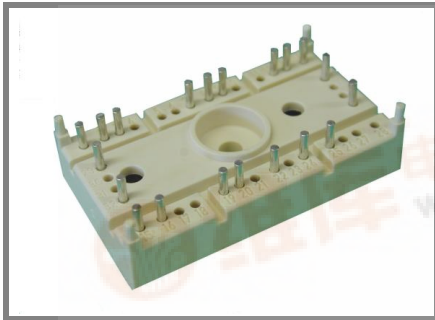


# SK 15 DGDL 065 ET



SEMITOP® 3

3-phase bridge rectifier +  
brake chopper +3-phase  
bridge inverter  
**SK 15 DGDL 065 ET**

Preliminary Data

### Features

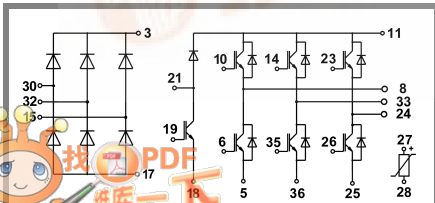
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminum oxide ceramic (DCB)
- Ultrafast NPT technology IGBT
- CAL Technology FWD
- Integrated NTC temperature sensor

### Typical Applications

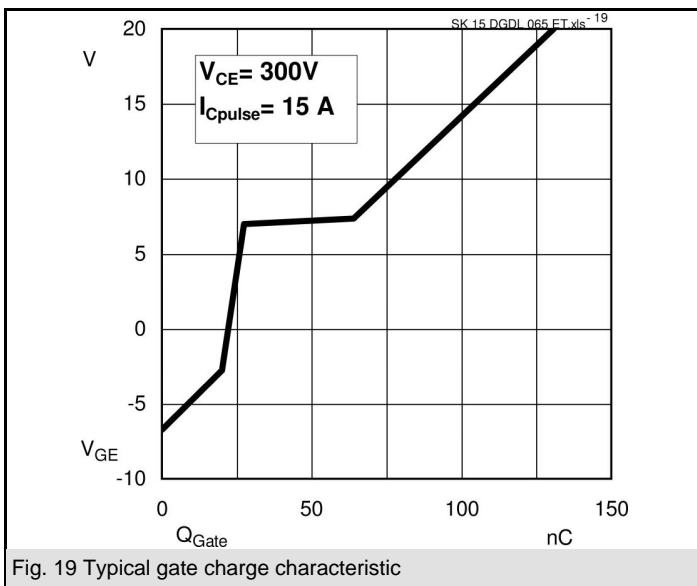
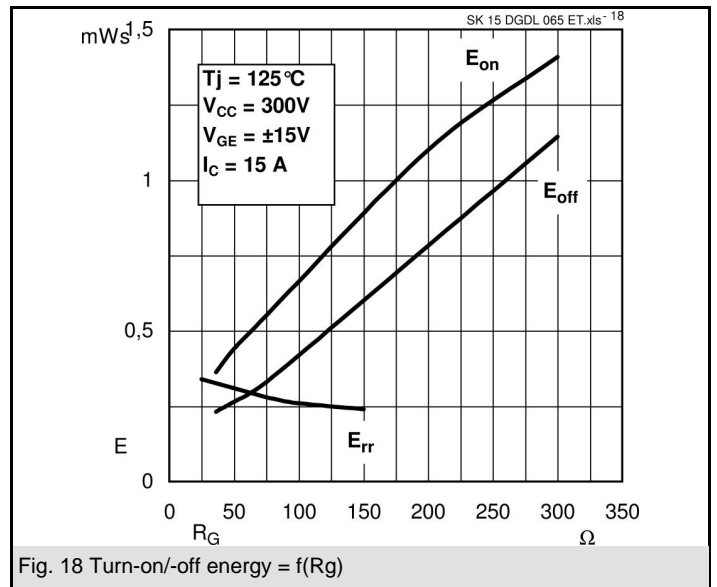
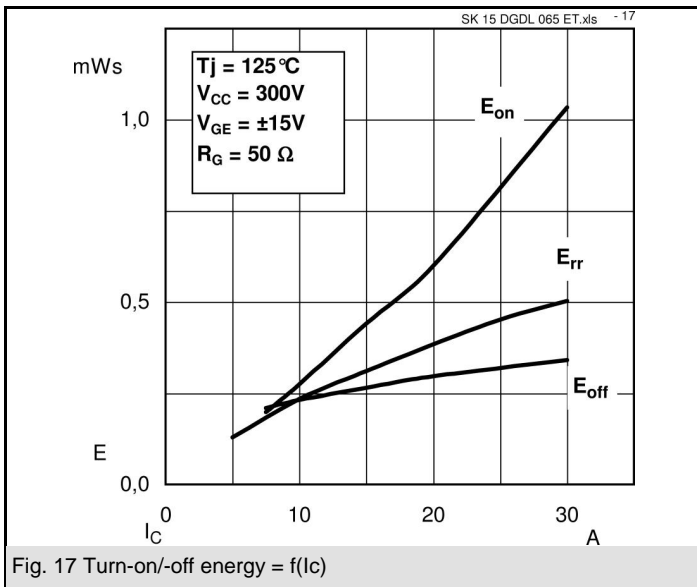
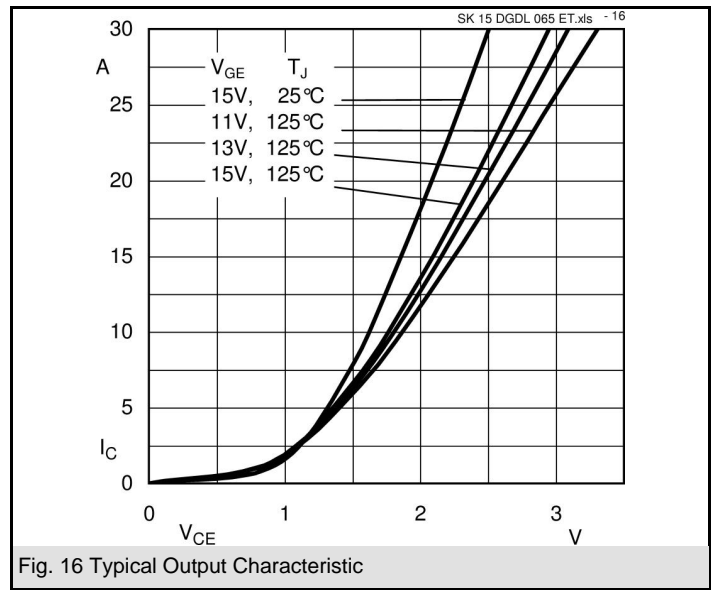
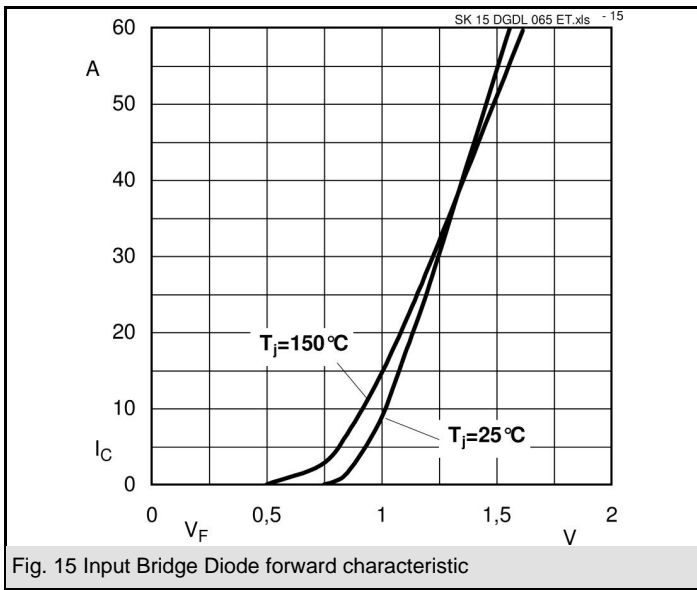
- Inverter

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>		600	V
I <sub>C</sub>	T <sub>s</sub> = 25 (80) °C	19 (14)	A
I <sub>CM</sub>	T <sub>s</sub> = 25 (80) °C, tp ≤ 1 ms	38 (28)	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	22 (15)	A
I <sub>FM</sub> = -I <sub>CM</sub>	T <sub>s</sub> = 25 (80) °C, tp ≤ 1 ms	44 (30)	A
T <sub>j</sub>		-40 ... +150	°C
<b>Rectifier</b>			
V <sub>RRM</sub>		800	V
I <sub>FAV</sub> / I <sub>TAV</sub>	T <sub>s</sub> = 80 °C	16	A
I <sub>FSM</sub> / I <sub>TSM</sub>	t <sub>p</sub> = 10 ms, sin 180°, T <sub>j</sub> = 25 °C	220	A
I <sub>t</sub> <sup>2</sup>	t <sub>p</sub> = 10 ms, sin 180°, T <sub>j</sub> = 25 °C	240	A <sup>2</sup> s
T <sub>j</sub>		-40 ... +150	°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

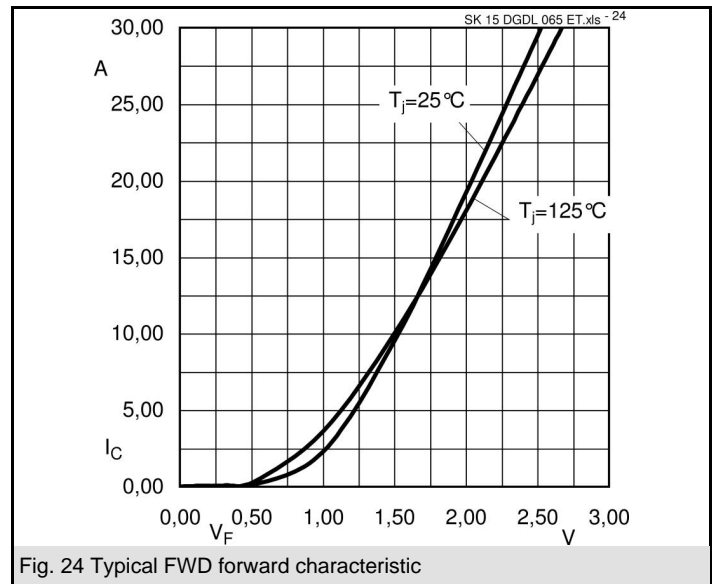
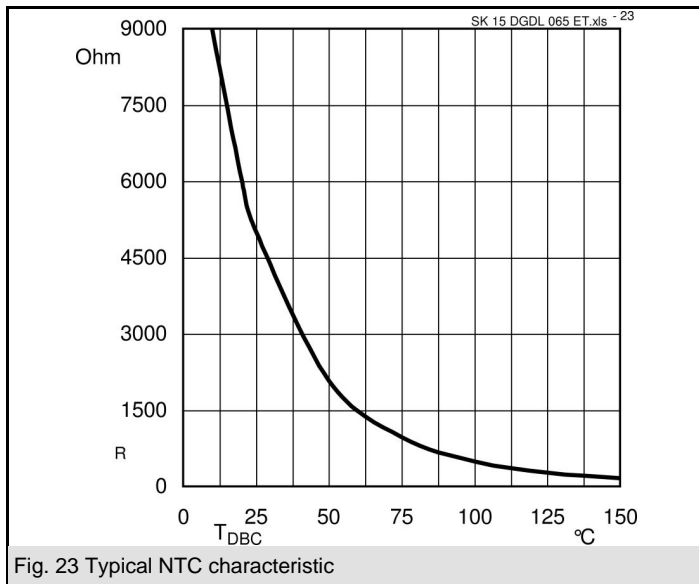
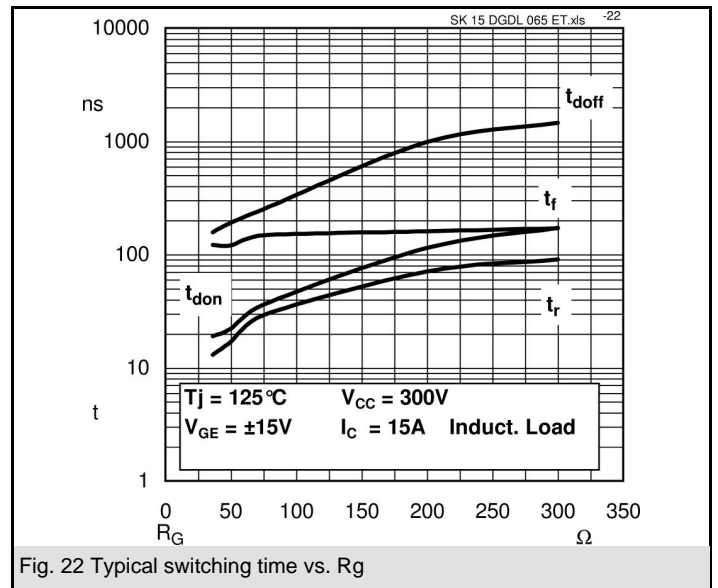
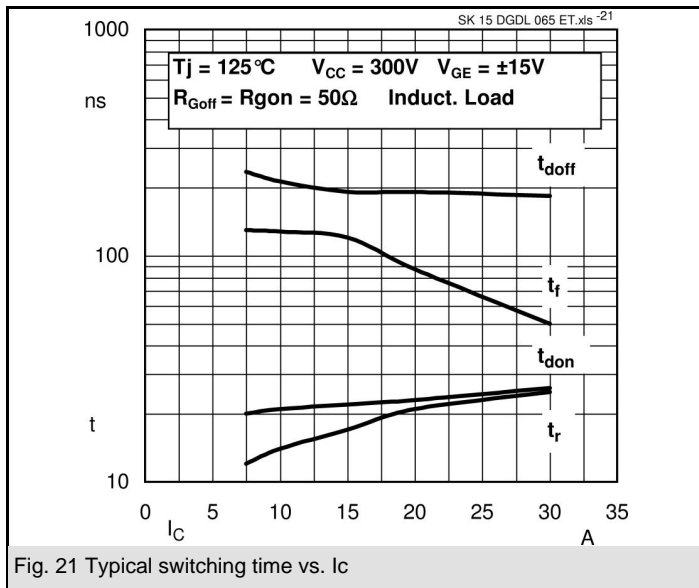
Characteristics		T <sub>s</sub> = 25°C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT - Inverter, Chopper</b>					
V <sub>CEsat</sub>	I <sub>C</sub> = 10 A, T <sub>j</sub> = 25 (125) °C		2 (2,2)	2,5	V
V <sub>GE(th)</sub>	V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = 0,5 mA	3	4	5	V
V <sub>CE(TO)</sub>	T <sub>j</sub> = 25 °C (125) °C		1,2 (1,1)	1,2	V
r <sub>T</sub>	T <sub>j</sub> = 25 °C (125) °C		80 (110)	120	mΩ
C <sub>ies</sub>	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1 MHz		0,8		nF
C <sub>oes</sub>	V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V, f = 1 MHz		0,2		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			1,9	K/W
t <sub>d(on)</sub>	under following conditions		45		ns
t <sub>r</sub>	V <sub>CC</sub> = 300 V, V <sub>GE</sub> = ± 15 V		40		ns
t <sub>d(off)</sub>	I <sub>C</sub> = 10 A, T <sub>j</sub> = 125 °C		340		ns
t <sub>f</sub>	R <sub>Gon</sub> = R <sub>Goff</sub> = 125 Ω		90		ns
E <sub>on</sub>	inductive load		0,3		mJ
E <sub>off</sub>			0,22		mJ
<b>Diode - Inverter, Chopper</b>					
V <sub>F</sub> = V <sub>EC</sub>	I <sub>F</sub> = 10 A, T <sub>j</sub> = 25 (125) °C		1,4 (1,4)	1,7	V
V <sub>(TO)</sub>	T <sub>j</sub> = 25 °C (125) °C		1 (0,9)	1,1	V
r <sub>T</sub>	T <sub>j</sub> = 25 °C (125) °C		45 (50)	60	mΩ
R <sub>th(j-s)</sub>	per diode			2,3	K/W
I <sub>RRM</sub>	under following conditions		11		A
Q <sub>rr</sub>	I <sub>F</sub> = 10 A, V <sub>R</sub> = 300 V		1,1		μC
E <sub>rr</sub>	V <sub>GE</sub> = 0 V, T <sub>j</sub> = 125 °C		0,24		mJ
	di <sub>F/dt</sub> = 290 A/μs				
<b>Diode rectifier</b>					
V <sub>F</sub>	I <sub>F</sub> = 15 A, T <sub>j</sub> = 25 °C		1,1		V
V <sub>(TO)</sub>	T <sub>j</sub> = 150 °C		0,8		V
r <sub>T</sub>	T <sub>j</sub> = 150 °C		20		mΩ
R <sub>th(j-s)</sub>	per diode			2,7	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



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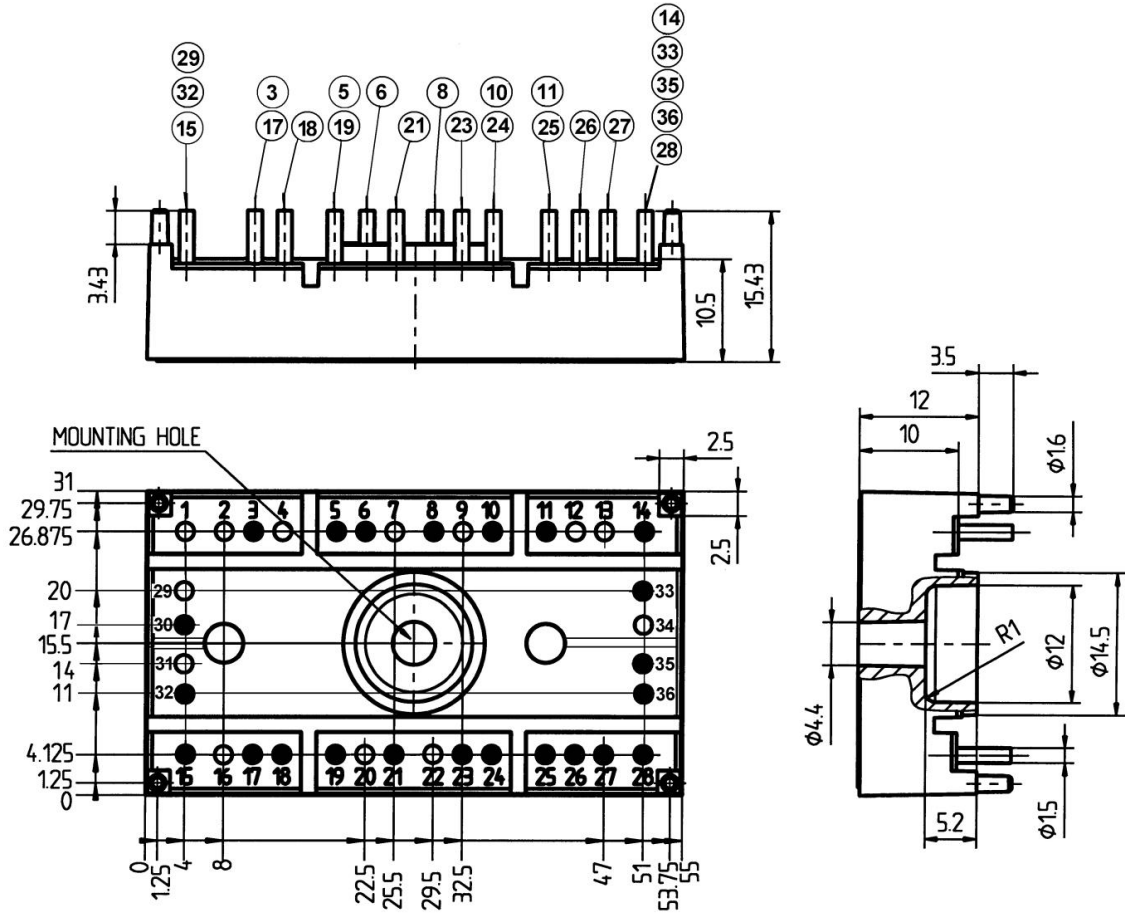


# SK 15 DGDL 065 ET

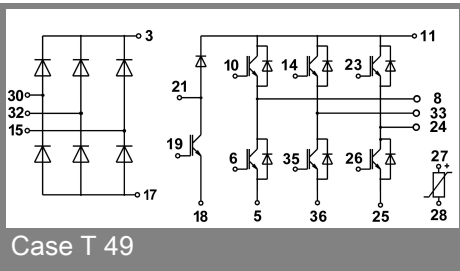


# SK 15 DGDL 065 ET

Dimensions in mm



Case T 49 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 49

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

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