IGD-8-326-E1F12-BH-FA

IGBT Module Stack

Three-phase inverter

SEMIKUBE - Size 3H

IGD-8-326-E1F12-BH-FA

Preliminary Data

Features

- Highly compact
- Integrated current, voltage and temperature sensors
- Easy maintenance
- Easy mounting and dismounting
- Very high Life-Time Expectancy
- Very low inductive DC bus

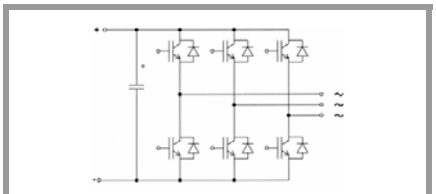
Typical Applications

- Industrial
- AC motor control
- UPS
- Solar inverter
- Oil and gas pumps

No. 08800930

Footnotes

Electrical parameters to be derated for T_{amb} > 40°C



B6CI

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
Electrical Data						
I_{rms}	Tamb=40°C, 3kHz, 650V_{dc}, 400V_{ac}, cos=0,85	no overload			1230	A
		110% overload, 60s every 10min		1200	1320	A
		150% overload, 60s every 10min		920	1390	A
V_{CES}					1200	V
f_{sw}	max. switching frequency				20	kHz
V_{DC}	DC voltage applied to the capacitor bank				750	V
V_{AC}	network voltage (line side), -20% / +15%				460	V
V_{isol}	50Hz / 1min				2500	V
P_{tot}	Tamb=40°C			10320		W
T_j	T_{vj} for continous operation		-40		125	°C
Capacitor Data						
C_{DC}	value 0...-15%			40.18		mF
C				Electrolyt		
LTE	expected lifetime calculated, forced air cooling		60			kHrs
	expected lifetime calculated, w/o forced air cooling		30			kHrs
Controller Interface Data						
V_S	supply voltage primary side		21.6	24	26.4	V
I_{SO}	supply current primary side (+ external current sensors)			270	1200	mA
V_{IT+}	Input threshold voltage (HIGH)				0,7*Vs	V
V_{IT-}	Input threshold voltage (LOW)		0.3*Vs			V
R_{IN}	Input resistance			10		kΩ
I_{TRIPSC}	Over current trip level			3600		A_{PEAK}
T_{tp}	Over temperature protection level			100		°C
Mechanical Data						
dv/dt_{AIR}	required airflow per fan		620			m^3/h
w	approx. total weight			110		kg
Size	Width x Depth x Height (with fan)		1122	752	544	mm
T_{stg}	w/o need of reforming the caps		-20		40	°C
T_{amb}			-20		55	°C
T_{hs}						°C
Alltitude	installation height w/o derating				1000	m
Protection				IP00		
Pollution	EN 50178			2		
Fan Data						
Fan	included in the stack (**NO**)					
Type	(SKF 16 O-230-01)					
V_{Fan}	Fan voltage			230		V
f_{FAN}	Fan frequency			50		Hz
I_{FAN}	Fan current			1.3		A
P_{FAN}	Fan power			300		W

PIN Array X1

PIN	Signal	Function	Specifications
X1:01	IF_PWR_VP	Power Supply	Supply voltage +24V_{DC} (±10%) IN
X1:02	IF_PWR_GND	IF_HB	
X1:03	IF_PWR_VP	Power Supply	Supply voltage +24V_{DC} (±10%) IN
X1:04	IF_PWR_GND	GND_for_IF_PWR_VP	
X1:05	IF_PWR_VP	Power Supply	Supply voltage +24V_{DC} (±10%) IN
X1:06	IF_PWR_GND	GND_for_IF_PWR_VP	
X1:07	IF_CMN_rsrvd	Reserved	
X1:08	IF_CMN_GND	GND for IF_CMN_nHALT, IF_CMNrsrvd	
X1:09	IF_CMN_nHALT	Status signal	Digital IF_PWR_VP logicLOW (dominant) = not ready to operateHIGH (recessive) = ready to operate
X1:10	IF_CMN_GPIO	General purpose IO	Inverted IF_CMN_nHALT signal Signal propagation time to IF_CMN_nHALT signal: 100µs (typ.)
X1:11	IF_CMN_ANLG0	Temperature analog out	Max. output current: 5mA Turns ratio: 100mV/°C Max. voltage range: +15V Nominal voltage range: 0…10V
X1:12	IF_CMN_AGND0	GND for IF_CMN_ANLG0	
X1:13	IF_CMN_ANLG1	U_{DC} analog out	Max. output current: 5mA Turns ratio: 10mV/V Max. voltage range: +15V Nominal voltage range: 0…10V
X1:14	IF_CMN_AGND1	GND for IF_CMN_ANLG1	
X1:15	IF_HB1_TOP	Switching signal input (HB1 TOP switch)	Digital IF_PWR_VP logic LOW = TOP switch off HIGH = TOP switch on
X1:16	IF_HB1_TOP	Switching signal input (HB1 BOT switch)	Digital IF_PWR_VP logic LOW = BOT switch off HIGH = BOT switch on
X1:17	IF_HB1_rsvrd	Reserved	
X1:18	IF_HB1_GND	GND for IF_HB1_TOP, IF_HB1_BOT, IF_HB1_rsrvd	
X1.19	IF_HB1_ANLG	I analog out HB1	Max. output current: 5mA Turns ratio: 3mV/A Max. voltage range: ±15V Nominal voltage range: -10…10V
X1:20	IF_HB1_AGND	GND for IF_HB1_ANLG	

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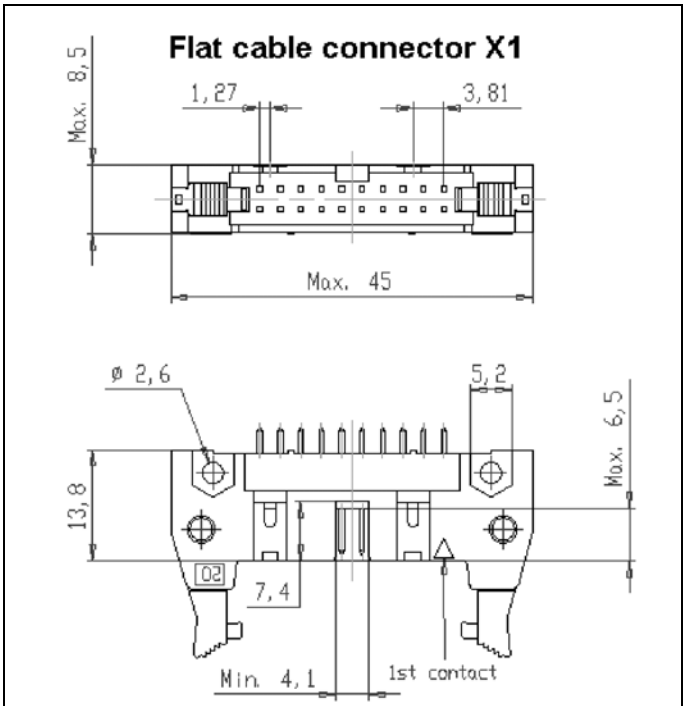

Connector X1 (Flat cable connector e.g. Harting)

Productinformation of suitable female connectors and distributor contact information is available at e.g. http://www.harting.com (part number 09 18 520 7 813 – female connector with strain relief clamp).

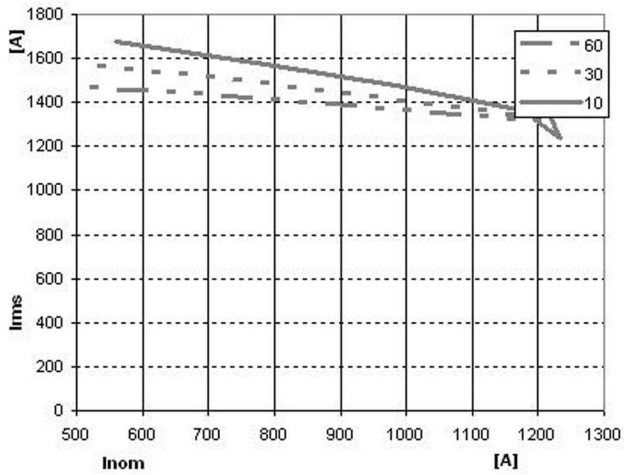

Fig. 1 Maximum overload current, T_{amb} = 40 °C

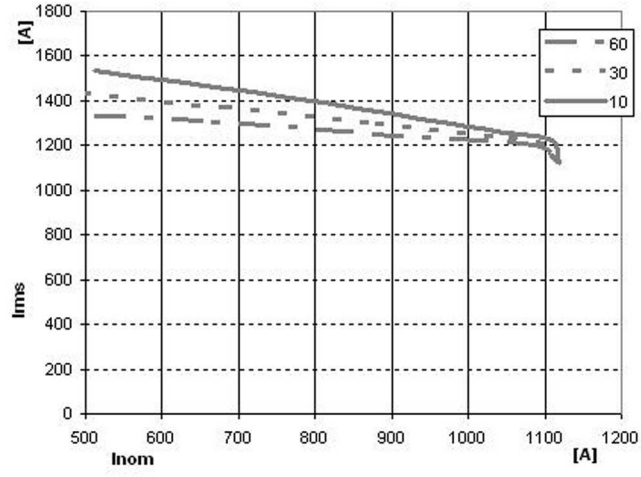

Fig. 2 Maximum overload current, T_{amb} = 50 °C

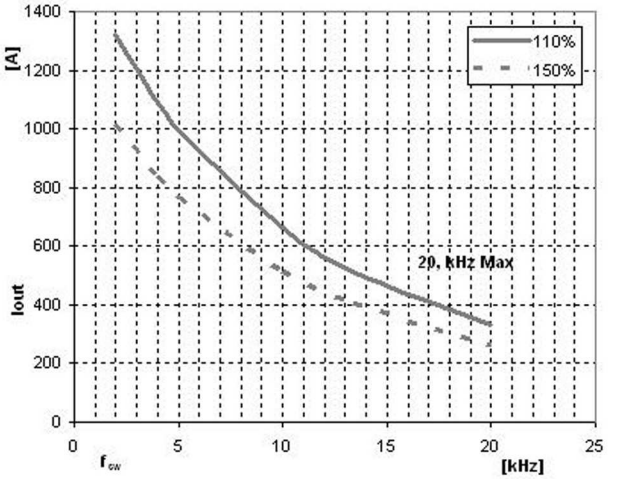

Fig. 3 Max permanent inverter curr. vs. f_{sw},T_{amb}=40 °C

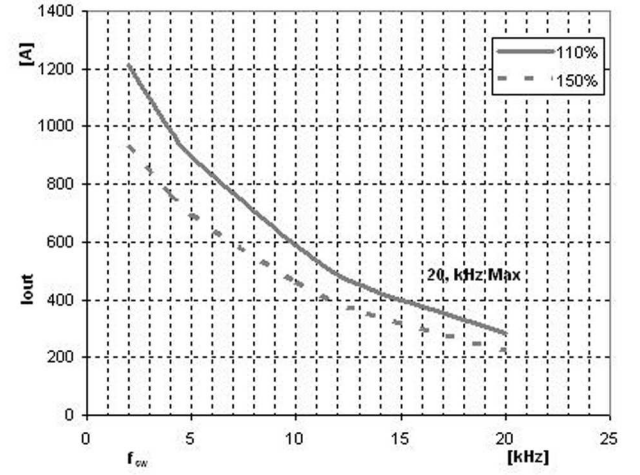

Fig. 4 Max. permanent inverter curr. vs. f_{sw}, T_{amb}=50 °C

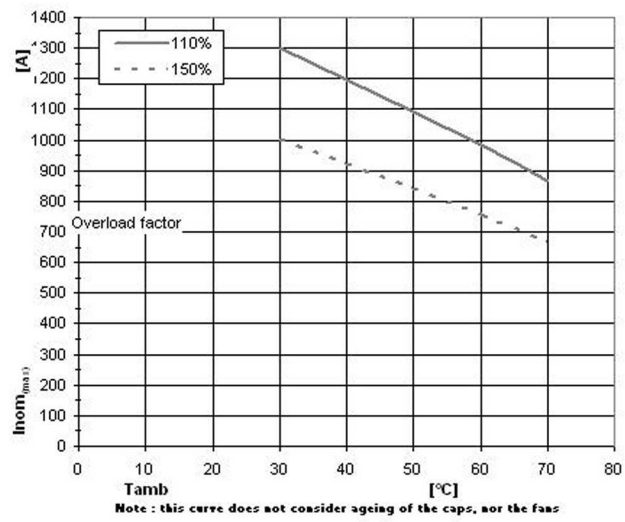

Fig. 5 Max. nominal curr. vs. ambient temperature

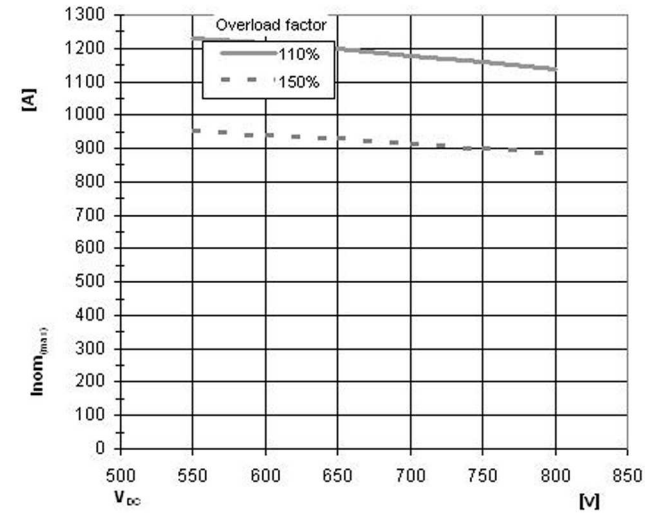

Fig. 6 Maximum nominal current vs. DC Link voltage

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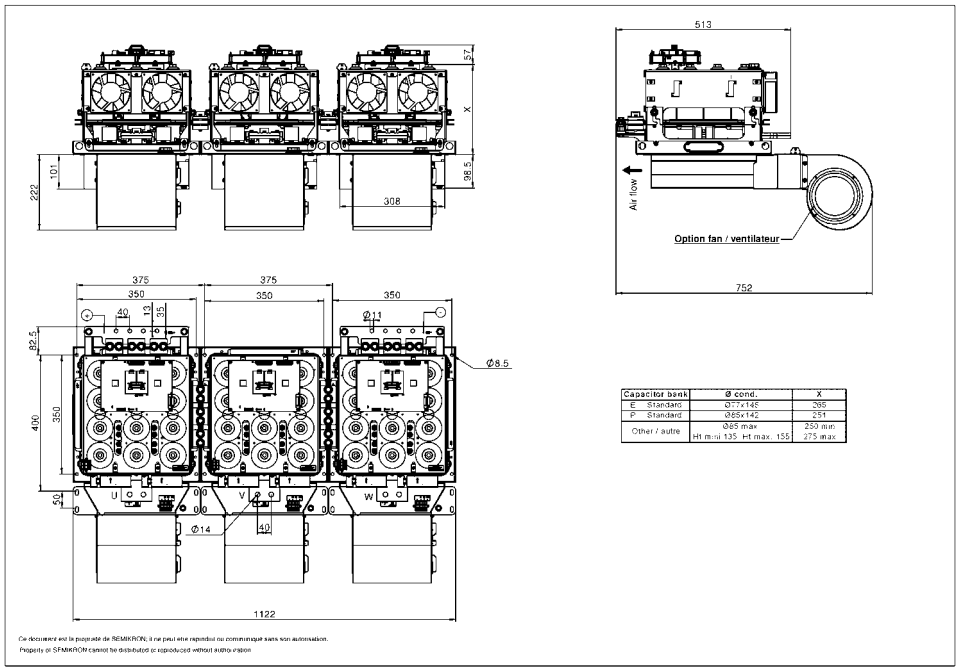

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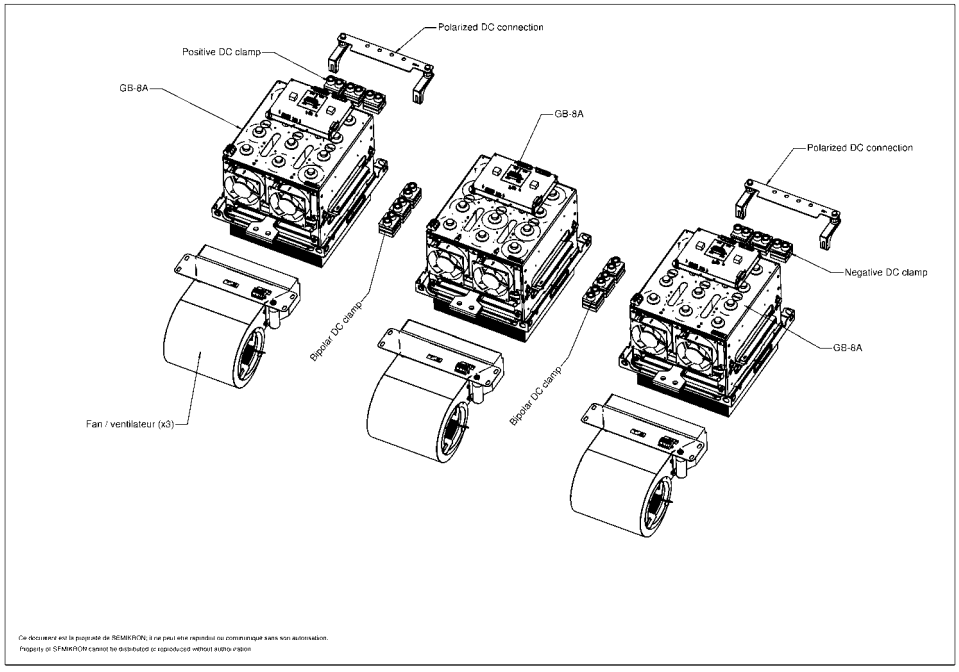

3D view of the SEMIKUBE Size '3'

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