

MiniSKiiP®2

H-bridge inverter

SKiiP 28GH066V1

Features

- Trench IGBTs
- · Robust and soft freewheeling diode in CAL technology
- Highly reliable spring contacts for electrical connection
- UL recognised file no. E63532

Typical Applications*

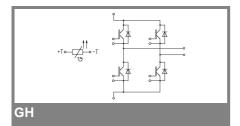
- Single-phase inverter up to 16 kVA
- Single-phase motor power 7.5 kW

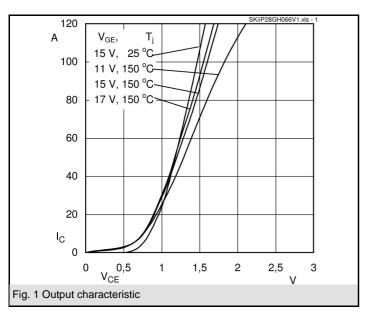
Remarks

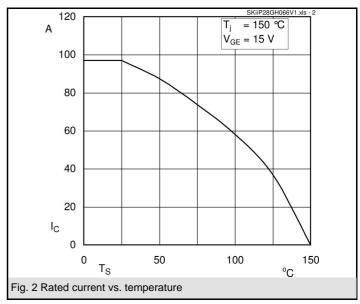
- Case temperature limited to T_C = 125°C
- · Product reliability results are valid for $T_i = 150$ °C
- SC data: $t_p \le 6 \mu s$; $V_{GE} \le 15 V$; T_j = 150°C, V_{CC} = 360 V V_{CEsat} , V_F = chip level value

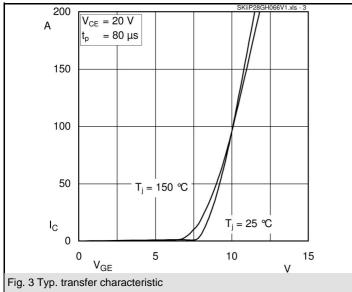
Absolute Maximum Ratings T _S = 25 °C, unless otherwise specifications								
Symbol	Conditions	Values	Units					
IGBT - Inverter								
V_{CES}		600	V					
I _C	$T_s = 25 (70) ^{\circ}C , T_j = 150 ^{\circ}C$	101 (68)	Α					
I _C	$T_s = 25 (70) ^{\circ}C , T_j = 175 ^{\circ}C$	112 (83)	Α					
I _{CRM}	t _p = 1 ms	200	Α					
V_{GES}		± 20	V					
T _j		-40+175	°C					
Diode - Inverter								
I _F	T _s = 25 (70) °C ,T _i = 150 °C	103 (67)	Α					
I _F	$T_s = 25 (70) ^{\circ}C, T_i = 175 ^{\circ}C$	112 (81)	Α					
I _{FRM}	$t_p = 1 \text{ ms}$	200	Α					
T _j		-40+175	°C					
I _{tRMS}	per power terminal (20 A / spring)	100	Α					
T _{stg}	$T_{op} \le T_{stg}$	-40+125	°C					
V _{isol}	AC, 1 min.	2500	V					

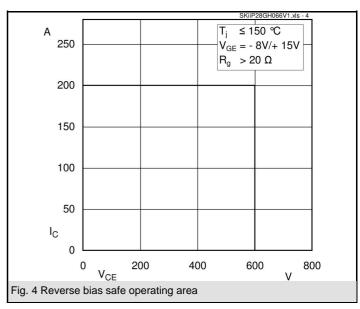
Characteristics		T _S = 25 °C, unless otherwise specified						
	Conditions	min.	typ.	max.	Units			
IGBT - Inverter								
V _{CEsat}	$I_{Cnom} = 100 \text{ A}, T_i = 25 (150) ^{\circ}\text{C}$	1,05	1,45 (1,65)	1,85 (2,05)	V			
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 2 \text{ mA}$		5,8		V			
V _{CE(TO)}	T _i = 25 (150) °C		0,9 (0,8)	1,1 (1)	V			
r _T	T _i = 25 (150) °C		5,5 (8,5)	7,5 (10,5)	mΩ			
C _{ies}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		6,15		nF			
C _{oes}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		1,12		nF			
C _{res}	$V_{CE} = 25 \text{ V}, V_{GE} = 0 \text{ V}, f = 1 \text{ MHz}$		0,9		nF			
R _{CC'+EE'}	spring contact-chip T _s = 25 (150)°C				mΩ			
$R_{th(j-s)}$	per IGBT		0,6		K/W			
t _{d(on)}	under following conditions		40		ns			
t _r `´	$V_{CC} = 300 \text{ V}, V_{GE} = -8\text{V}/+15\text{V}$		40		ns			
$t_{d(off)}$	I _{Cnom} = 100 A, T _j = 150 °C		410		ns			
t _f	$R_{Gon} = R_{Goff} = 8.2 \Omega$		50		ns			
$E_{on}(E_{off})$	inductive load		3,4 (3,5)		mJ			
Diode - Inverter								
$V_F = V_{EC}$	I _{Fnom} = 100 A ,T _j = 25 (150) °C		1,3 (1,3)	1,5 (1,5)	V			
V _(TO)	T _i = 25 (150) °C		0,9 (0,8)	1 (0,9)	V			
r _T	T _j = 25 (150) °C		4 (5)	5 (6)	mΩ			
$R_{th(j-s)}$	per diode		0,8		K/W			
I _{RRM}	under following conditions		102		Α			
Q _{rr}	I _{Fnom} = 100 A, V _R = 300 V		15,5		μC			
Err	V _{GE} = 0 V, T _i = 150 °C		3,3		mJ			
	di _F /dt = 2560 A/µs							
Temperature Sensor								
R _{ts}	3 %, T _r = 25 (100) °C		1000(1670)		Ω			
Mechanical Data								
m			65		g			
M_s	Mounting torque	2		2,5	Nm			

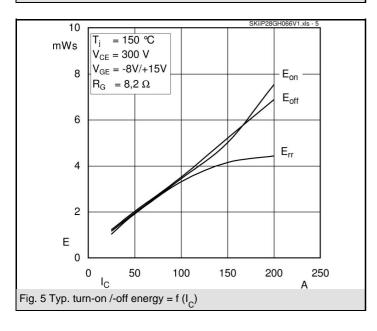


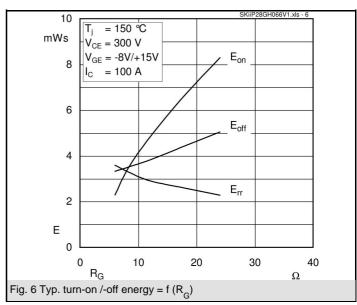


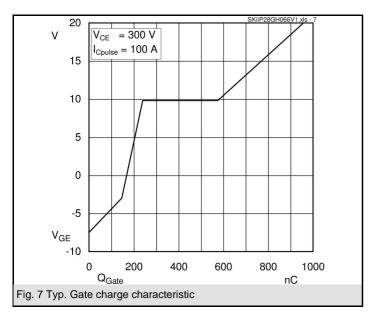


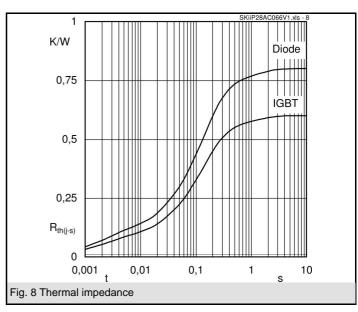


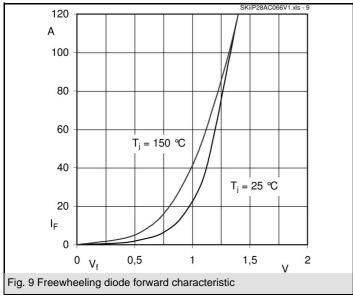


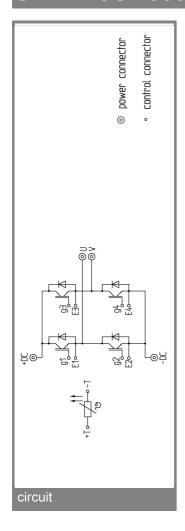


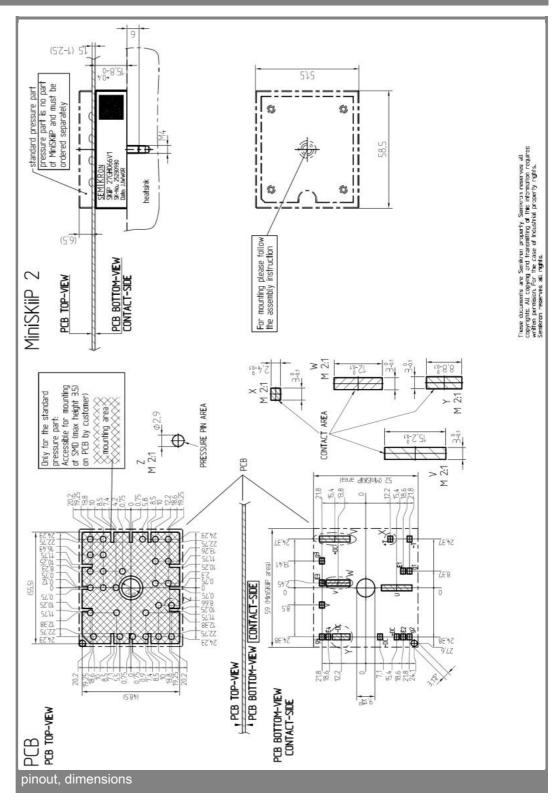












This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

^{*} 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.