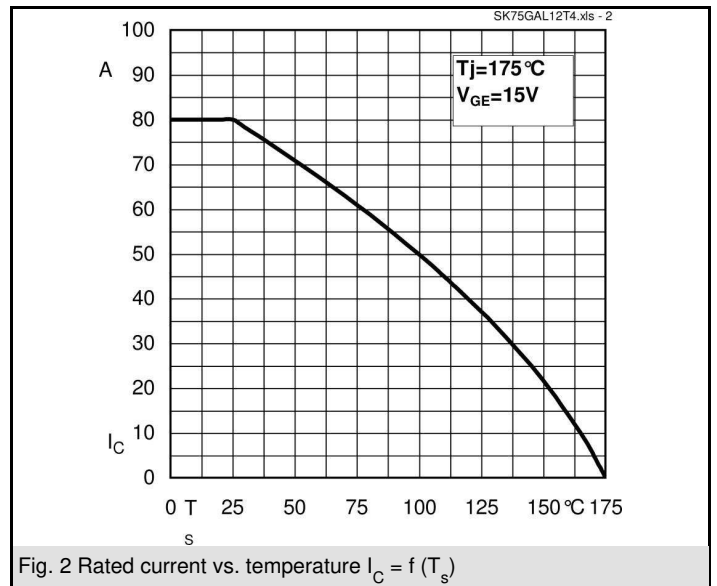
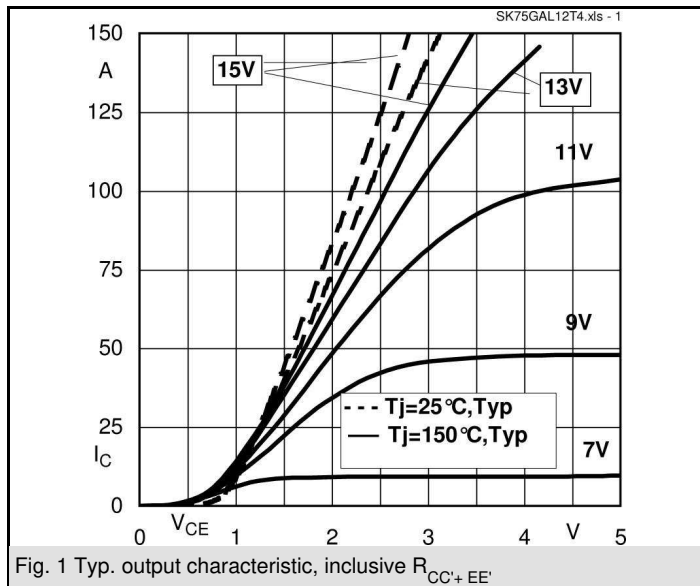
- $V_{CE,sat}$, V_F = chip level value

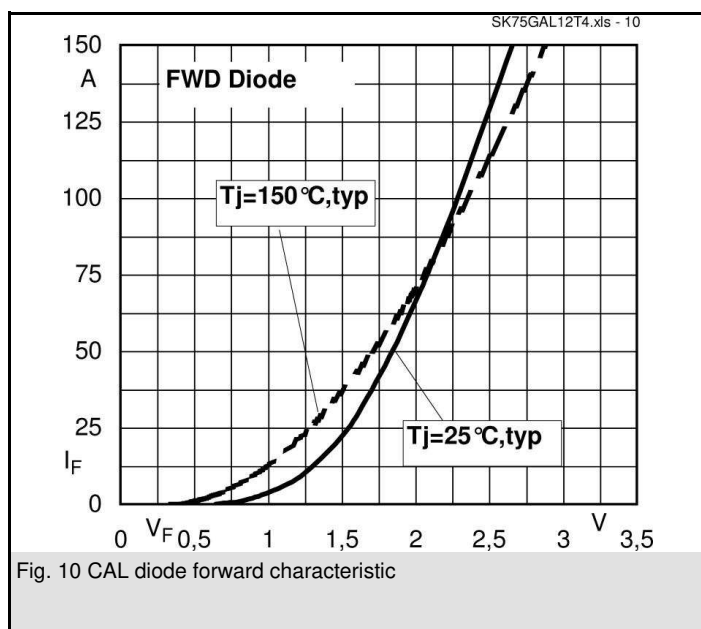
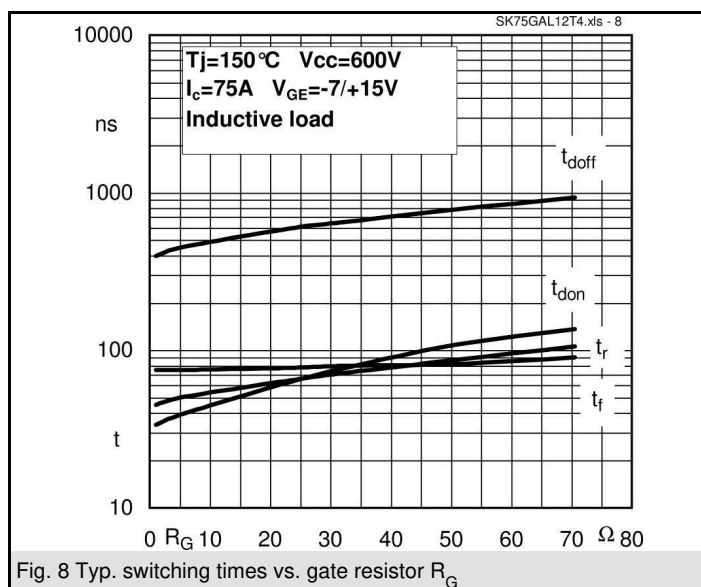
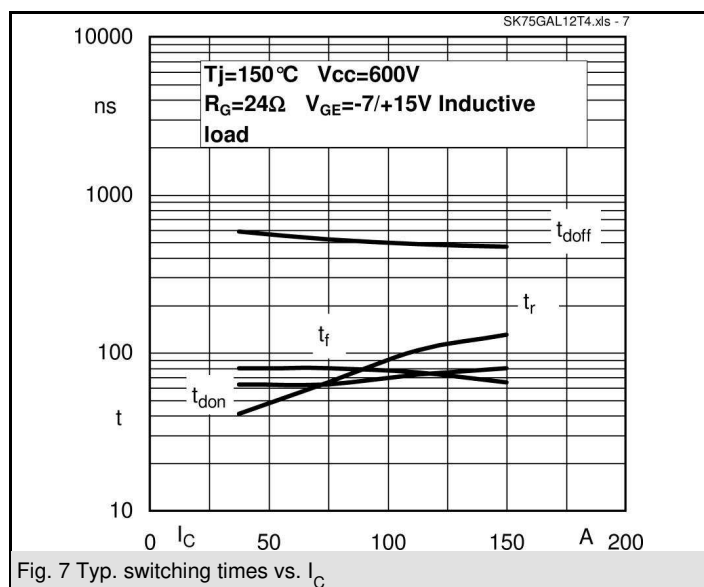
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
V _F = V _{EC}	I _{Fnom} = 15 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}	2,38	2,71	V
		T _j = 150 °C _{chiplev.}	2,44	2,77	V
V _{F0}		T _j = 25 °C	1,3	1,5	V
		T _j = 150 °C	0,9	1,1	V
r _F		T _j = 25 °C	72	80,7	mΩ
		T _j = 150 °C	102,8	111,6	mΩ
I _{RRM}	I _F = A	T _j = 150 °C			A
Q _{rr}					μC
E _{rr}	V _{CC} = 600V				mJ
R _{th(j-s)D}	per diode		2,34		K/W
Freewheeling Diode					
V _F = V _{EC}	I _{Fnom} = 75 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}	2,1	2,5	V
		T _j = 150 °C _{chiplev.}	2,4	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	12	13,3	V
		T _j = 150 °C	16	17,3	V
I _{RRM}	I _F = 75 A	T _j = 150 °C	45		A
Q _{rr}	di/dt = 2000 A/μs		10		μC
E _{rr}	V _{CC} = 600V		3		mJ
R _{th(j-s)FD}	per diode		0,97		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

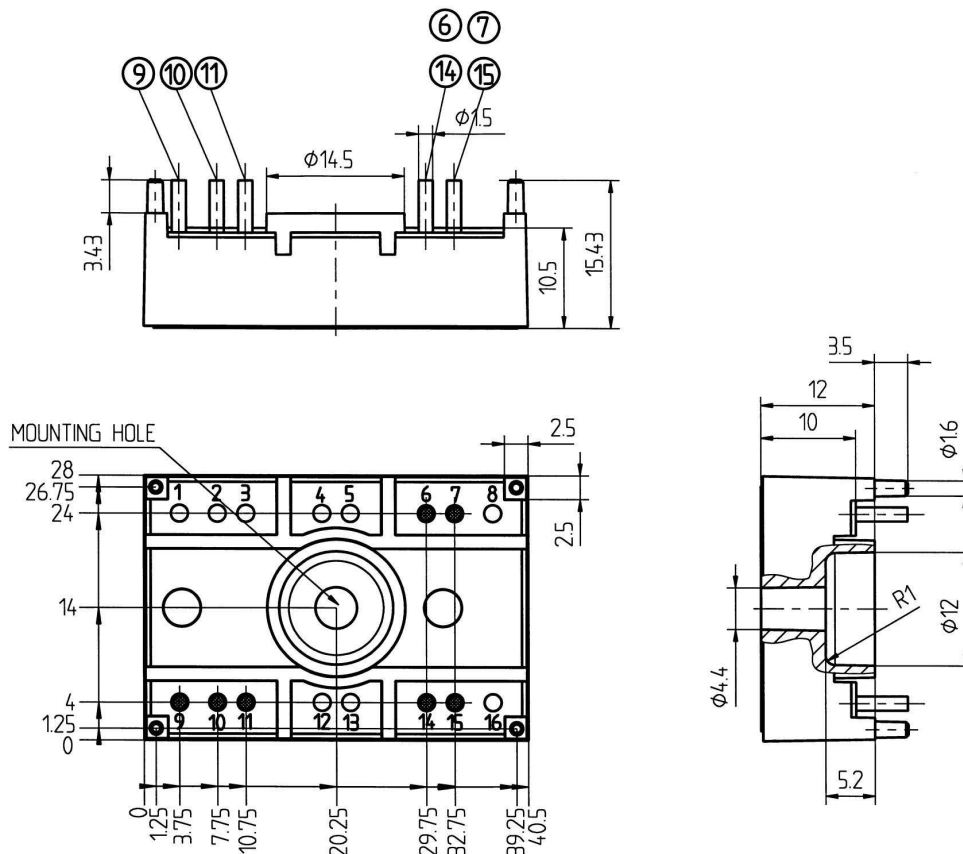


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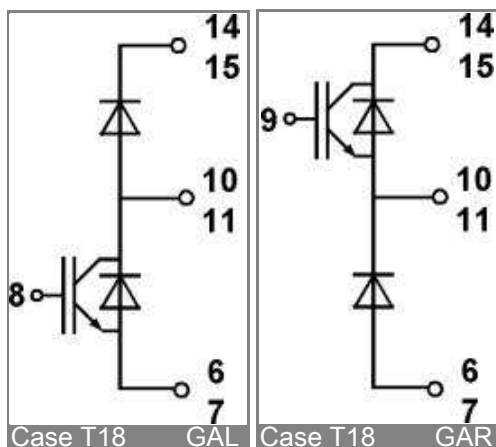
GAR







Case T18 (Suggested hole diameter for the solder pins and mounting plastic pins: 2mm)



Case T18 GAL

Case T18 GAR

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

*IMPORTANT INFORMATION AND WARNINGS

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