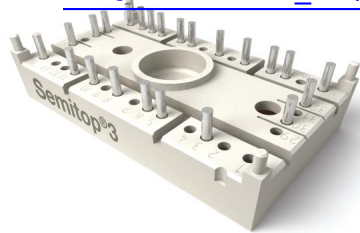


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SEMITOP® 3

IGBT Module

SK10GD123

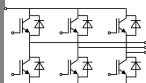
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N-channel homogeneous silicon structure (NPT-Non punch-through IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E63532

Typical Applications

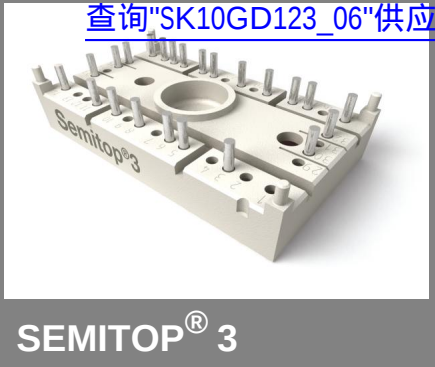
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS



GD

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	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	16	A
		$T_s = 80\text{ }^{\circ}\text{C}$	11	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$		16	A
V_{GES}			± 20	V
t_{psc}	$V_{CC} = 600\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ }^{\circ}\text{C}$ $V_{CES} < 1200\text{ V}$		10	μs
Inverse Diode				
I_F	$T_j = 150\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	18	A
		$T_s = 80\text{ }^{\circ}\text{C}$	12	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$			A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave $T_j = 150\text{ }^{\circ}\text{C}$		125	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	$^{\circ}\text{C}$
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 = 0,35 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _j = 25 °C T _j = 125 °C				0,05	mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 30 V T _j = 25 °C T _j = 125 °C				120	nA nA
V _{CE0}	T _j = 25 °C T _j = 125 °C			1,2 1,2		V V
r _{CE}	V _{GE} = 15 V T _j = 25°C T _j = 125°C			150 210		mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 10 A, V _{GE} = 15 V T _j = 25°C _{chiplev.} T _j = 125°C _{chiplev.}			2,7 3,3	3,2 3,9	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz			0,6 0,06 0,038		nF nF nF
t _{d(on)} t _r E _{on}	R _{Gon} = 50 Ω	V _{CC} = 600V I _{Cnom} = 10A T _j = 125 °C V _{GE} =±15V		30 45 1,3		ns ns mJ
t _{d(off)} t _f E _{off}				200 35 1		ns ns mJ
R _{th(j-s)}	per IGBT				1,8	K/W



IGBT Module

SK10GD123

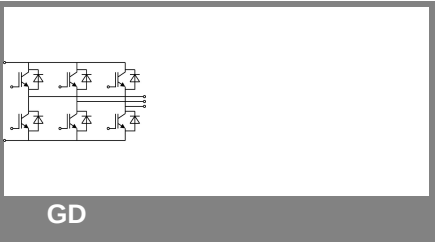
Preliminary Data

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Typical Applications

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- Switched mode power supplies
- UPS

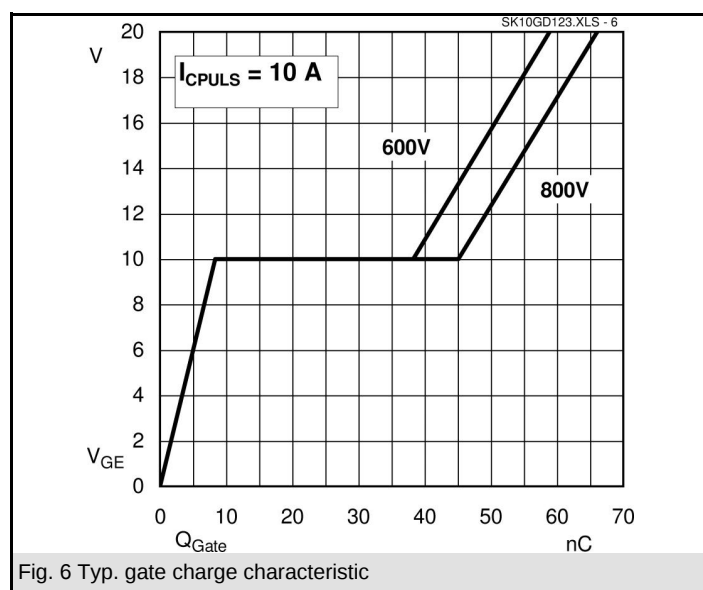
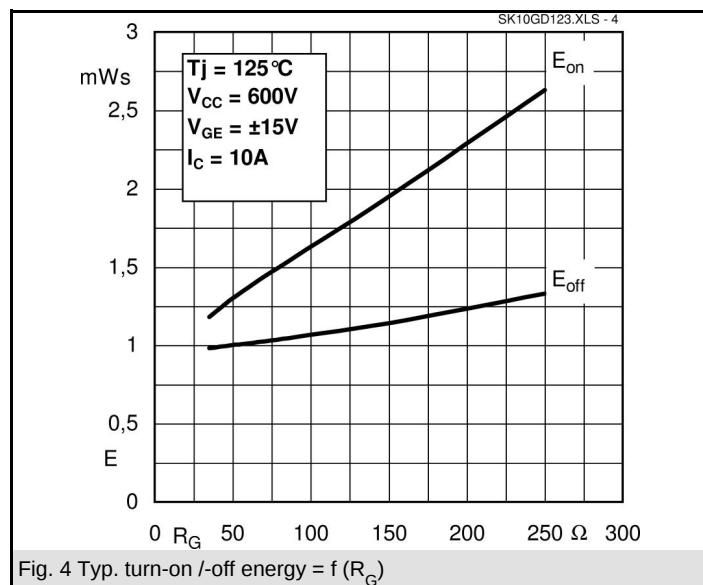
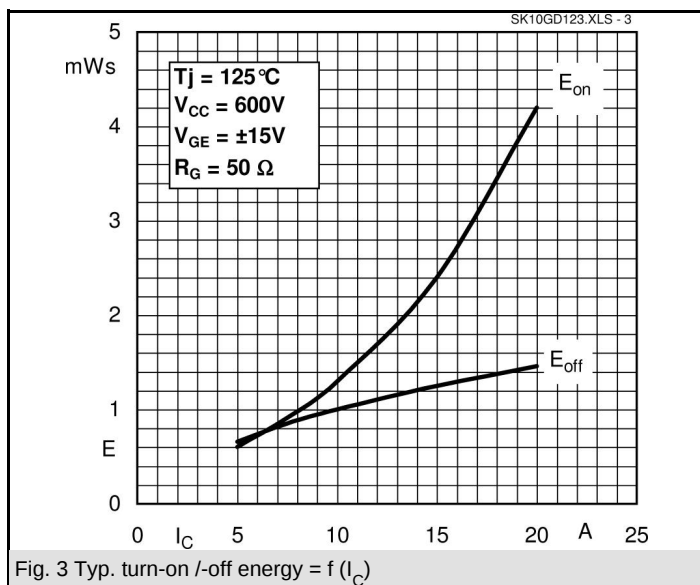
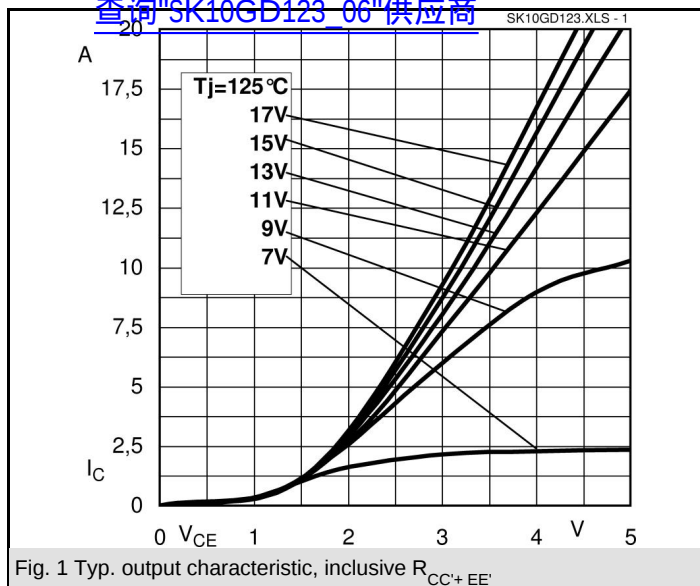


Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 10 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2	2,5	V
		T _j = 125 °C _{chiplev.}		1,8	2,3	V
V _{F0}		T _j = 125 °C		1	1,2	V
r _F		T _j = 125 °C		80	110	mΩ
I _{RRM}	I _{Fnom} = 10 A di/dt = -300 A/μs V _{CC} = 600V	T _j = 125 °C		12		A
Q _{rr}				1,8		μC
E _{rr}				0,4		mJ
R _{th(j-s)D}	per diode				2,1	K/W
M _s	to heat sink M1		2,25		2,5	Nm
w				30		g

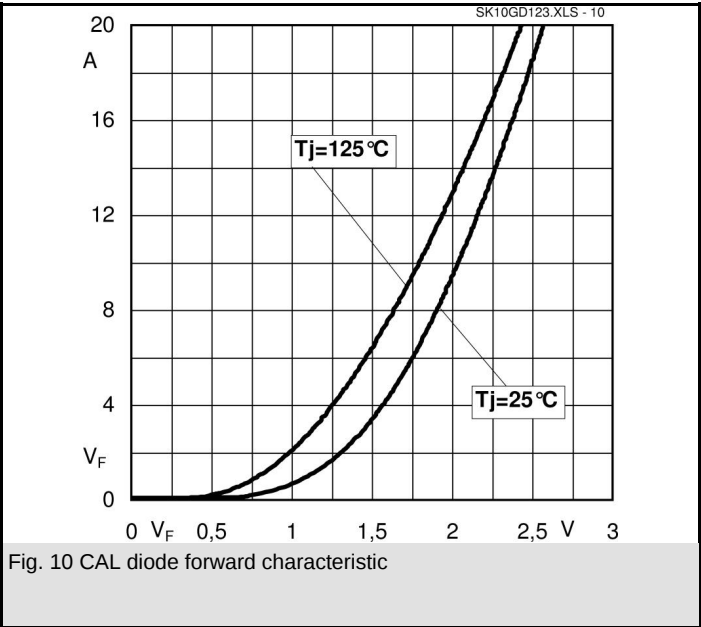
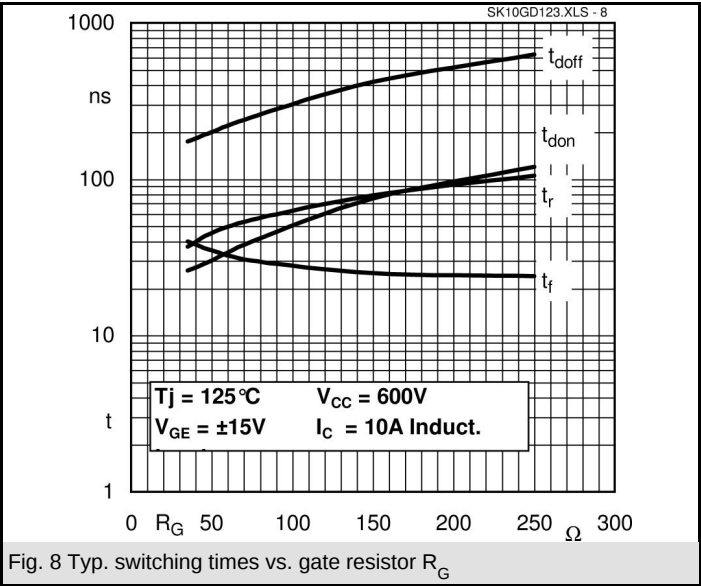
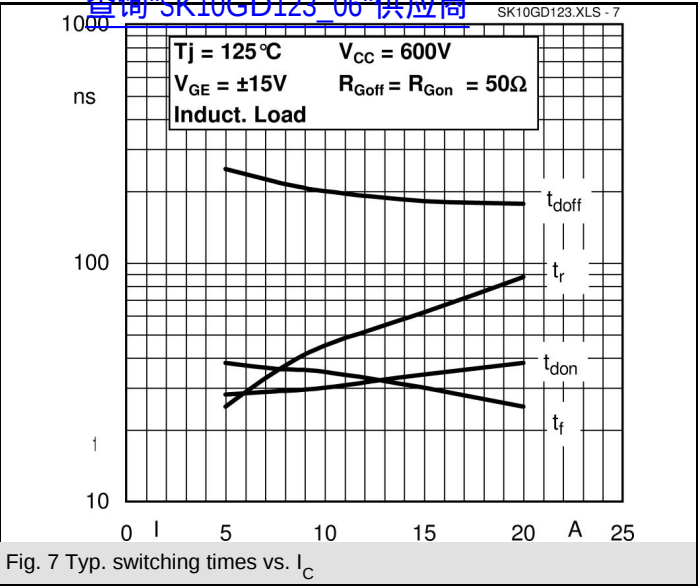
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

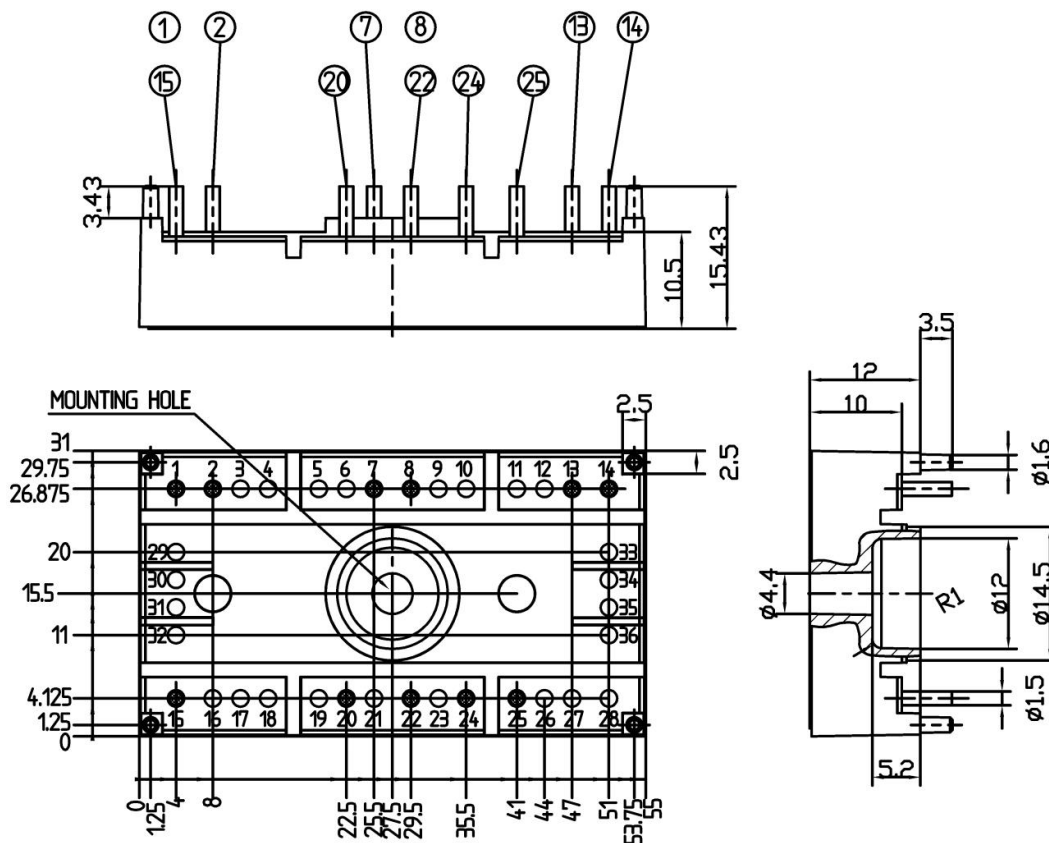
This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

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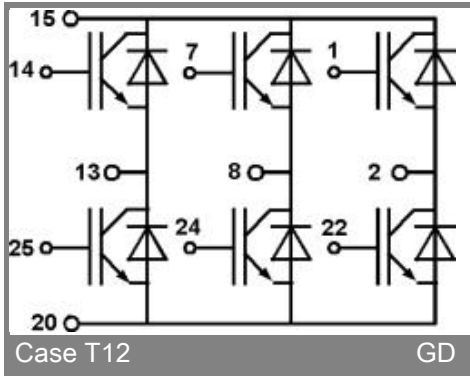


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Case T12 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T12

GD