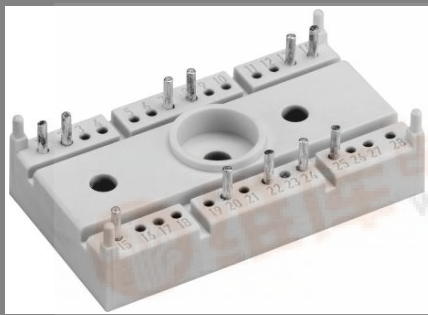


SK 20 GD 123



SEMITOP® 3

IGBT Module

SK 20 GD 123

Preliminary Data

Features

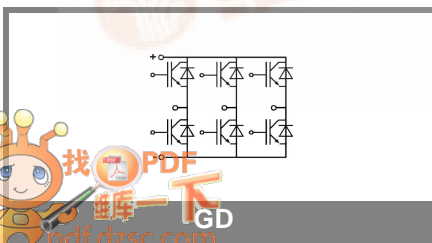
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punchthrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E 63532

Typical Applications

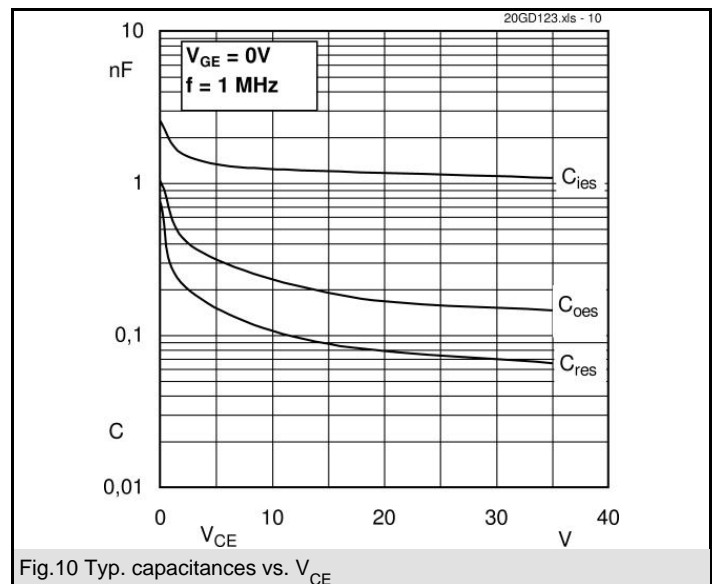
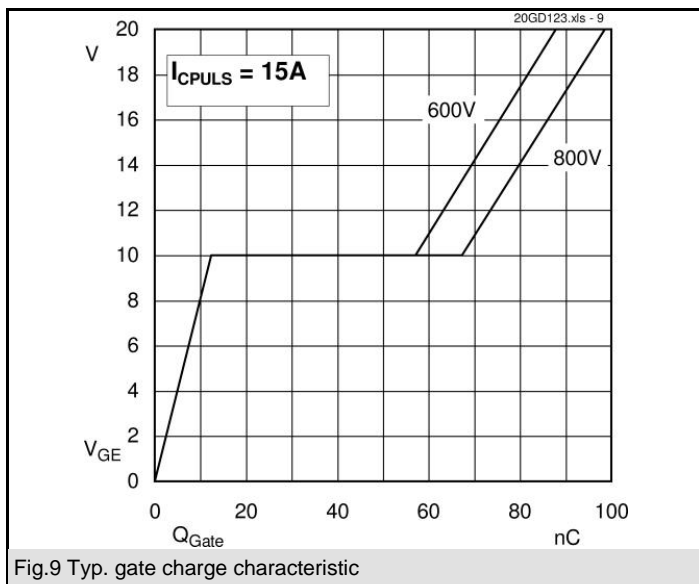
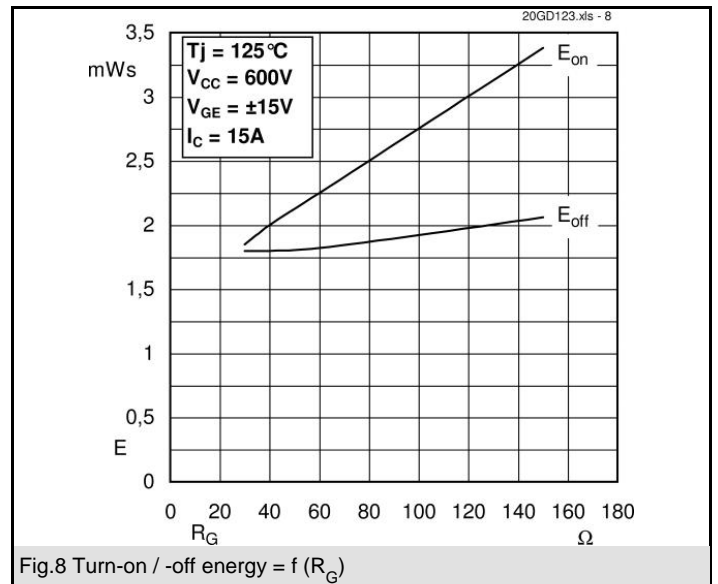
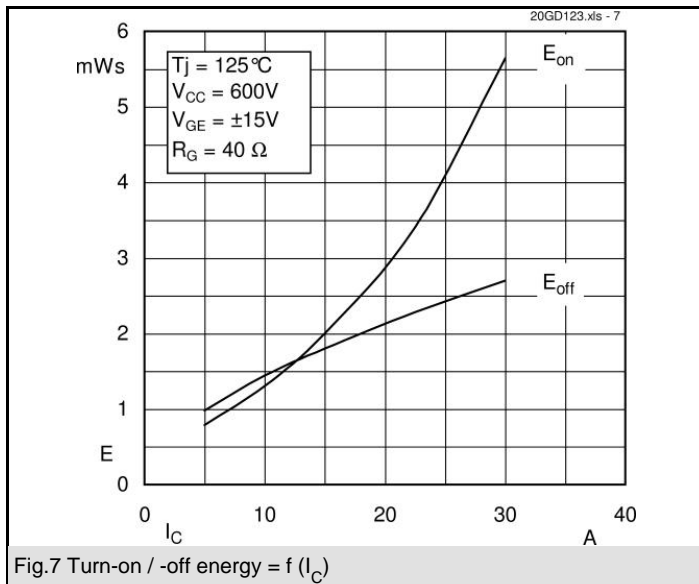
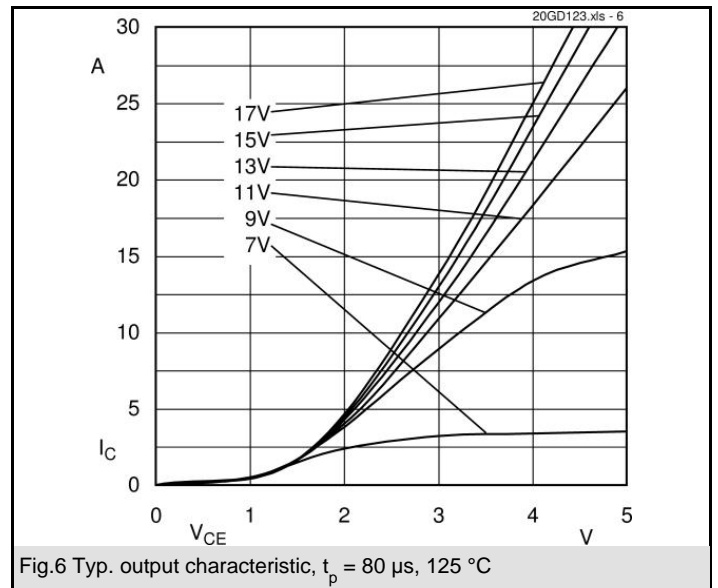
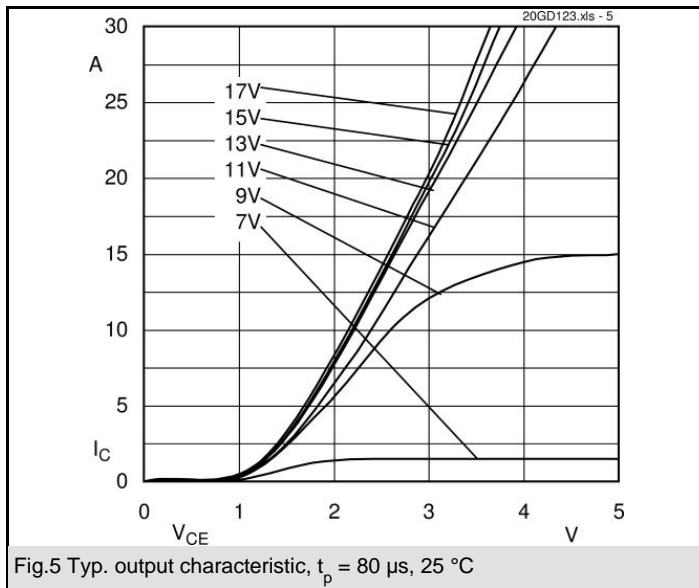
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V _{CES}		1200	V
V _{GES}		± 20	V
I _C	T _s = 25 (80) °C;	23 (15)	A
I _{CM}	t _p < 1 ms; T _s = 25 (80) °C;	46 (30)	A
T _j		- 40 ... + 150	°C
Inverse/Freewheeling CAL diode			
I _F	T _s = 25 (80) °C;	24 (17)	A
I _{FM} = - I _{CM}	t _p < 1 ms; T _s = 25 (80) °C;	48 (34)	A
T _j		- 40 ... + 150	°C
T _{stg}		- 40 ... + 125	°C
T _{sol}	Terminals, 10 s	260	°C
V _{isol}	AC 50 Hz, r.m.s. 1 min. / 1 s	2500 / 3000	V

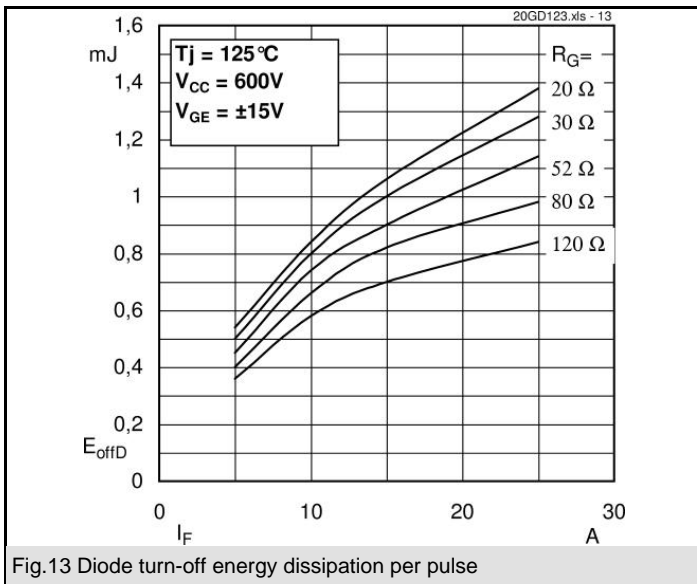
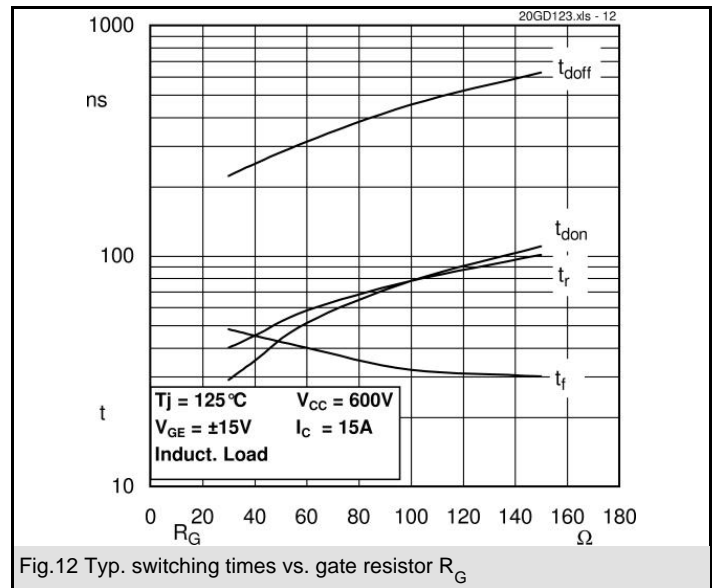
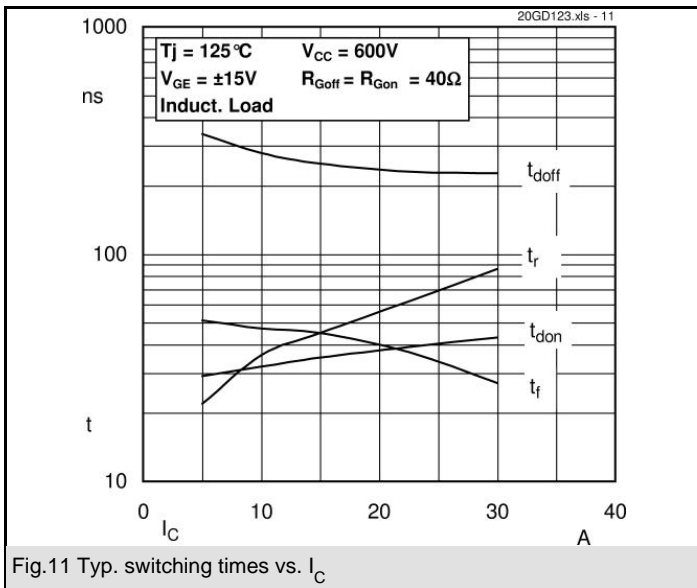
Characteristics		T _s = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
V _{CE(sat)}	I _C = 15 A, T _j = 25 (125) °C		2,5 (3,1)	3 (3,7)	V
V _{GE(th)}	V _{CE} = V _{GE} ; I _C = 0,0006 A	4,5	5,5	6,5	V
C _{ies}	V _{CE} = 25 V; V _{GE} = 0 V; 1 MHz		1		nF
R _{th(j-s)}	per IGBT per module			1,4	K/W
under following conditions:					
t _{d(on)}	V _{CC} = 600 V, V _{GE} = ± 15 V		35		ns
t _r	I _C = 15 A, T _j = 125 °C		45		ns
t _{d(off)}	R _{Gon} = R _{Goff} = 40 Ω		250		ns
t _f			70		ns
E _{on} + E _{off}	Inductive load		3,8		mJ
Inverse/Freewheeling CAL diode					
V _F = V _{EC}	I _F = 15 A; T _j = 25 (125) °C		2 (1,8)	2,5 (2,3)	V
V _(TO)	T _j = (125) °C		(1)	(1,2)	V
r _T	T _j = (125) °C		(53)	(73)	mΩ
R _{th(j-s)}				1,7	K/W
under following conditions:					
I _{RRM}	I _F = 15 A; V _R = 600 V		16		A
Q _{rr}	di _F /dt = -200 A/μs		2,7		μC
E _{off}	V _{GE} = 0 V; T _j = 125 °C		0,6		mJ
Mechanical data					
M1	mounting torque			2,5	Nm
w			30		g
Case	SEMITOP® 3		T 12		



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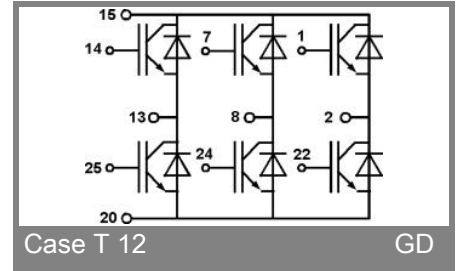
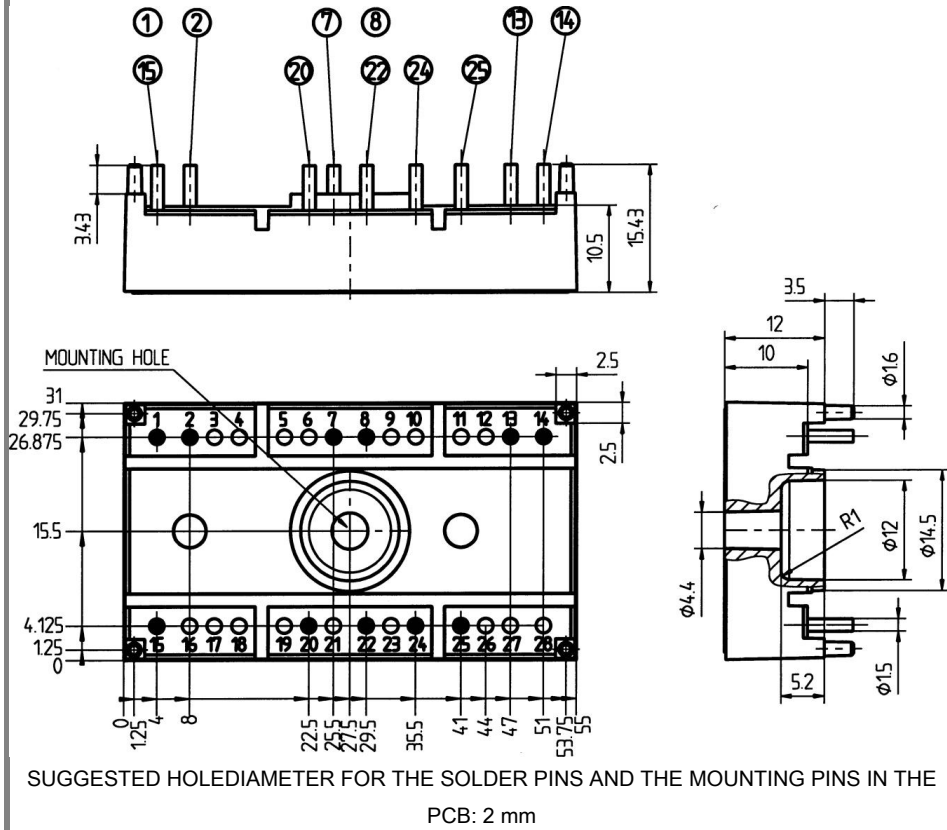
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SK 20 GD 123

UL Recognized
File no. E 63532

Dimensions in mm



Case T 12

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

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