

SK30GD066ETp



SEMITOP® 3 Press-Fit

Sixpack Open Emitter

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Features*

- One screw mounting module
- Low inductive design
- Press-Fit contact technology
- Fully compatible with other SEMITOP® Press-Fit types
- 600V Trench IGBT3 technology
- Robust and soft switching CAL HD diode technology
- Integrated NTC temperature sensor
- UL recognized, file no. E 63 532

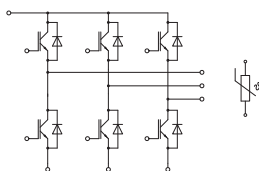
Typical Applications

- Motor drives
- Servo drives
- Air conditioning
- Auxiliary Inverters
- UPS

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
IGBT 1				
V _{CES}	T _j = 25 °C		600	V
I _C	T _j = 150 °C	T _s = 25 °C	33	A
		T _s = 70 °C	25	A
I _C	T _j = 175 °C	T _s = 25 °C	40	A
		T _s = 70 °C	31	A
I _{Cnom}			30	A
I _{CRM}			60	A
V _{GES}			-20 ... 20	V
t _{psc}	V _{CC} = 360 V V _{GE} ≤ 15 V V _{CES} ≤ 600 V	T _j = 150 °C	6	μs
T _j			-40 ... 175	°C

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Diode 1				
V _{RRM}	T _j = 25 °C		600	V
I _F	T _j = 150 °C	T _s = 25 °C	32	A
		T _s = 70 °C	24	A
I _F	T _j = 175 °C	T _s = 25 °C	36	A
		T _s = 70 °C	28	A
I _{FRM}			60	A
I _{FSM}	10 ms, sin 180°, T _j = 150 °C		160	A
T _j			-40 ... 175	°C

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
Module			
I _{t(RMS)}	ΔT _{terminal} at PCB joint = 30 K, per pin	35	A
T _{stg}		-40 ... 125	°C
V _{isol}	AC, sinusoidal, t = 1 min	2500	V



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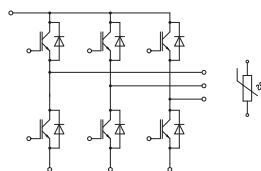
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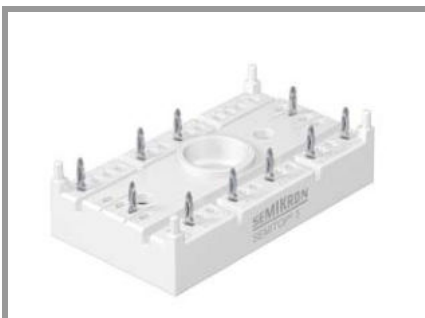


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Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
IGBT 1						
V _{CE(sat)}	I _C = 30 A	T _J = 25 °C		1.45	1.85	V
	V _{GE} = 15 V chiplevel	T _J = 150 °C		1.65	2.05	V
V _{CE0}	chiplevel	T _J = 25 °C		0.90	1.10	V
		T _J = 150 °C		0.80	1.00	V
r _{CE}	V _{GE} = 15 V	T _J = 25 °C		18	25	mΩ
	chiplevel	T _J = 150 °C		28	35	mΩ
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 0.43 mA		5	5.8	6.5	V
I _{CES}	V _{GE} = 0 V	T _J = 25 °C			0.01	mA
	V _{CE} = 600 V			-		mA
C _{ies}	V _{CE} = 25 V V _{GE} = 0 V	f = 1 MHz		1.63		nF
C _{oes}		f = 1 MHz		0.108		nF
C _{res}		f = 1 MHz		0.05		nF
Q _G	V _{GE} = -7V ... +15V			275		nC
R _{Gint}	T _J = 25 °C			0		Ω
t _{d(on)}	V _{CC} = 300 V	T _J = 150 °C		24		ns
t _r	I _C = 30 A	T _J = 150 °C		27		ns
E _{on}	V _{GE neg} = -7 V	T _J = 150 °C		0.97		mJ
	V _{GE pos} = 15 V	T _J = 150 °C		328		ns
t _{d(off)}	R _{G on} = 25 Ω	T _J = 150 °C		54		ns
t _f	R _{G off} = 25 Ω	T _J = 150 °C				
E _{off}	di/dt _{on} = 2335 A/μs di/dt _{off} = 2335 A/μs	T _J = 150 °C		1.77		mJ
R _{th(j-s)}	per IGBT, λ _{paste} =0.8 W/(mK)			1.65		K/W

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Diode 1						
V _F	I _F = 30 A	T _j = 25 °C		1.45	1.99	V
	chiplevel	T _j = 150 °C		1.61	1.92	V
V _{F0}	chiplevel	T _j = 25 °C		0.99	1.10	V
		T _j = 150 °C		0.80	0.89	V
r _F	chiplevel	T _j = 25 °C		18	30	mΩ
		T _j = 150 °C		27	34	mΩ
I _{RRM}	I _F = 30 A	T _j = 150 °C		30		A
Q _{rr}	di/dt _{off} = 2335 A/μs	T _j = 150 °C		1.6		μC
E _{rr}	V _{GE} = -7 V	T _j = 150 °C		0.26		mJ
	V _{CC} = 300 V					
R _{th(j-s)}	per Diode			2.1		K/W

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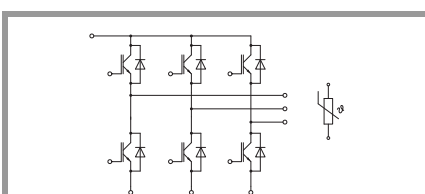
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Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Module					
M_s	to heatsink	2.25		2.5	Nm
w	weight		30		g

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Temperature Sensor					
R_{100}	$T_r = 100\text{ °C}$		$493 \pm 5\%$		Ω
$B_{100/125}$	$R(T) = R_{100} \exp[B_{100/125}(1/T - 1/T_{100})]$; $T[K]$		$3550 \pm 2\%$		K



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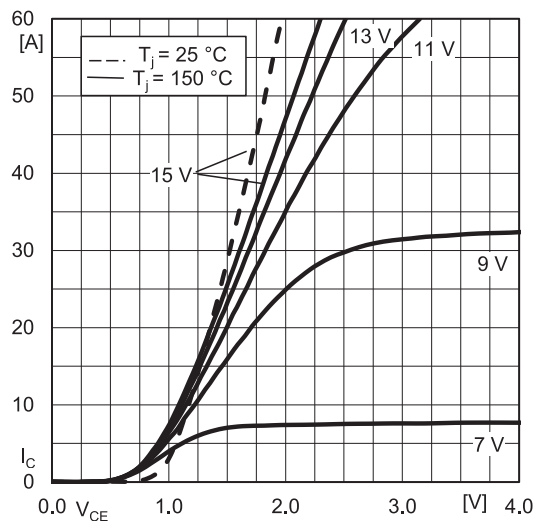


Fig. 1: Typ. IGBT output characteristic, incl. $R_{CC+EE'}$

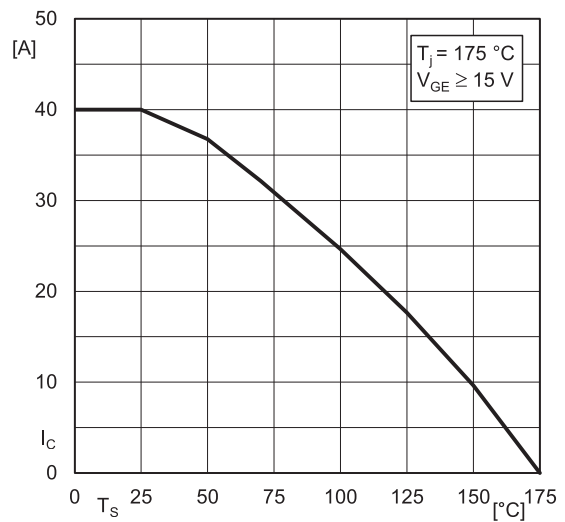


Fig. 2: IGBT rated current vs. temperature $I_C=f(T_s)$

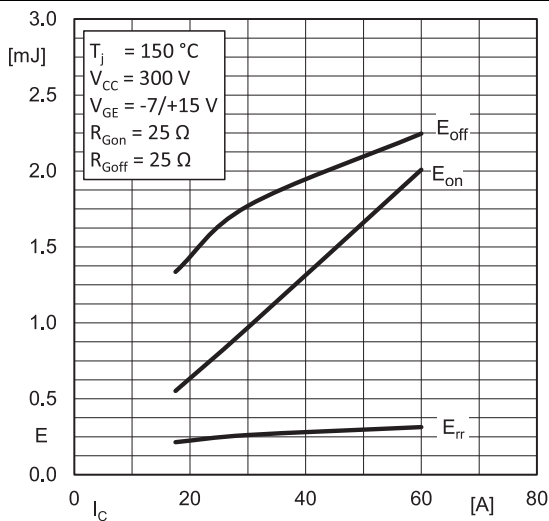


Fig. 3: Typ. turn-on /-off energy = $f(I_C)$

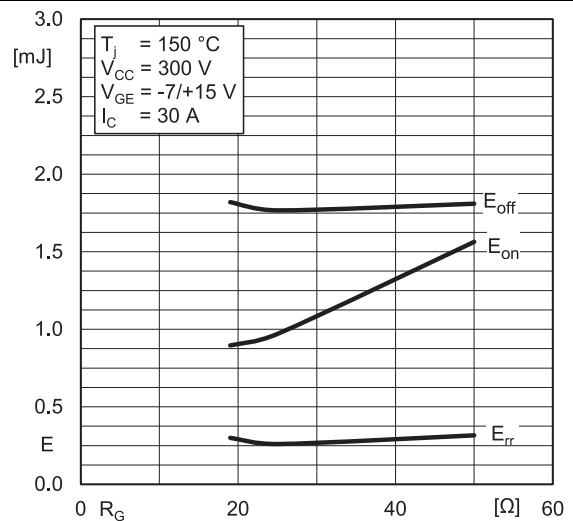


Fig. 4: Typ. turn-on /-off energy = $f(R_G)$

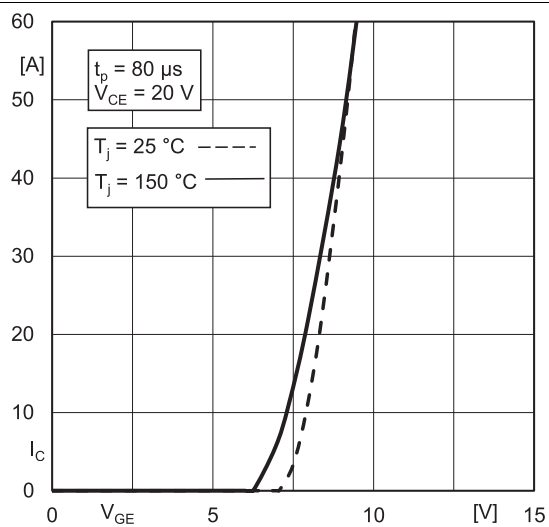


Fig. 5: Typ. IGBT transfer characteristic

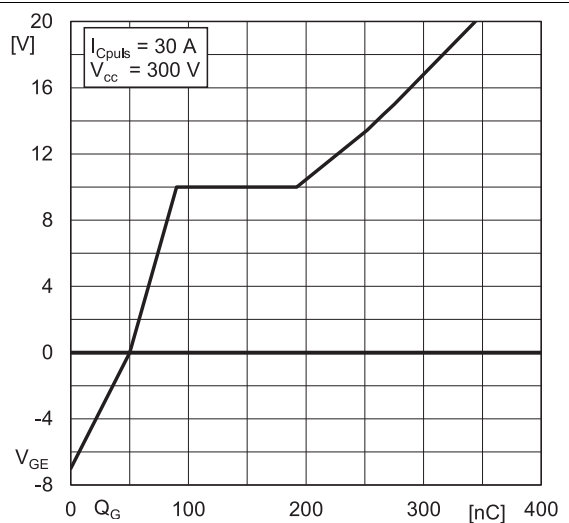
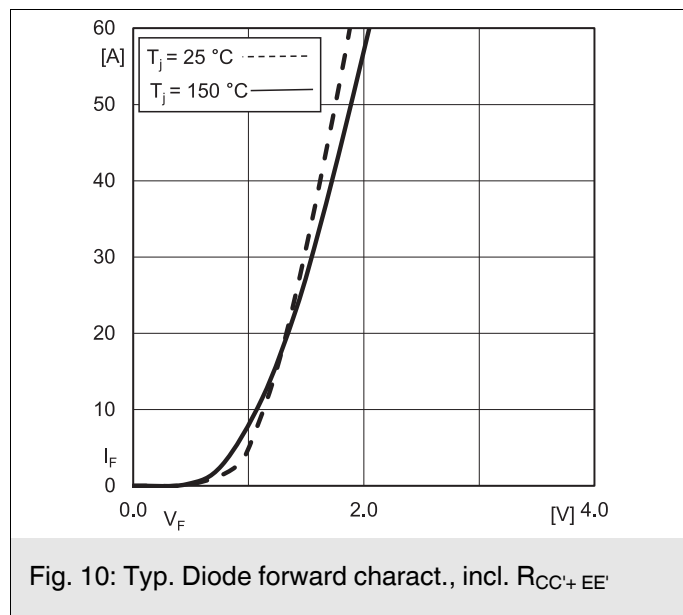
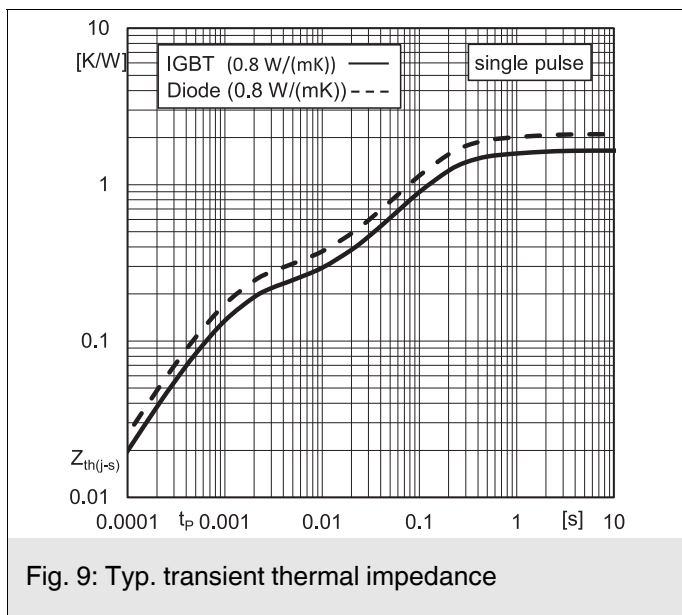
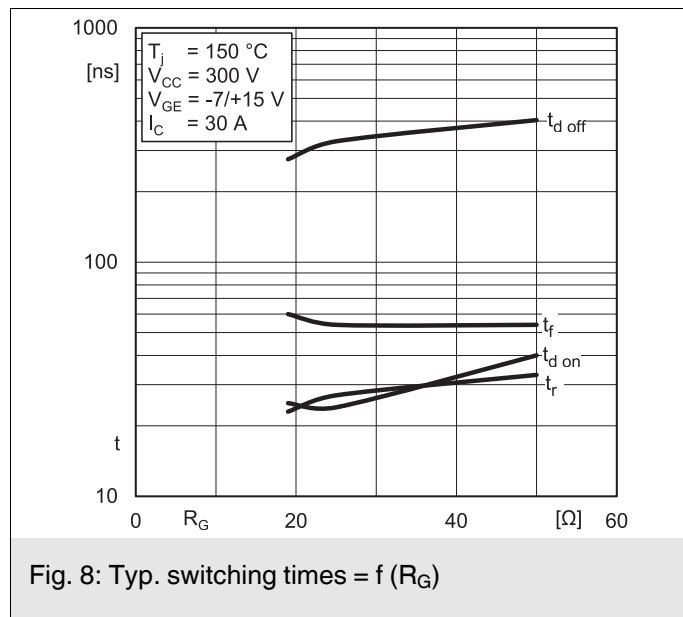
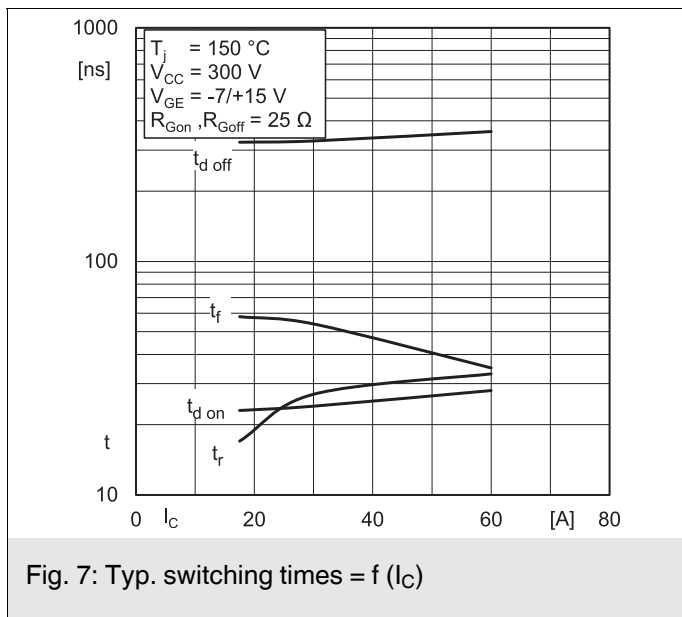
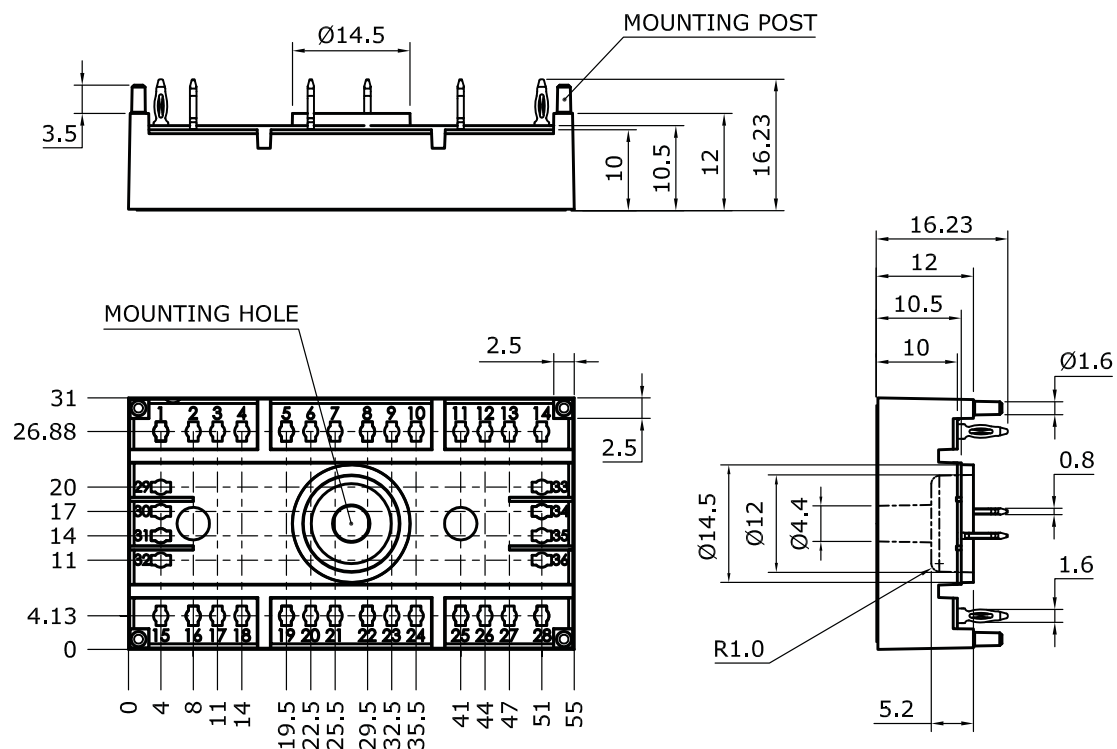


Fig. 6: Typ. IGBT gate charge characteristic



Dimensions: mm

Tolerance system: ISO 2768-m



Suggested drilled hole diameter for terminal pins in the circuit board:

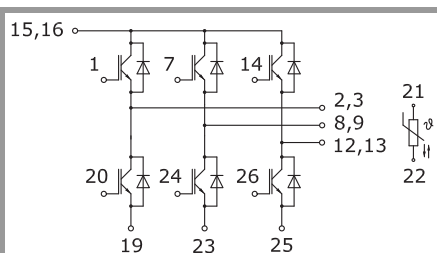
- minimum: 1.575 mm
- typical: 1.6 mm
- maximum: 1.625 mm

Suggested hole diameter for the mounting post in the circuit board:

- 2 mm

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This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

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