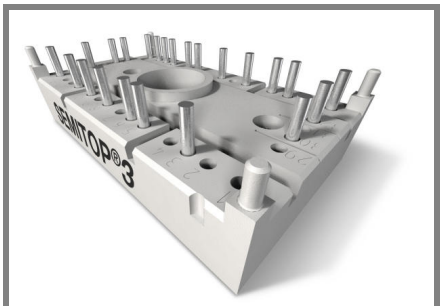
SK35GD126ET



SEMITOP® 3

IGBT Module

SK35GD126ET

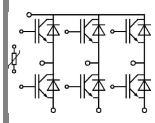
Preliminary Data

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

Typical Applications*

- Inverter

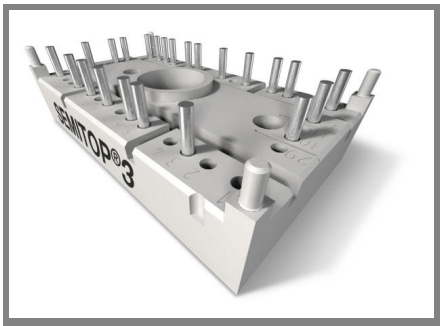


GD-ET

Absolute Maximum Ratings	T_s = 25 °C, unless otherwise specified			
Symbol	**Conditions**		**Values**	**Units**
IGBT				
V_{CES}	T_j = 25 °C		1200	V
I_C	T_j = 150 °C	T_s = 25 °C	40	A
		T_s = 80 °C	32	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom}		70	A
V_{GES}			± 20	V
t_{psc}	V_{CC} = 600 V; $V_{GE} \leq$ 20 V; V_{CES} < 1200 V	T_j = 125 °C	10	µs
Inverse Diode				
I_F	T_j = 150 °C	T_s = 25 °C	34	A
		T_s = 80 °C	23	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom}		70	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	°C
T_{stg}			-40 ... +125	°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 = 1,5 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C				mA
		T_j = 125 °C				mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			600	nA
		T_j = 125 °C				nA
V_{CE0}		T_j = 25 °C		1	1,2	V
		T_j = 125 °C		0,9		V
r_{CE}	V_{GE} = 15 V	T_j = 25°C		20	26	mΩ
		T_j = 125°C		31		mΩ
$V_{CE(sat)}$	I_{Cnom} = 35 A, V_{GE} = 15 V	T_j = 25°C$_{chiplev.}$		1,7	2,1	V
		T_j = 125°C$_{chiplev.}$		2		V
C_{ies}	V_{CE} = 25, V_{GE} = 0 V	f = 1 MHz		2,5		nF
C_{oes}				0,132		nF
C_{res}				0,115		nF
$t_{d(on)}$	R_{Gon} = 15 Ω	V_{CC} = 600V		85		ns
t_r		I_C= 35A		30		ns
E_{on}		T_j = 125 °C		4,6		mJ
$t_{d(off)}$	R_{Goff} = 15 Ω	V_{GE}=±15V		430		ns
t_f				90		ns
E_{off}				4,3		mJ
$R_{th(j-s)}$	per IGBT				1,05	K/W

SK35GD126ET



SEMITOP® 3

IGBT Module

SK35GD126ET

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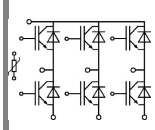


GD-ET

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 35 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,8	2,1	V
		T_j = 125 °$C_{chiplev.}$		1,8		V
V_{F0}		T_j = 25 °C		1	1,1	V
		T_j = 125 °C		0,8		V
r_F		T_j = 25 °C		23	29	mΩ
		T_j = 125 °C		31		mΩ
I_{RRM}	I_F = 35 A	T_j = 125 °C		43		A
Q_{rr}	di/dt = -1330 A/µs			7		µC
E_{rr}	V_{CC}= 600V			2,9		mJ
$R_{th(j-s)D}$	per diode				1,7	K/W
M_s	to heat sink		2,25		2,5	Nm
w				30		g
Temperature sensor						
R_{100}	T_s =100°C (R_{25}=5kΩ)			493±5%		Ω

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

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.

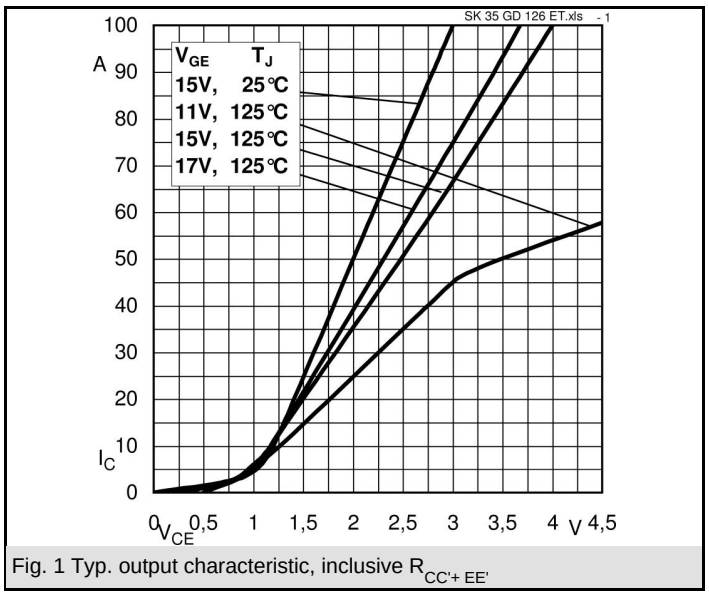


Fig. 1 Typ. output characteristic, inclusive $R_{CC'+EE'}$

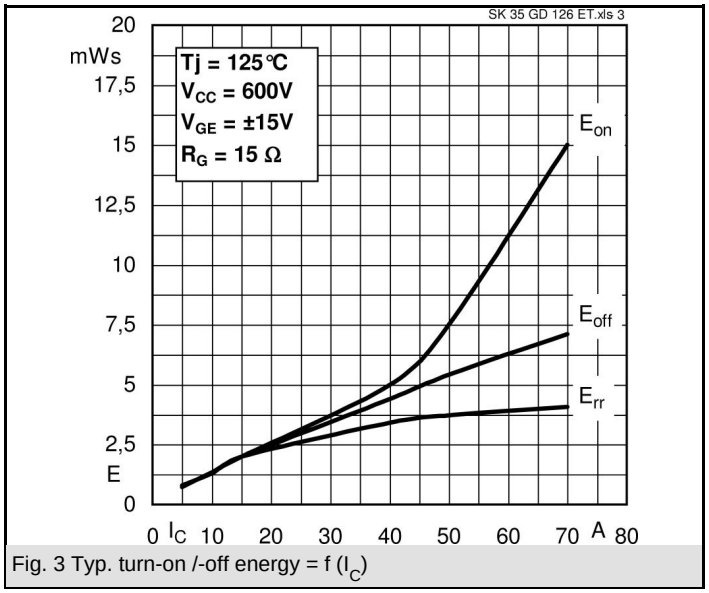


Fig. 3 Typ. turn-on /-off energy = f (I_C)

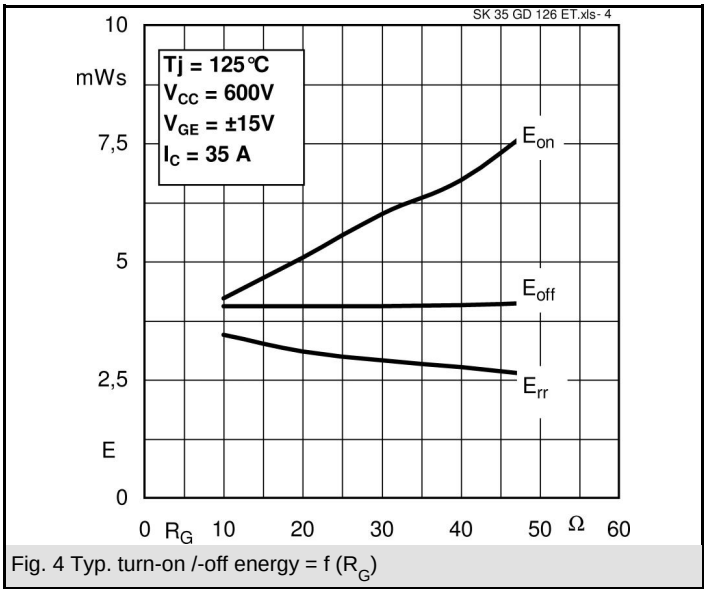


Fig. 4 Typ. turn-on /-off energy = f (R_G)

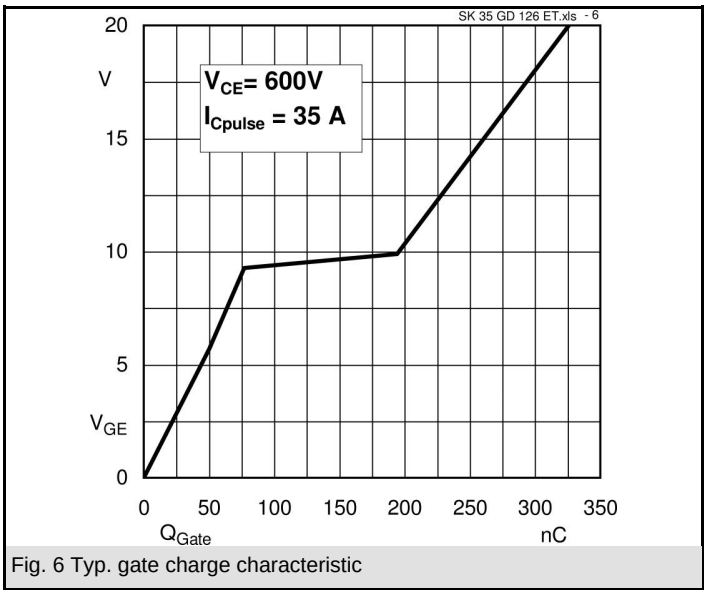


Fig. 6 Typ. gate charge characteristic

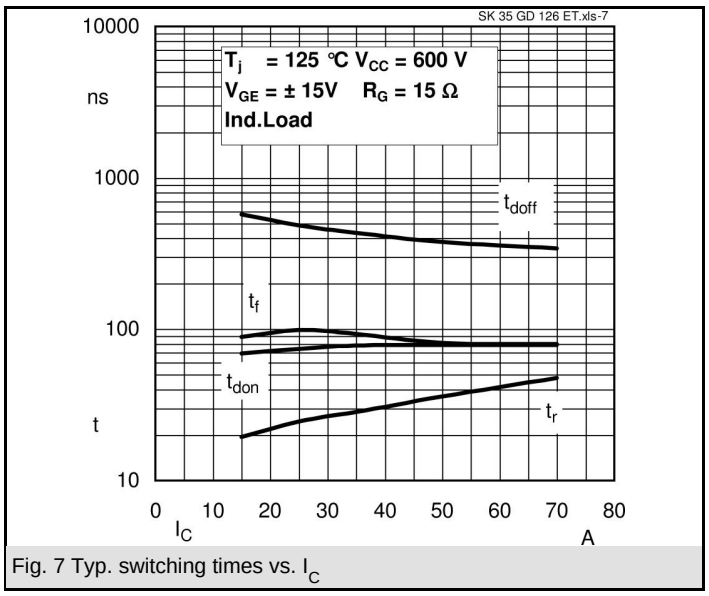


Fig. 7 Typ. switching times vs. I_C

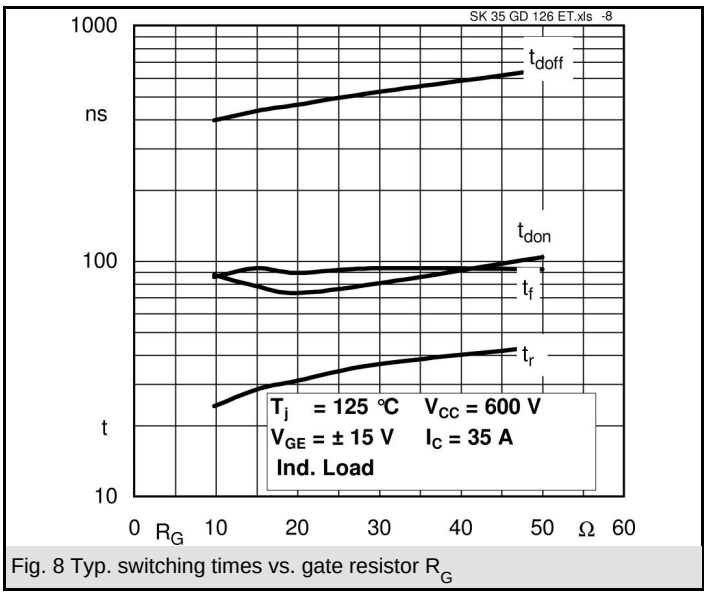


Fig. 8 Typ. switching times vs. gate resistor R_G

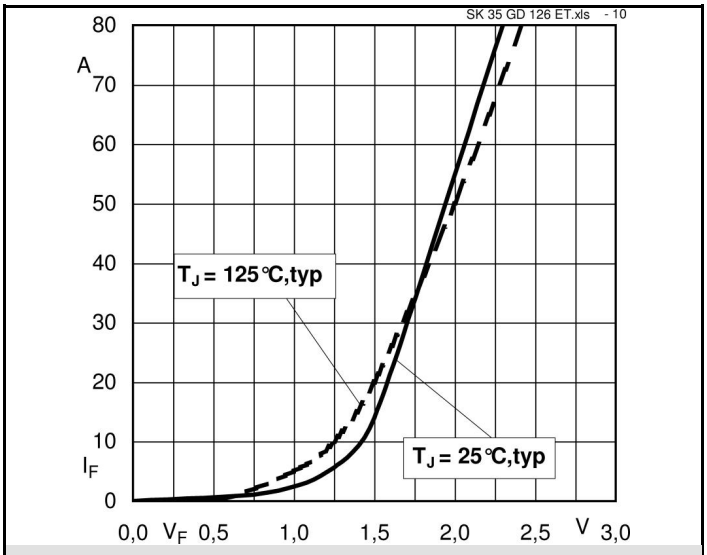
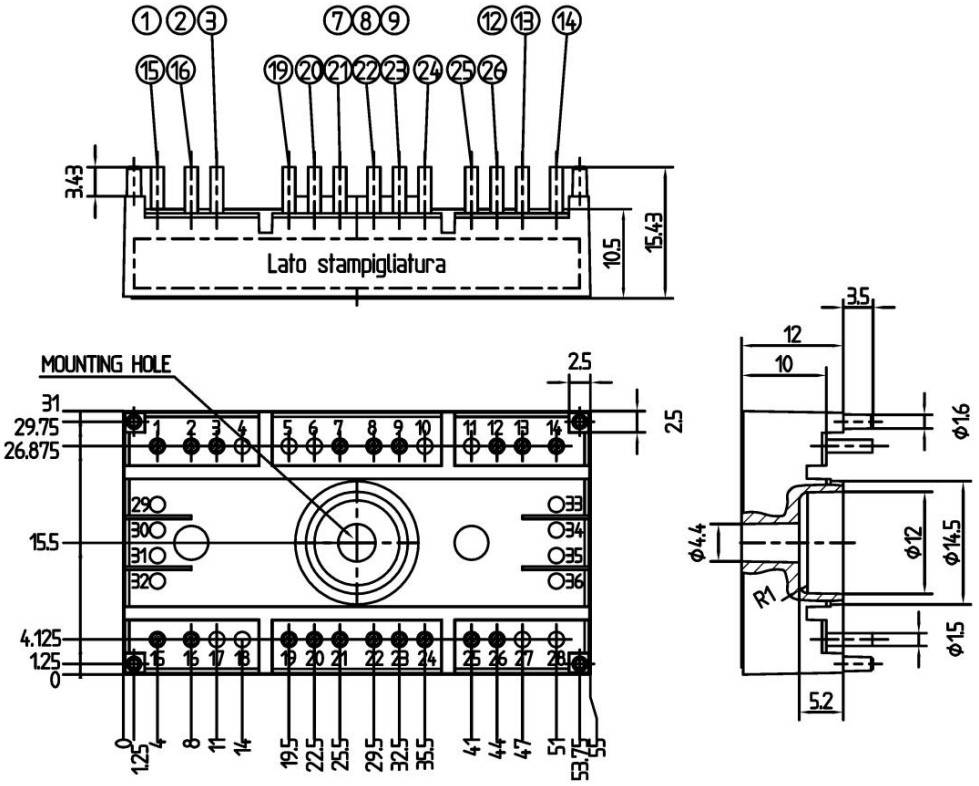
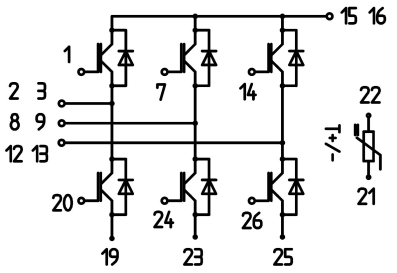


Fig. 10 CAL diode forward characteristic

UL recognized file no. E 63 532



Case T52 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 52 GD-ET

