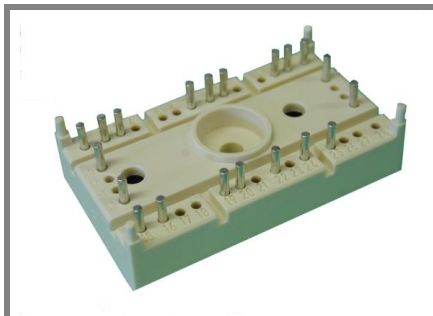


# SK 15 GD 126 ET



SEMITOP<sup>®</sup> 3

## 3-phase bridge inverter

SK 15 GD 126 ET

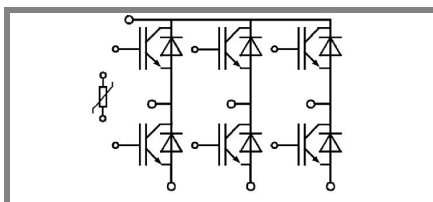
Preliminary Data

### Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminum oxide ceramic (DCB)
- Trench technology IGBT
- CAL High Density FWD
- Integrated NTC temperature sensor

### Typical Applications

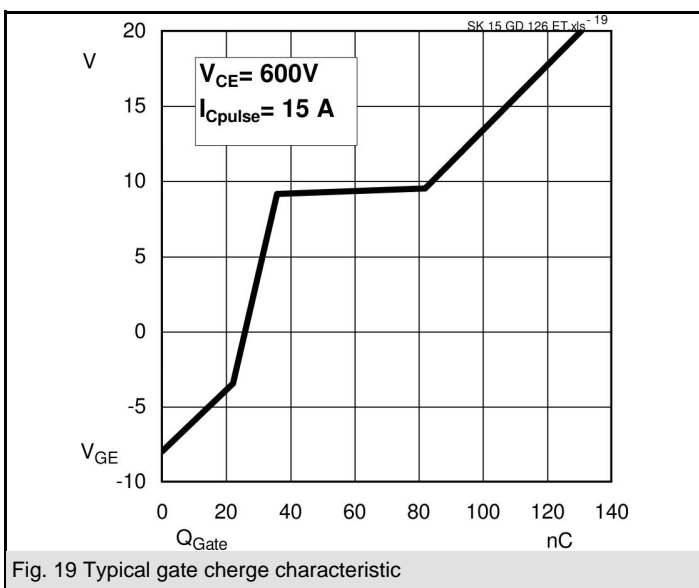
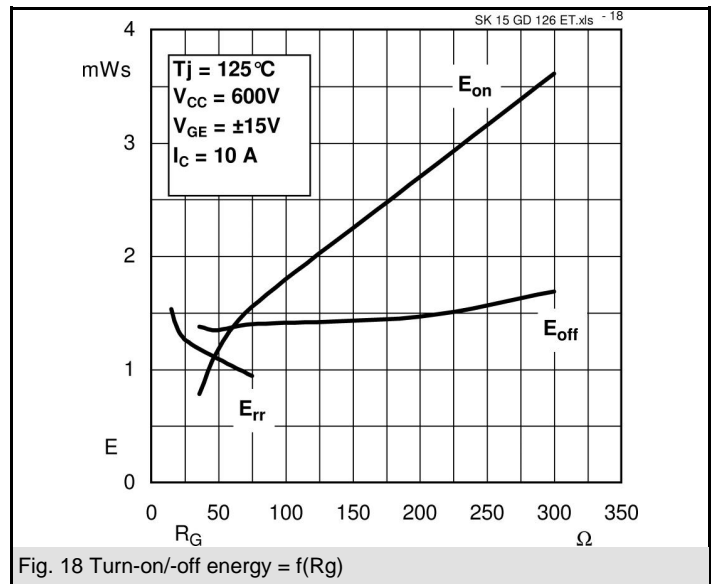
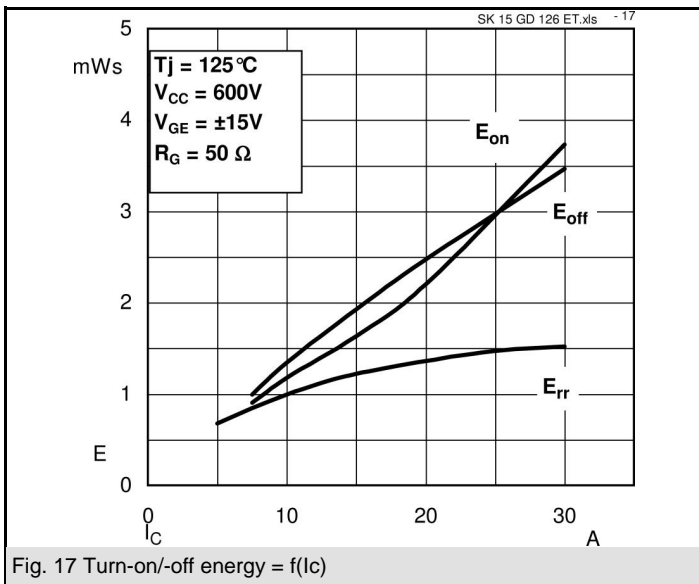
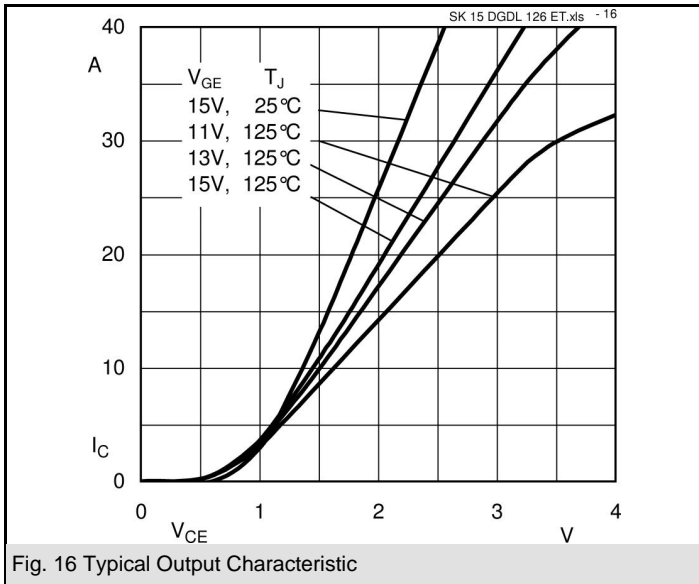
- Inverter

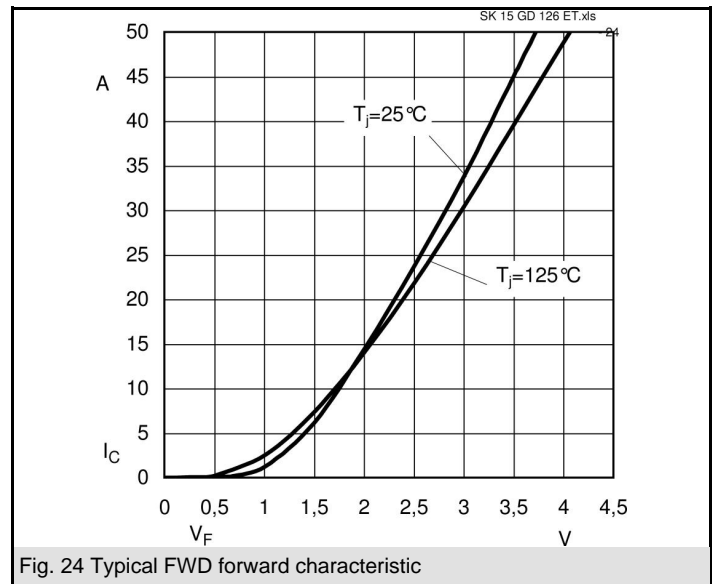
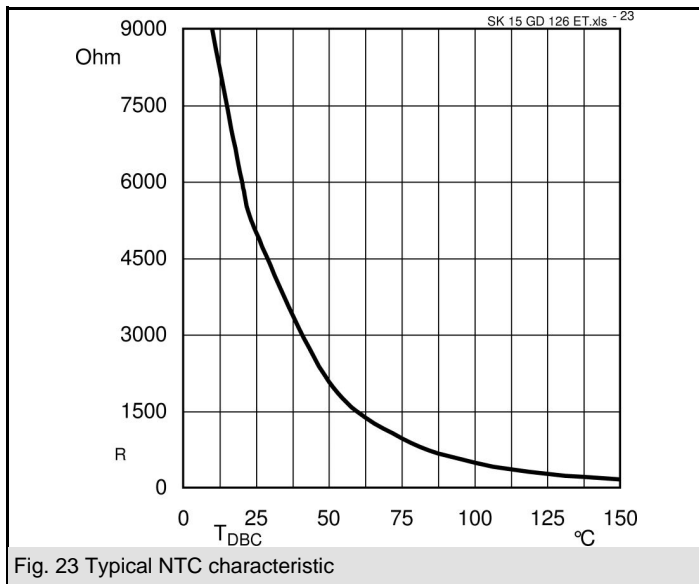
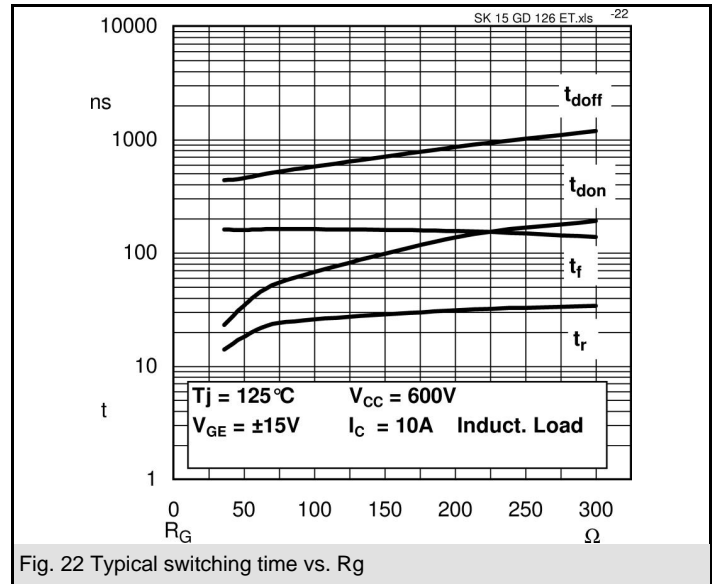
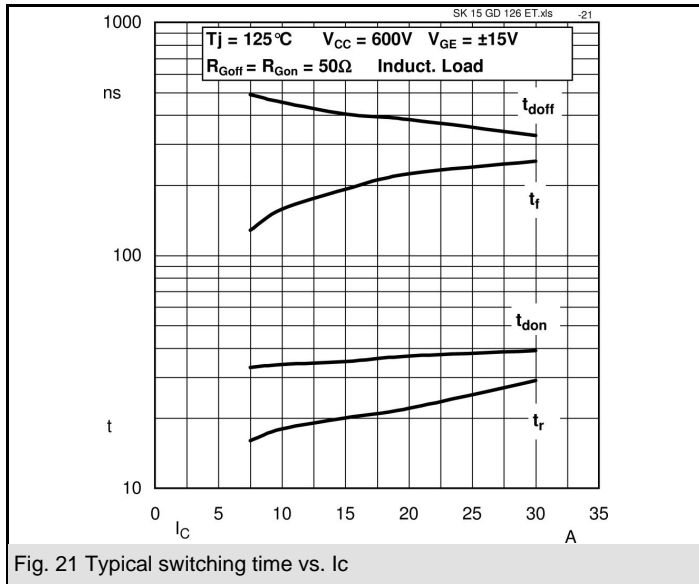


GD - ET

Absolute Maximum Ratings		T <sub>s</sub> = 25°C, unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT - Inverter, Chopper</b>			
V <sub>CES</sub>		1200	V
I <sub>C</sub>	T <sub>s</sub> = 25 (80) °C	22 (15)	A
I <sub>CM</sub>	T <sub>s</sub> = 25 (80) °C, tp ≤ 1 ms	44 (30)	A
V <sub>GES</sub>		±20	V
T <sub>j</sub>		-40 ... +150	°C
<b>Diode - Inverter, Chopper</b>			
I <sub>F</sub>	T <sub>s</sub> = 25 (80) °C	25 (17)	A
I <sub>FM</sub> = -I <sub>CM</sub>	T <sub>s</sub> = 25 (80) °C, tp ≤ 1 ms	50 (34)	A
T <sub>j</sub>		-40 ... +150	°C
<b>Rectifier</b>			
V <sub>RRM</sub>			V
I <sub>F</sub>	T <sub>s</sub> = °C		A
I <sub>FSM</sub> / I <sub>TSM</sub>	t <sub>p</sub> = ms, sin°, T <sub>j</sub> = °C		A
I <sub>t</sub> <sup>2</sup>	t <sub>p</sub> = ms, sin°, T <sub>j</sub> = °C		A <sup>2</sup> s
T <sub>j</sub>			°C
T <sub>sol</sub>	Terminals, 10s	260	°C
T <sub>stg</sub>		-40, ... +125	°C
V <sub>isol</sub>	AC, 1 min. / 1s	2500 / 3000	V

Characteristics		T <sub>s</sub> = 25°C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT - Inverter, Chopper</b>					
V <sub>CEsat</sub>	I <sub>C</sub> = 15 A, T <sub>j</sub> = 25 (125) °C		1,7 (2,2)	2,1	V
V <sub>GE(th)</sub>	V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = 0,6 mA	5	5,8	6,5	V
V <sub>CE(TO)</sub>	T <sub>j</sub> = 25 °C (125) °C		1 (0,9)	1,2	V
r <sub>T</sub>	T <sub>j</sub> = 25 °C (125) °C		47 (73)	60	mΩ
C <sub>ies</sub>	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1 MHz		1,2		nF
C <sub>oes</sub>	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1 MHz		0,3		nF
C <sub>res</sub>	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1 MHz		0,2		nF
R <sub>th(j-s)</sub>	per IGBT			1,6	K/W
t <sub>d(on)</sub>	under following conditions		35		ns
t <sub>r</sub>	V <sub>CC</sub> = 600 V, V <sub>GE</sub> = ± 15 V		20		ns
t <sub>d(off)</sub>	I <sub>C</sub> = 15 A, T <sub>j</sub> = 125 °C		403		ns
t <sub>f</sub>	R <sub>Gon</sub> = R <sub>Goff</sub> = 50 Ω		192		ns
E <sub>on</sub>	inductive load		1,63		mJ
E <sub>off</sub>			1,93		mJ
<b>Diode - Inverter, Chopper</b>					
V <sub>F</sub> = V <sub>EC</sub>	I <sub>F</sub> = 15 A, T <sub>j</sub> = 25 (125) °C		1,6 (1,6)	1,8	V
V <sub>(TO)</sub>	T <sub>j</sub> = 25 °C (125) °C		1 (0,8)	1,1	V
r <sub>T</sub>	T <sub>j</sub> = 25 °C (125) °C		40 (53)	47	mΩ
R <sub>th(j-s)</sub>	per diode			2,1	K/W
I <sub>RRM</sub>	under following conditions		21		A
Q <sub>rr</sub>	I <sub>F</sub> = 15 A, V <sub>R</sub> = 600 V		3,5		μC
E <sub>rr</sub>	V <sub>GE</sub> = 0 V, T <sub>j</sub> = 125 °C		1,4		mJ
	di <sub>F/dt</sub> = 570 A/μs				
<b>Diode rectifier</b>					
V <sub>F</sub>	I <sub>F</sub> = A, T <sub>j</sub> = 25 °C				V
V <sub>(TO)</sub>	T <sub>j</sub> = °C				V
r <sub>T</sub>	T <sub>j</sub> = °C				mΩ
R <sub>th(j-s)</sub>	per diode				K/W
<b>Temperatur sensor</b>					
R <sub>ts</sub>	5 %, T <sub>r</sub> = 25 (100) °C		5000(493)		Ω
<b>Mechanical data</b>					
w			30		g
M <sub>s</sub>	Mounting torque			2,5	Nm

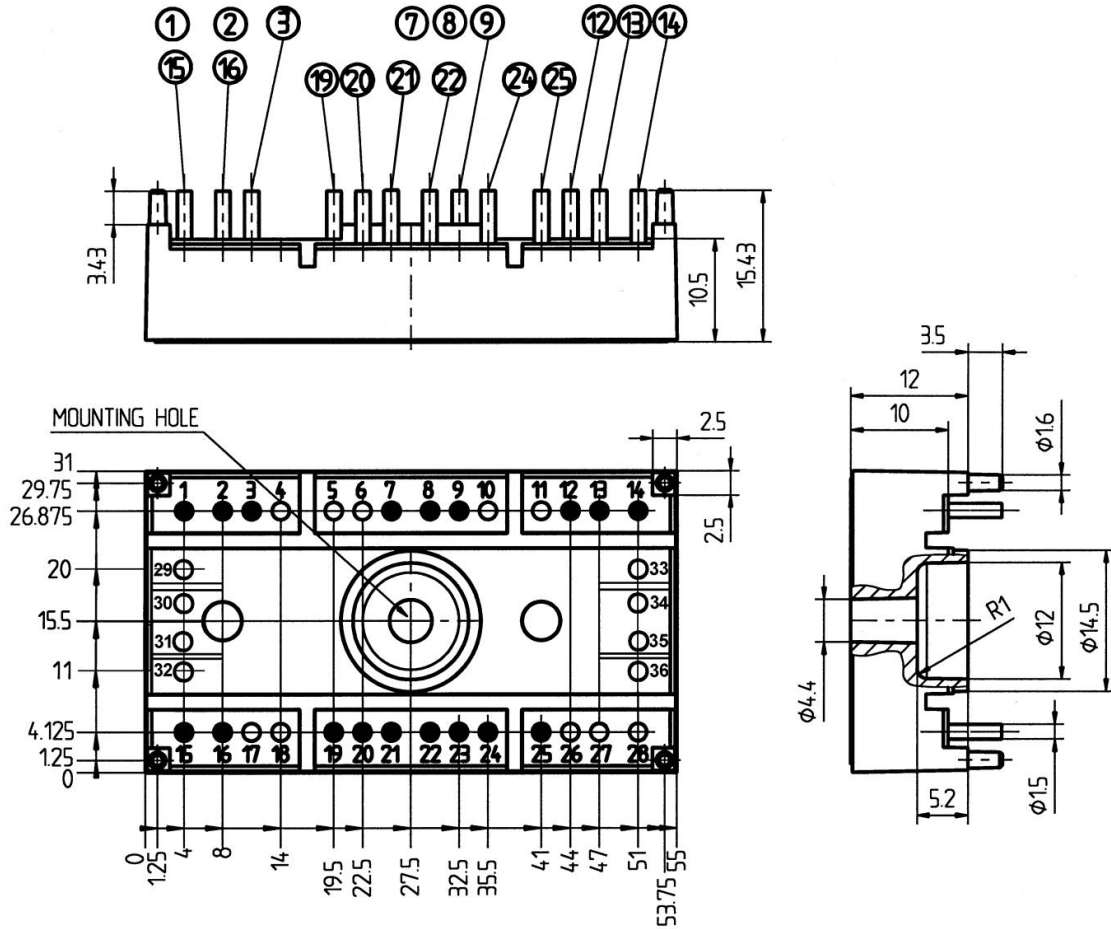




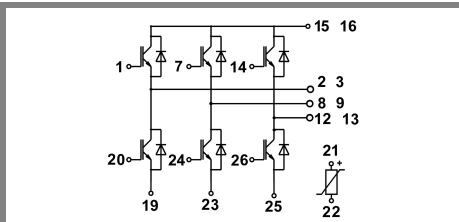
# SK 15 GD 126 ET

UL Recognized  
File no. E63 532

Dimensions in mm



Case T 52 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 52

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

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