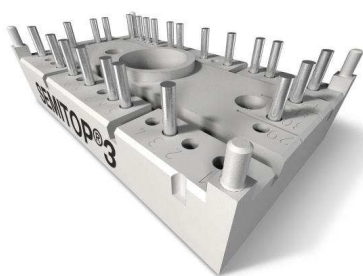


SK10GD12T4ET



SEMITOP® 3

IGBT Module

SK10GD12T4ET

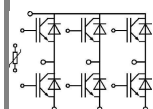
Features

- 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

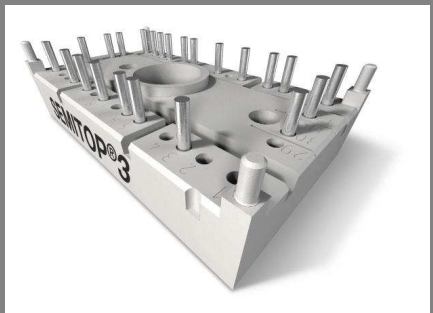


GD-ET

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified		
Symbol	Conditions	Values	Units	
IGBT				
V _{CES}	T _j = 25 °C	1200	V	
I _C	T _j = 175 °C	T _s = 25 °C	17	A
		T _s = 70 °C	15	A
I _{CRM}	I _{CRM} = 3 x I _{Cnom}	24	A	
V _{GES}		± 20	V	
t _{psc}	V _{CC} = 800 V; V _{GE} ≤ 15 V; T _j = 150 °C V _{CES} < 1200 V	10	µs	
Inverse Diode				
I _F	T _j = 175 °C	T _s = 25 °C	15	A
		T _s = 70 °C	12	A
I _{FRM}	I _{FRM} = 3 x I _{Fnom}	24	A	
Module				
I _{t(RMS)}			A	
T _{vj}		-40 ... +175	°C	
T _{stg}		-40 ... +125	°C	
V _{isol}	AC, 1 min.	2500	V	

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 0,3\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$		1,0	mA
		$T_j = 150\text{ °C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 20\text{ V}$	$T_j = 25\text{ °C}$		120	nA
		$T_j = 150\text{ °C}$			nA
V_{CE0}		$T_j = 25\text{ °C}$	1,1	1,3	V
		$T_j = 150\text{ °C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	93,8		m Ω
		$T_j = 150\text{ °C}$	156		m Ω
$V_{CE(sat)}$	$I_{Cnom} = 8\text{ A}$, $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,85	2,05	V
		$T_j = 150\text{ °C}_{chiplev.}$	2,25	2,45	V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$	0,49		nF
C_{oes}			0,05		nF
C_{res}			0,03		nF
Q_G	$V_{GE} = -7\text{ V} \dots +15\text{ V}$		37,5		nC
$t_{d(on)}$	$R_{Gon} = 32\text{ }\Omega$ $di/dt = 1375\text{ A}/\mu\text{s}$	$V_{CC} = 600\text{ V}$ $I_C = 8\text{ A}$	16		ns
t_r			14		ns
E_{on}	$R_{Goff} = 32\text{ }\Omega$ $di/dt = 1375\text{ A}/\mu\text{s}$	$T_j = 150\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	0,41		mJ
$t_{d(off)}$			273		ns
t_f			85		ns
E_{off}			0,76		mJ
$R_{th(j-s)}$	per IGBT		2,2		K/W

SK10GD12T4ET



SEMITOP[®] 3

IGBT Module

SK10GD12T4ET

Features

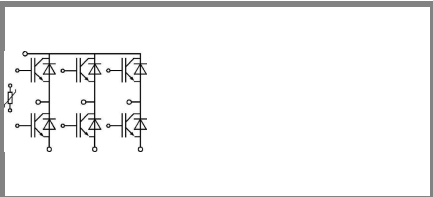
- One screw mounting module
- Trench4 IGBT technology
- CAL4 technology FWD
- Integrated NTC temperature sensor

Typical Applications*

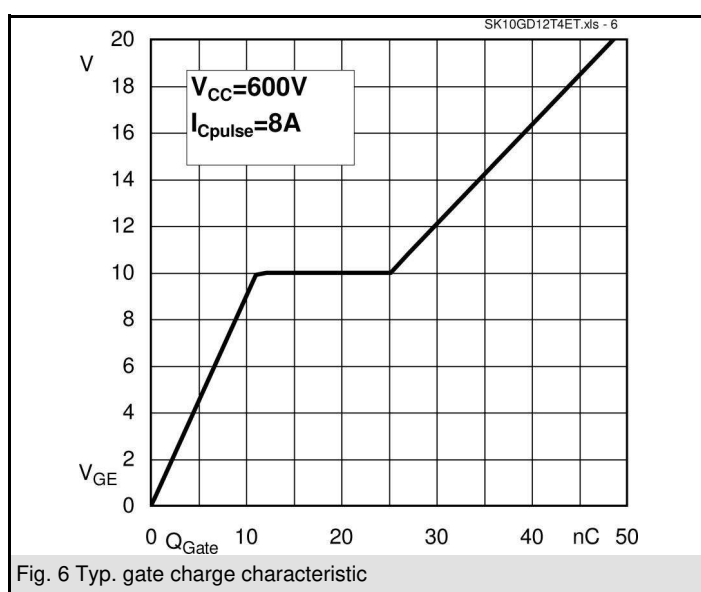
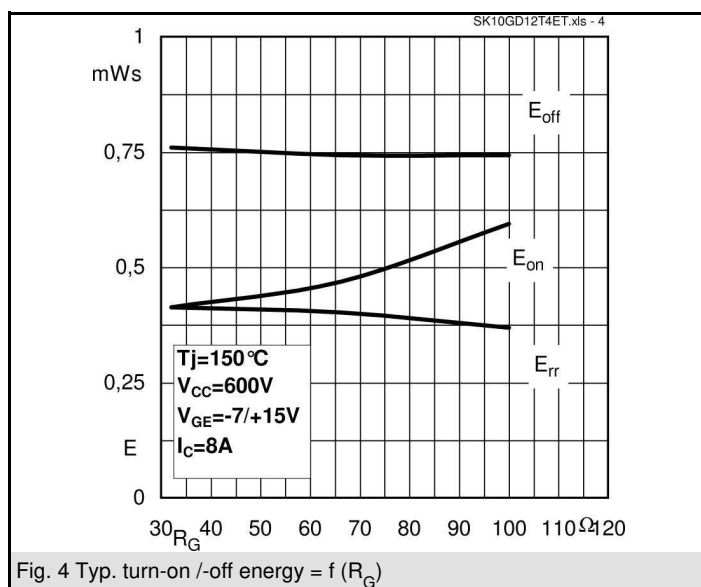
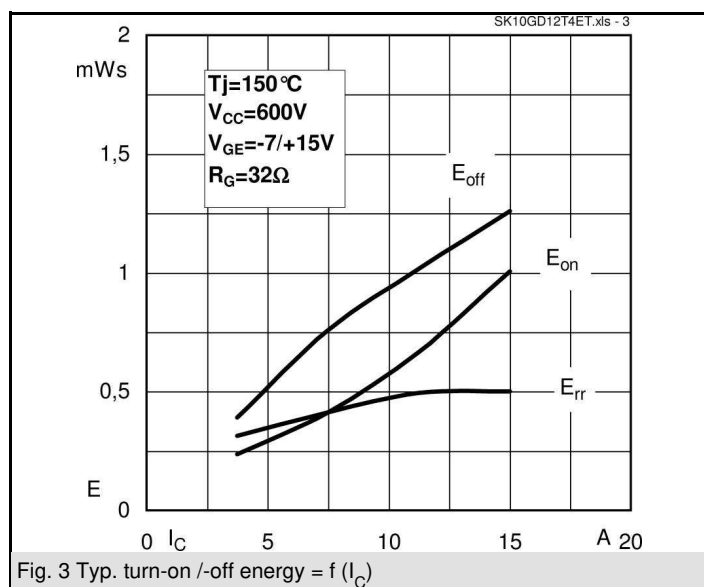
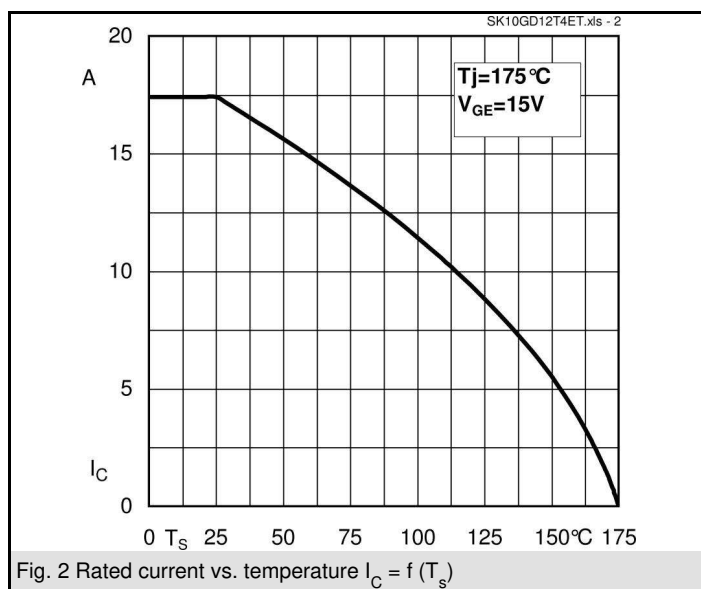
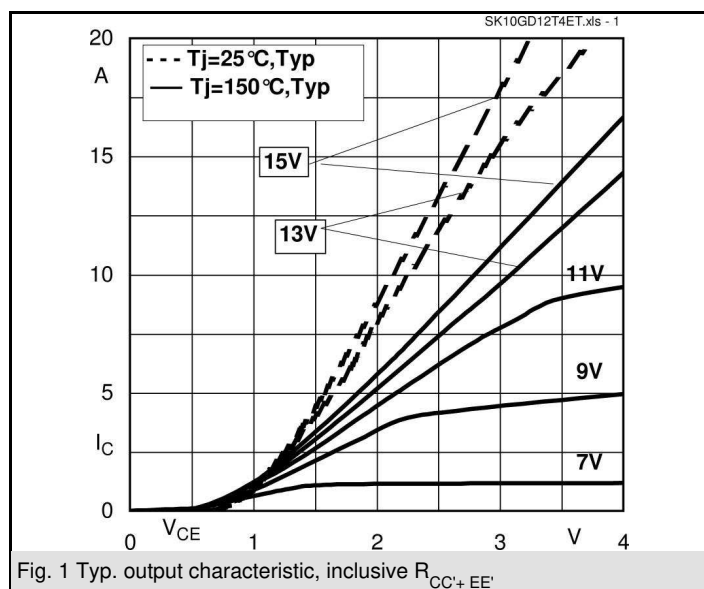
Remarks

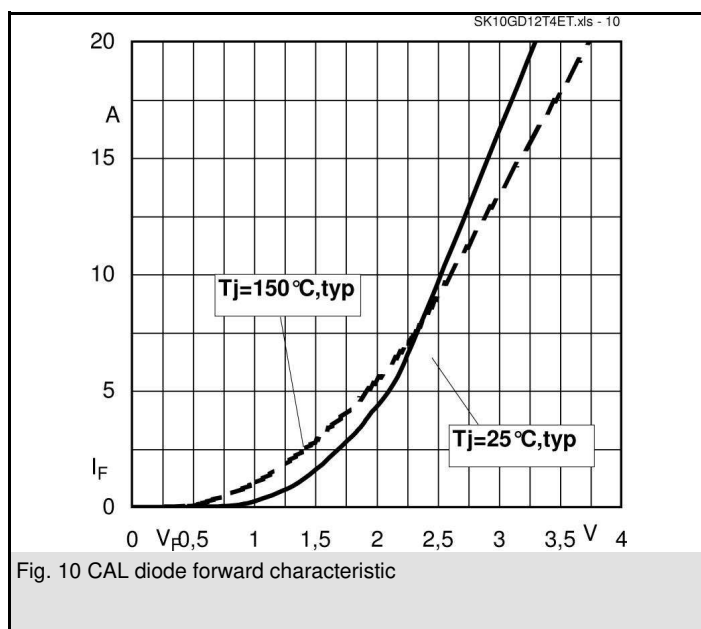
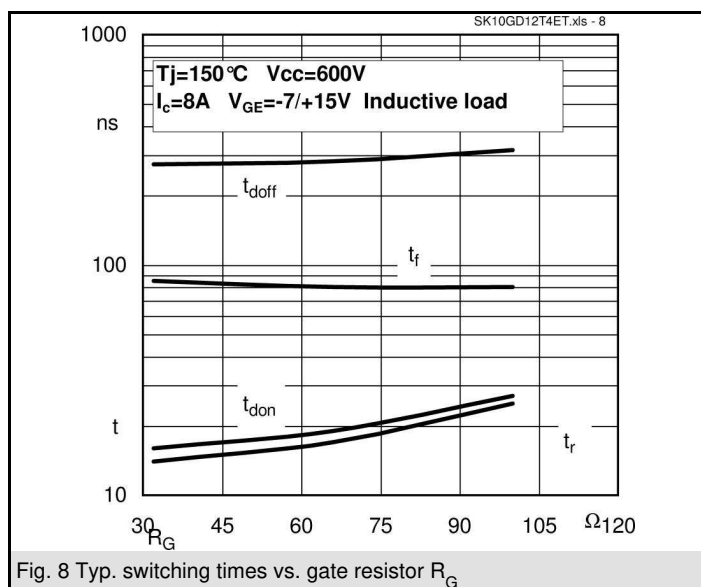
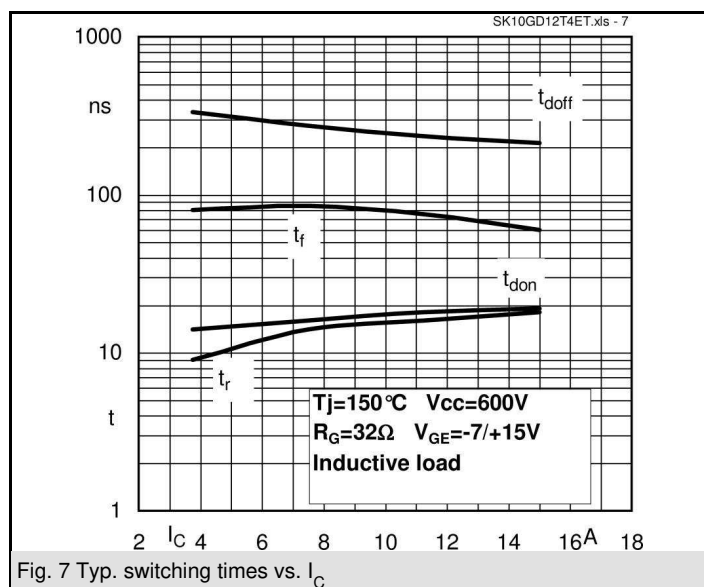
- $V_{CE,sat}$, V_F = chip level value

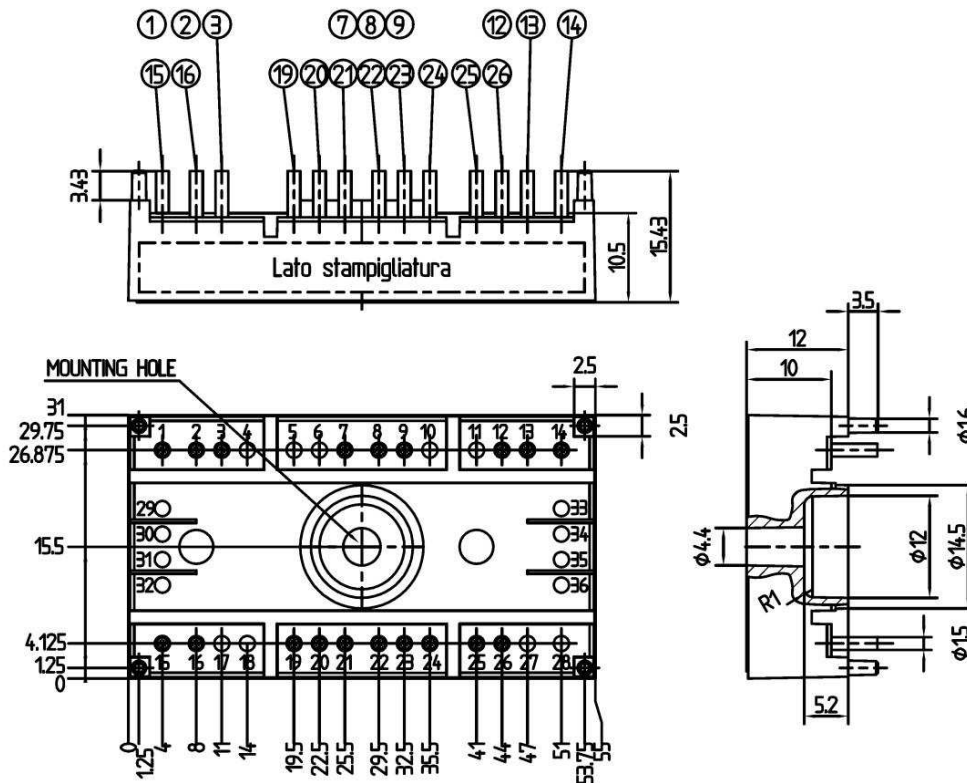
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 8 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2,38	2,71	V
		T _j = 150 °C _{chiplev.}		2,44	2,77	V
V _{F0}		T _j = 25 °C		1,3	1,5	V
		T _j = 150 °C		0,9	1,1	V
r _F		T _j = 25 °C		135	151,3	mΩ
		T _j = 150 °C		192	208,8	mΩ
I _{RRM}	I _F = 8 A di/dt = 1375 A/μs V _{CC} = 600V	T _j = 150 °C		15		A
Q _{rr}				0,2		μC
E _{rr}				0,41		mJ
R _{th(j-s)D}	per diode			2,7		K/W
M _s	to heat sink		2,25		2,5	Nm
w				30		g
Temperature sensor						
R ₁₀₀	T _s =100°C (R ₂₅ =5kΩ)			493±5%		Ω



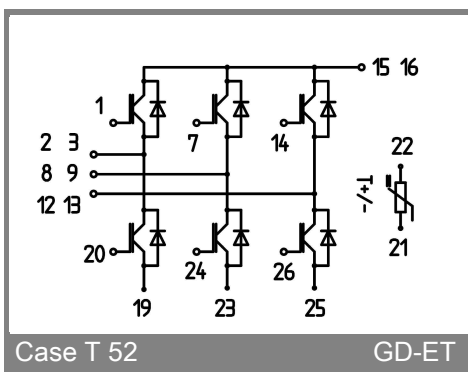
GD-ET







Case T52 (Suggested hole diameter for solder pins and plastic mounting pins: 2mm)



Case T 52

GD-ET

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

*IMPORTANT INFORMATION AND WARNINGS

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