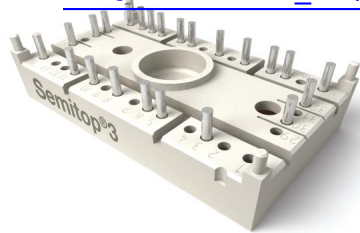


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SEMITOP® 3

IGBT Module

SK20GD123

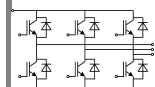
Preliminary Data

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

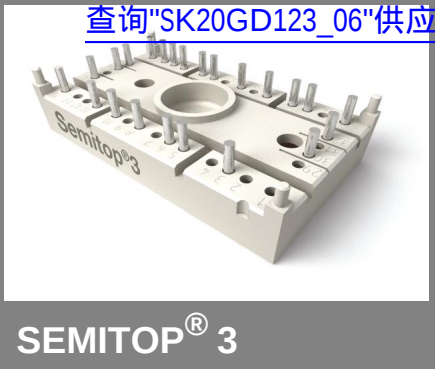
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS



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	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	23	A
		$T_s = 80\text{ }^{\circ}\text{C}$	15	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	30	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	$T_j = 150\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	24	A
		$T_s = 80\text{ }^{\circ}\text{C}$	17	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$		A	
I_{FSM}	$t_p = 10\text{ ms}; \text{half sine wave } T_j = 150\text{ }^{\circ}\text{C}$	180	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 = 0,6 mA		4,5	5,5	6,5	V	
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _J = 25 °C				0,1	mA
		T _J = 125 °C				mA	
I _{GES}	V _{CE} = 0 V, V _{GE} = 30 V	T _J = 25 °C				480	nA
		T _J = 125 °C					nA
V _{CE0}						T _J = 25 °C	V
						T _J = 125 °C	V
r _{CE}	V _{GE} = 15 V	T _J = 25°C				86	mΩ
		T _J = 125°C				126	mΩ
V _{CE(sat)}	I _{Cnom} = 15 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.}	2	2,5	3	V	
		T _J = 125°C _{chiplev.}				3,1	3,7
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz				1	nF
C _{oes}						0,15	nF
C _{res}						0,07	nF
Q _G	V _{GE} =0 ... 20 V					90	nC
t _{d(on)}	R _{Gon} = 40 Ω	V _{CC} = 600V I _{Cnom} = 15A T _J = 125 °C V _{GE} =±15V				35	ns
t _r						45	ns
E _{on}	2					mJ	
t _{d(off)}	R _{Goff} = 40 Ω					250	ns
t _f						70	ns
E _{off}						1,8	mJ
R _{th(j-s)}	per IGBT					1,4	K/W



IGBT Module

SK20GD123

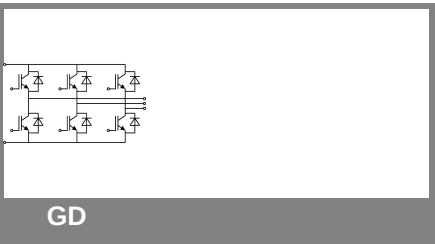
Preliminary Data

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Typical Applications

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- UPS

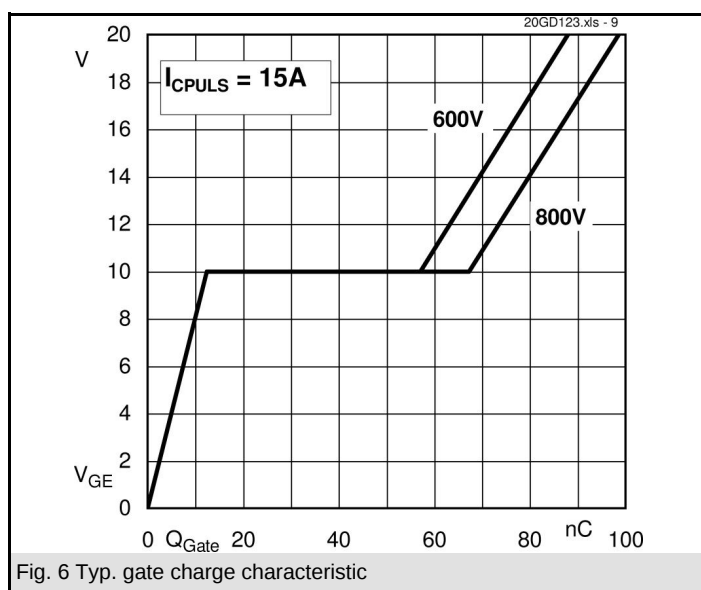
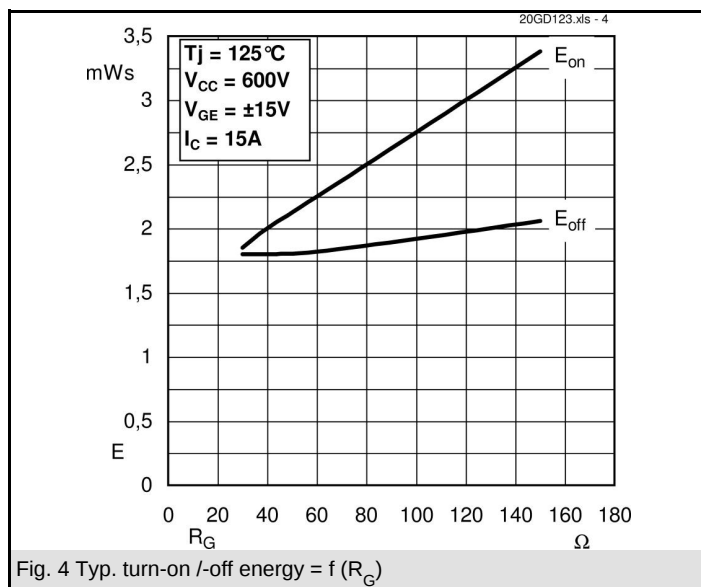
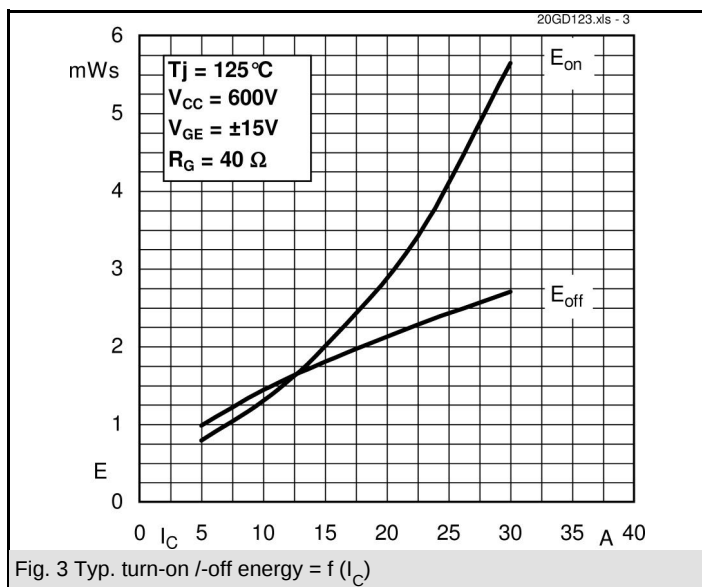
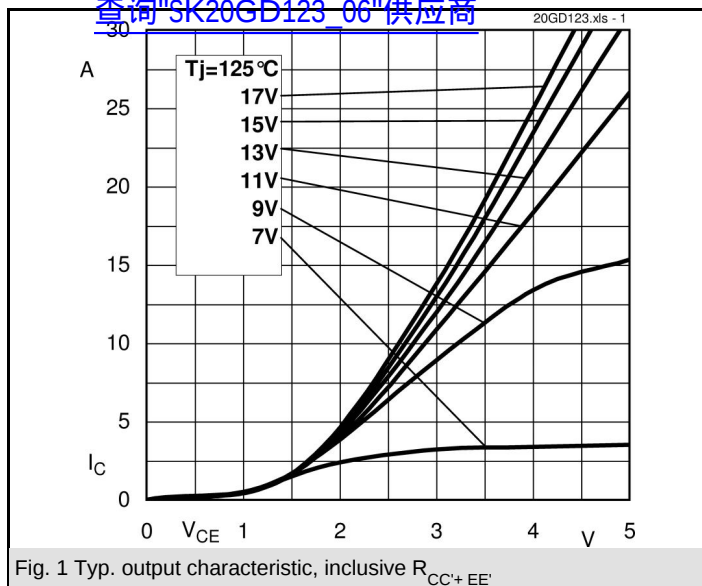


Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 15 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2	2,5	V
		T _j = 125 °C _{chiplev.}		1,8	2,3	V
V _{F0}		T _j = 125 °C		1	1,2	V
r _F		T _j = 125 °C		53	73	mΩ
I _{RRM}	I _{Fnom} = 15 A di/dt = -200 A/μs V _{CC} = 600V	T _j = 125 °C		16		A
Q _{rr}				2,7		μC
E _{rr}				0,6		mJ
R _{th(j-s)D}	per diode				1,7	K/W
M _s	to heat sink M1		2,25		2,5	Nm
w				30		g

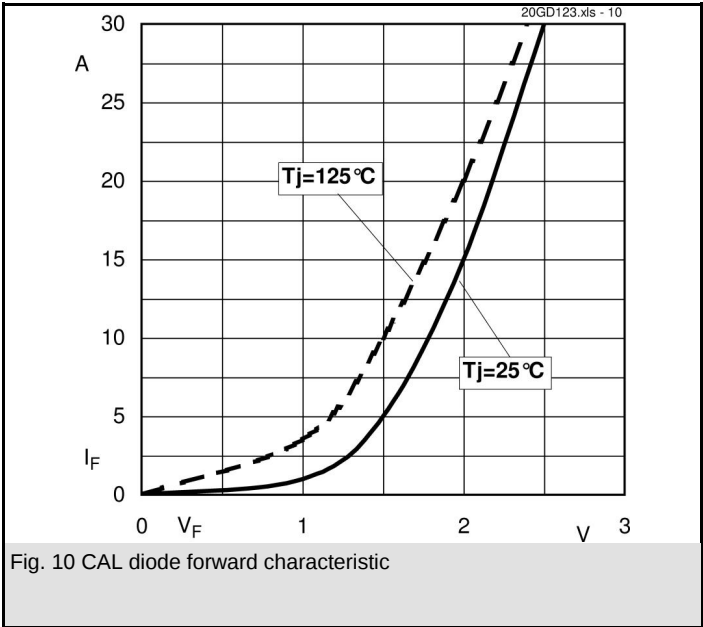
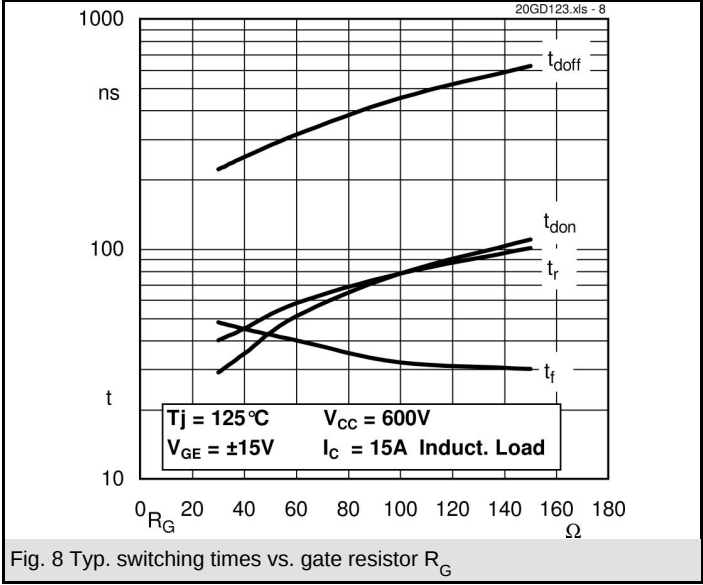
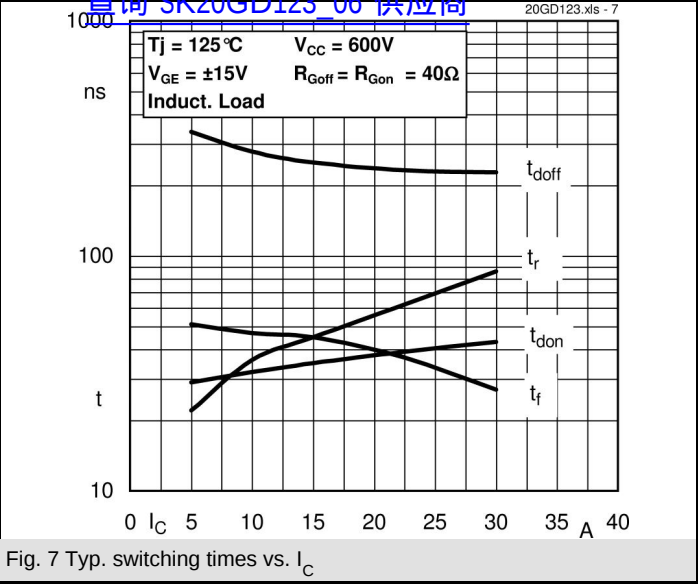
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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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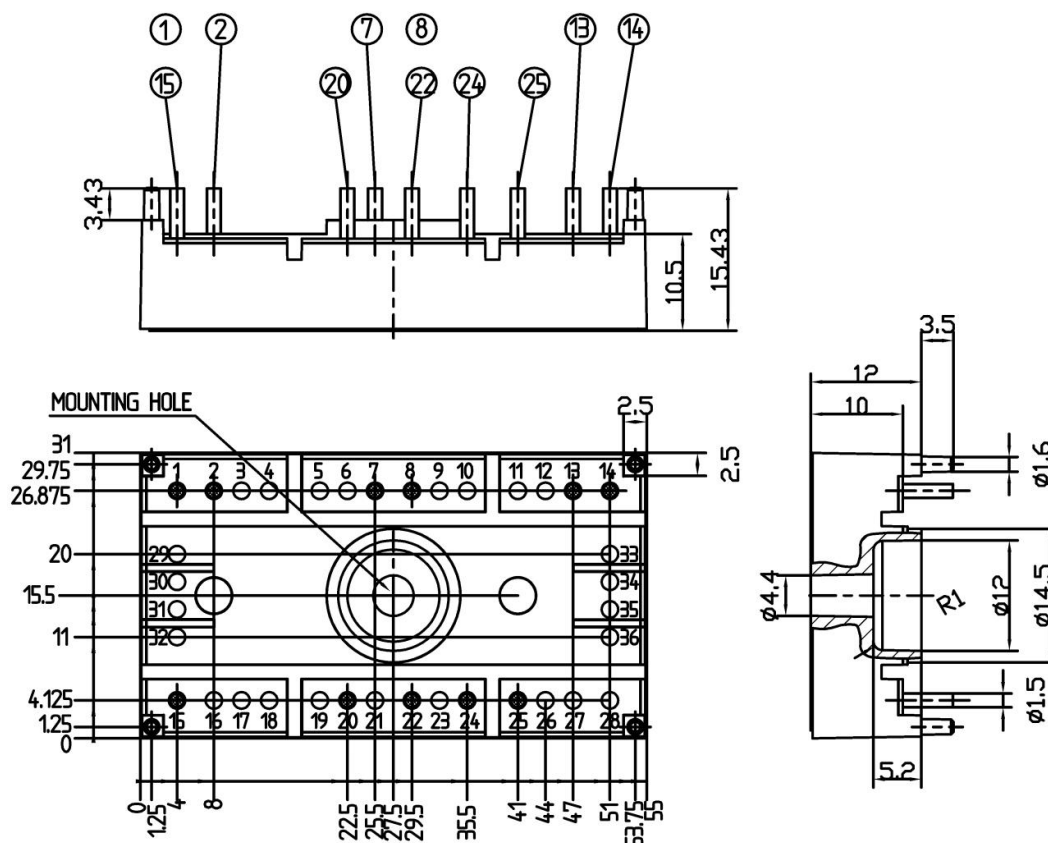
查询"SK20GD123 06"供应商



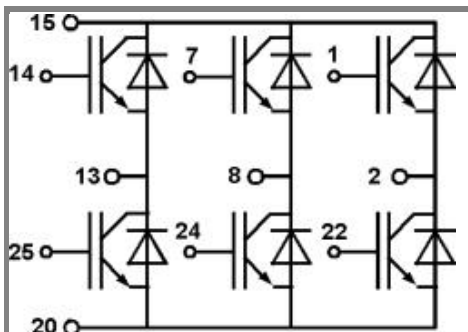
UL recognized file

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no. E 63 532



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



Case T12

GD