

SEMITOP[®] 3

3-phase bridge inverter

SK 35 GD 065 ET

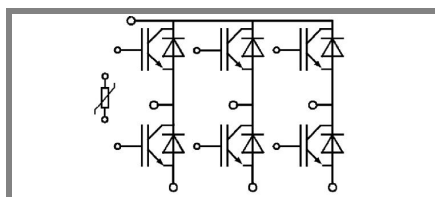
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Ultrafast NPT technology IGBT
- CAL Technology FWD
- Integrated NTC temperature sensor
- UL recognized, file no. E63 532

Typical Applications

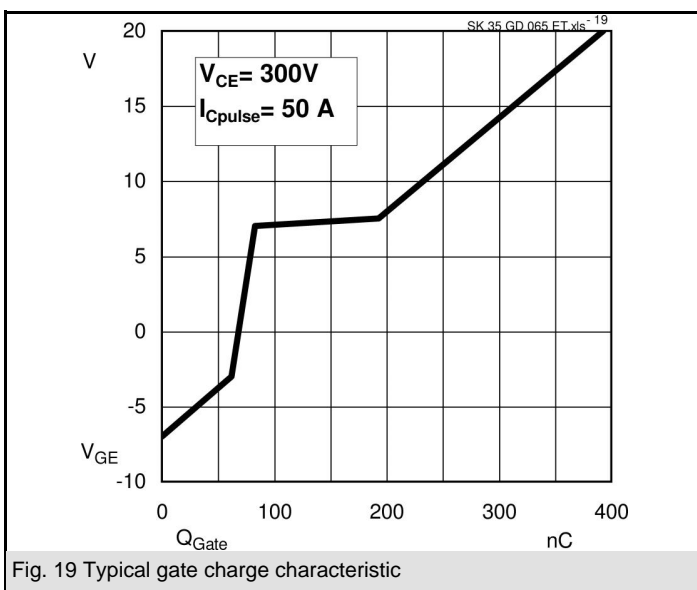
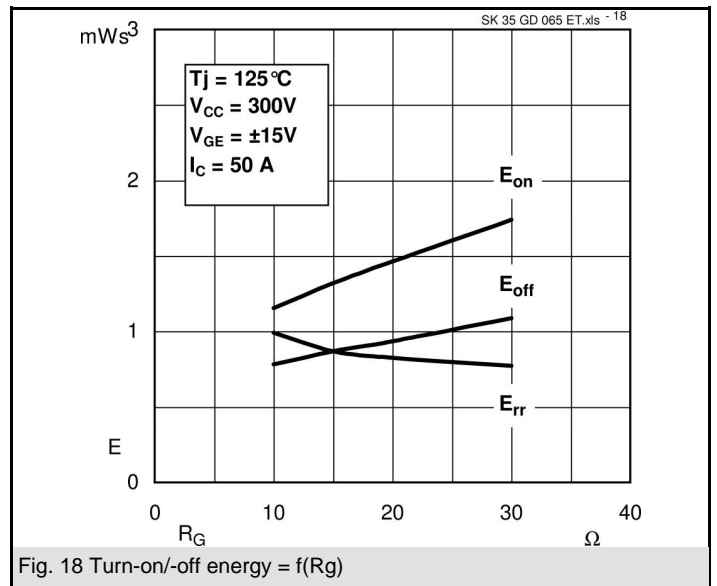
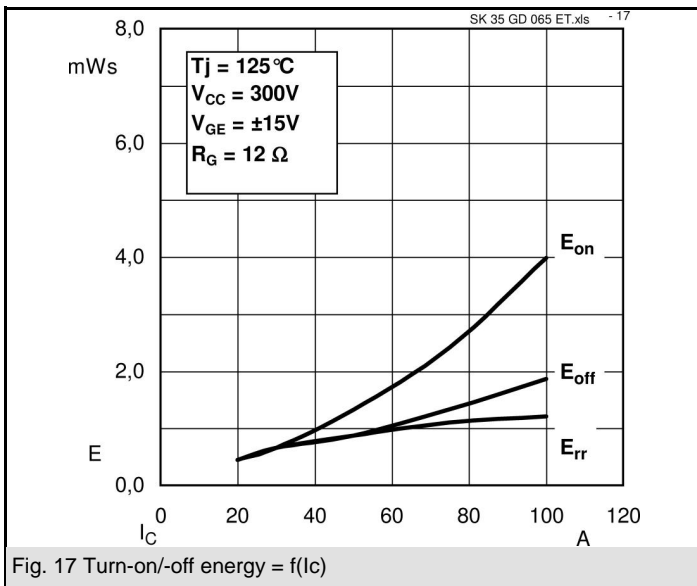
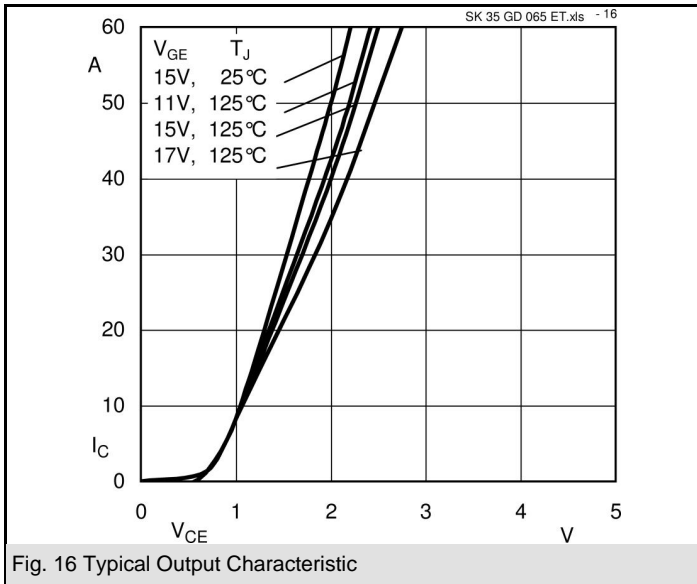
- Inverter

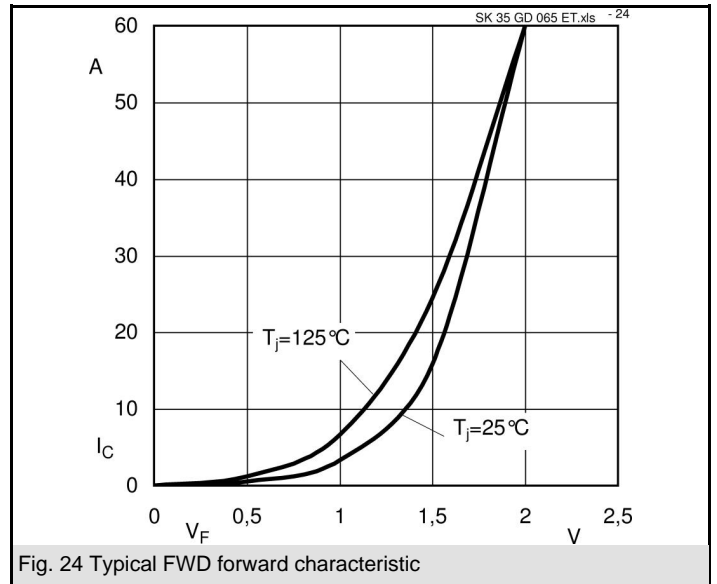
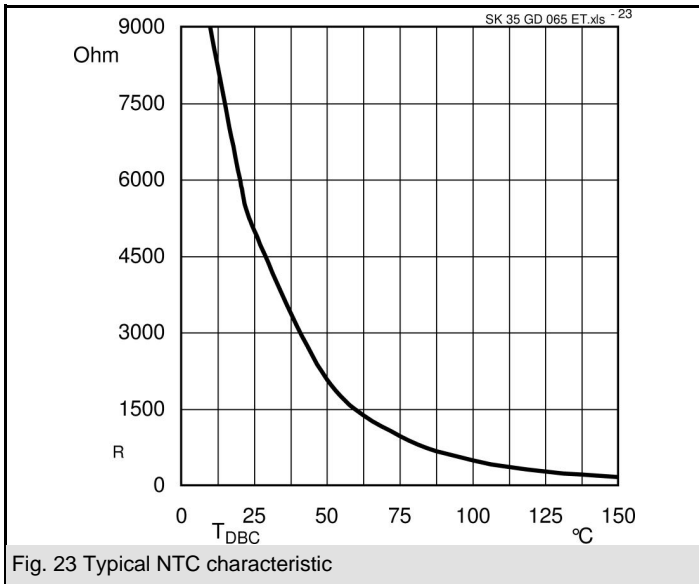
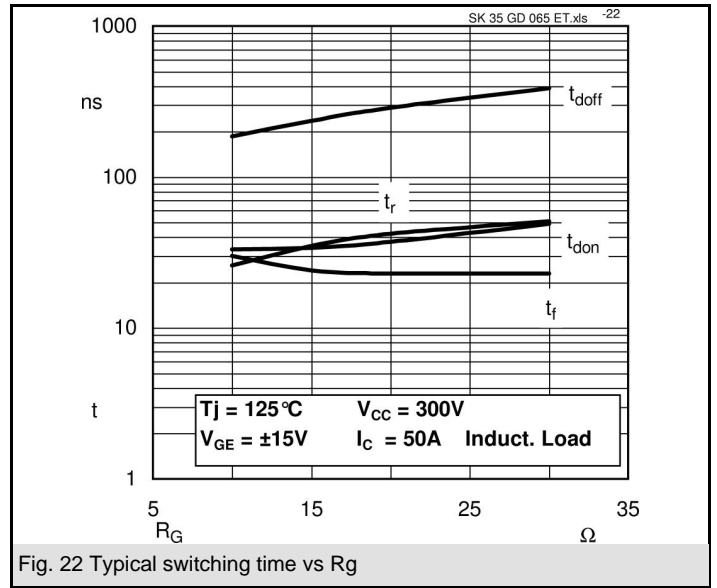
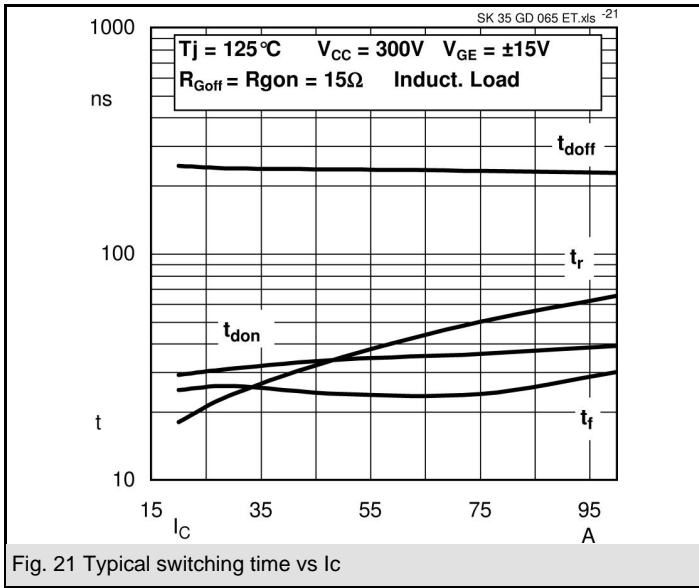


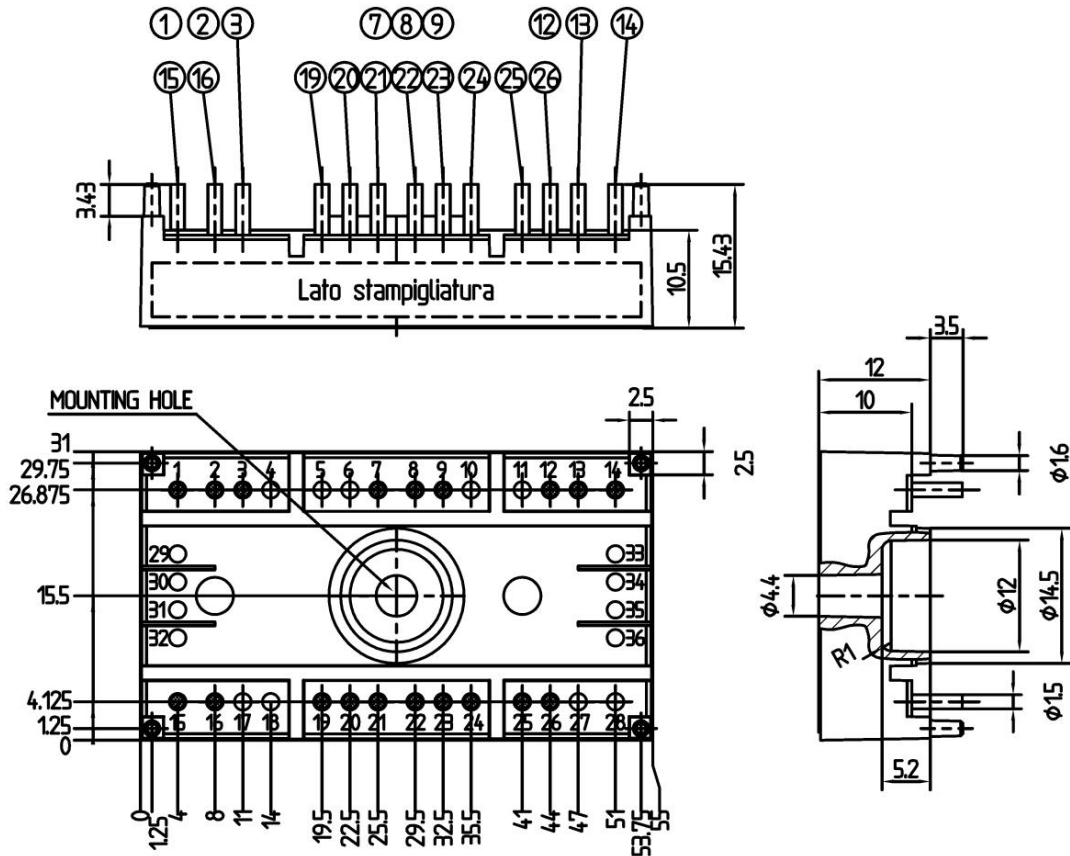
GD - ET

Absolute Maximum Ratings		$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT - Inverter, Chopper			
V_{CES}	$T_s = 25$ (80) $^\circ\text{C}$, $t_p = 1$ ms	600	V
I_C		45 (33)	A
I_{CRM}		90	A
V_{GES}		± 20	V
T_j		-40 ... +150	$^\circ\text{C}$
Diode - Inverter, Chopper			
I_F	$T_s = 25$ (80) $^\circ\text{C}$	36 (24)	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$, $t_p = 1$ ms	80	A
T_j		-40 ... +150	$^\circ\text{C}$
Rectifier			
V_{RRM}	$T_s = ^\circ\text{C}$ $t_p =$ ms , \sin° , $T_j = ^\circ\text{C}$ $t_p =$ ms , \sin° , $T_j = ^\circ\text{C}$		V
I_F			A
I_{FSM} / I_{TSM}			A
I_t^2			A^2s
T_j			$^\circ\text{C}$
T_{sol}	Terminals, 10s	260	$^\circ\text{C}$
T_{stg}		-40 ... +125	$^\circ\text{C}$
V_{isol}	AC, 1 min. / 1s	2500 / 3000	V

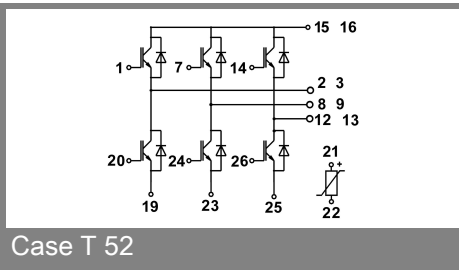
Characteristics		$T_s = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT - Inverter, Chopper					
V_{CEsat}	$I_C = 50$ A, $T_j = 25$ (125) $^\circ\text{C}$		2 (2,2)	2,5 (2,7)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 2$ mA	3	4	5	V
$V_{CE(TO)}$	$T_j = 25$ $^\circ\text{C}$ (125) $^\circ\text{C}$		1,2 (1,1)	1,3 (1,2)	V
r_T	$T_j = 25$ $^\circ\text{C}$ (125) $^\circ\text{C}$		16 (22)	24 (30)	m Ω
C_{ies}	$V_{CE} = 25$ V, $V_{GE} = 0$ V, $f = 1$ MHz		2,7		nF
C_{oes}	$V_{CE} = 25$ V, $V_{GE} = 0$ V, $f = 1$ MHz		0,8		nF
C_{res}	$V_{CE} = 25$ V, $V_{GE} = 0$ V, $f = 1$ MHz		0,6		nF
$R_{th(j-s)}$	per IGBT			1	K/W
$t_{d(on)}$	under following conditions		35		ns
t_r	$V_{CC} = 300$ V, $V_{GE} = \pm 15$ V		35		ns
$t_{d(off)}$	$I_C = 50$ A, $T_j = 125$ $^\circ\text{C}$		240		ns
t_f	$R_{Gon} = R_{Goff} = 15$ Ω		25		ns
E_{on}	inductive load		1,3		mJ
E_{off}			0,6		mJ
Diode - Inverter, Chopper					
$V_F = V_{EC}$	$I_F = 50$ A, $T_j = 25$ (125) $^\circ\text{C}$		1,9 (1,9)	2,3 (2,4)	V
$V_{(TO)}$	$T_j = 25$ $^\circ\text{C}$ (125) $^\circ\text{C}$		1 (0,9)	1,1	V
r_T	$T_j = 25$ $^\circ\text{C}$ (125) $^\circ\text{C}$		18 (20)	24 (28)	m Ω
$R_{th(j-s)}$	per diode			1,7	K/W
I_{RRM}	under following conditions		57		A
Q_{rr}	$I_F = 50$ A, $V_R = 300$ V		4,6		μC
E_{rr}	$V_{GE} = 0$ V, $T_j = 125$ $^\circ\text{C}$ $di_F/dt = 2400$ A/ μs		0,9		mJ
Diode rectifier					
V_F	$I_F =$ A, $T_j = 25$ $^\circ\text{C}$				V
$V_{(TO)}$	$T_j = ^\circ\text{C}$				V
r_T	$T_j = ^\circ\text{C}$				m Ω
$R_{th(j-s)}$	per diode				K/W
Temperatur sensor					
R_{ts}	5 %, $T_r = 25$ (100) $^\circ\text{C}$		5000(493)		Ω
Mechanical data					
w			30		g
M_s	Mounting torque			2,5	Nm







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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