

Preliminary data

Key data

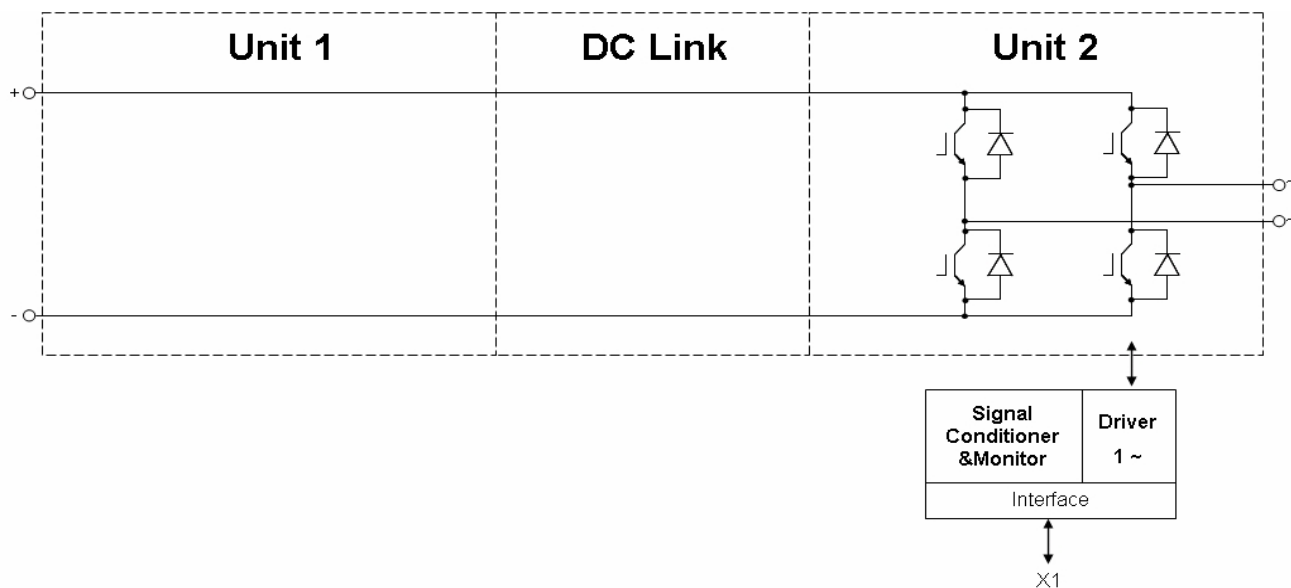
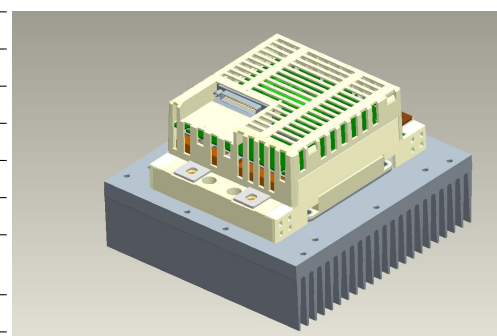
1x 325A AC at 690V AC, forced air (fan not implemented)

General information

Stacks for various inverter application. Semiconductors, heat sinks, drivers and sensors included. These are only technical data!

Please read carefully the complete documentation and maintain the proper design environment! Especially note the EMC environment and the controller's functionality.

Topology	1/2 B2I	
Application / Modulation	Inverter / Sine	
Load type	resistive, inductive	
Cooling	forced air (fan not implemented)	
Market	common industrial, drives, power supply	
Implemented sensors	current, temperature	
Semicond. (Unit 1)	none	
DC Link	none	
Semicond. (Unit 2)	IGBT	2x FF300R17KE3
Driver signals IGBT	electrical CMOS	
Standards	EN50178, UL94, prepared for UL508C	
Internal ID	28213	
Mechanical drawing number	38000028	
Electrical drawing number	2PS-C2-V	



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Technical Information

PrimeSTACK™

2PS06017E32G28213



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Notes

Overvoltage shutdown:
It must be realized by the customer.
Overvoltage and Overcurrent shutdown reaction time:
This parameter refers to the customers controller.

Electrical data

DC Link			min	typ	max	units
Voltage		V_{DC}		1100	1200	V

Unit 2 AC			min	typ	max	units
Voltage		V_{Unit2}		690		V_{RMS}
Continuous current	$V_{Unit2} = 690V_{RMS}$, $V_{DC} = 1100V$, $T_{inlet} = 40^{\circ}C$, $T_J \leq 125^{\circ}C$, $f_{Unit2} = 50Hz$, $f_{sw2} = 2000Hz$, $\cos(\phi) = 0,85$	I_{Unit2}			325	A_{RMS}
Continuous current overload cap.	$T_{inlet} = 40^{\circ}C$, for overload capability 150% for 60s			231		A_{RMS}
Short time current	$T_{inlet} = 40^{\circ}C$, 10s, every 180s, initial load = $283A_{RMS}$	I_{Unit2}			354	A_{RMS}
DC current	no rotating field, $T_{inlet} = 40^{\circ}C$	$I_{Unit2,DC}$			162,0	A_{av}
Overcurrent shutdown	within 15 μ s			930		A_{peak}
Switching frequency		f_{sw2}			20000	Hz
Power losses	$V_{Unit2} = 690V$, $V_{DC} = 1100V$, $T_{inlet} = 40^{\circ}C$, $T_J \leq 125^{\circ}C$, $f_{Unit2} = 50Hz$, $f_{sw2} = 2000Hz$, $\cos(\phi) = 0,85$, $I_{Unit2} = 325A_{RMS}$	P_{loss2}		3770		W
Power factor		$\cos(\phi)_{Unit2}$	-1,00		1,00	

General data			min	typ	max	units
Power losses (PCB)		$P_{loss,aux}$			40	W
EMC test	according to IEC61800-3 at named interfaces	power	V_{Burst}	2		kV
		control	V_{Burst}	1		kV
		aux (24V)	V_{Surge}	1		kV
Insulation management is designed for		V_{Line}		690		V_{RMS}
Insulation test voltage	according to EN50178, $f = 50Hz$, $t = 60s$	V_{isol}		2,5		kV_{RMS}

Controller interface data			min	typ	max	units
Auxiliary voltage		V_{aux}	18	24	30	V_{av}
Auxiliary power requirement	$V_{aux} = 24V_{av}$	P_{aux}	40			W
Driver and interface board	see separate technical information		DR240			
Driver core			EiceDRIVER 2ED300C17-S			
Digital input level	resistor to GND 10,0k Ω , capacitor to GND 1nF, high = on, min 15mA	V_{in}	0,0		15,0	V
Digital output level	open collector, low = ok, max 15mA	V_{out}	0,0		30,0	V
Analog current outputs Unit 2	load max 1mA; at 325A	$V_{ana,out}$	3,43	3,50	3,60	V
Analog temperature output	load max 1mA; at $T_{NTC} = 77^{\circ}C$ correspond to $T_J = 125^{\circ}C$	$V_{T,out}$	8,90	9,10	9,30	V
Overcurrent shutdown reaction time	after overcurrent message by PrimeSTACK™ interface				10	μ s

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Heat sink air cooled / Thermal data

			min	typ	max	units
Airflow	T _{Air} = 20°C, P _{Air} = 1013hPa, dry- and dust free, measured on side of heat sink. according to DIN 41882	$\Delta V/\Delta t_{Air}$	500			m ³ /h
Air pressure drop		Δp_{Air}		110		Pa
Cooling air inlet temperature	heat sink temperature > -25°C	T _{inlet}	-25		40	°C

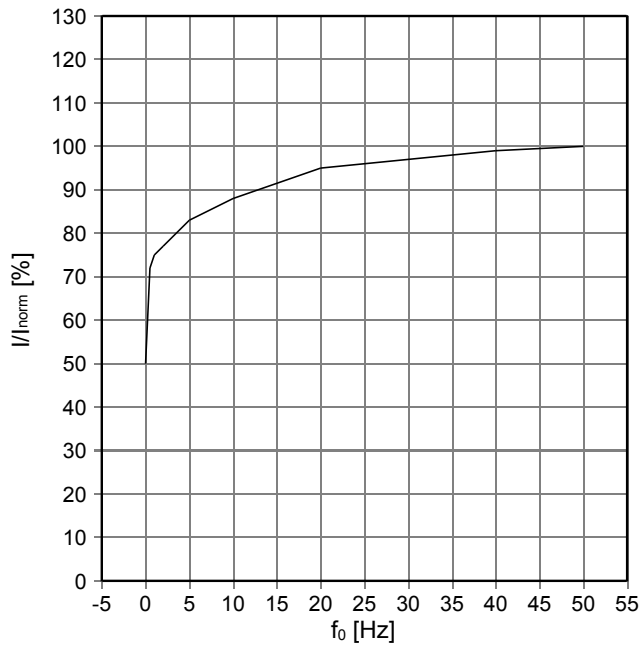
Environmental conditions

			min	typ	max	units
Storage temperature		T _{stor}	-40		85	°C
Ambient temperature		T _{amb}	-25		55	°C
Operating temperature	see chapter Heat sink air cooled / Thermal data					
Cooling air velocity (PCB)		V _{Air PCB}	0,3			m/s
Air pressure	standard atmosphere	p _{Air}	900		1100	hPa
Humidity	no condensation	Rel. F	5		85	%
Installation height			0		1000	m
Vibration	according to IEC60721				5	m/s ²
Shock	according to IEC60721				40	m/s ²
Protection degree			IP00			
Pollution degree			2			
Torque at DC Terminals		M _{DC}	6,0		10,0	Nm
Torque at AC Terminals		M _{AC}	16,0		20,0	Nm
Dimensions	width × depth × height		216	200	167	mm
Weight with heat sink	approximation			6,3		kg
Weight without heat sink	approximation			1,9		kg

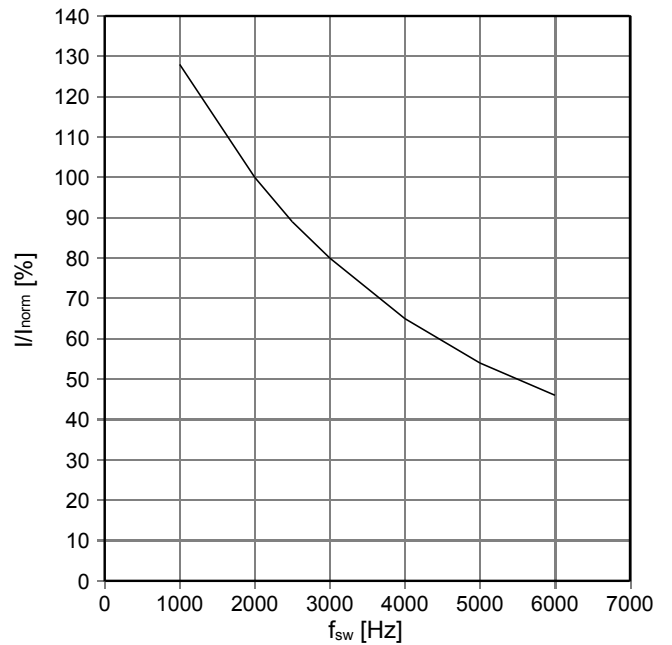
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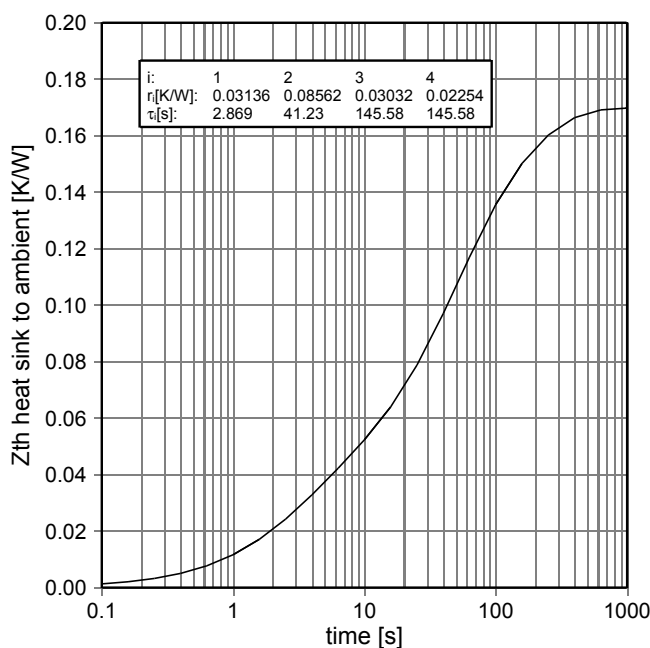
fo - derating curve IGBT (motor)
 cos(phi) = 0,85
 T_{cool medium} = 40°C



fsw - derating curve IGBT (motor)
 cos(phi) = 0,85
 T_{cool medium} = 40°C



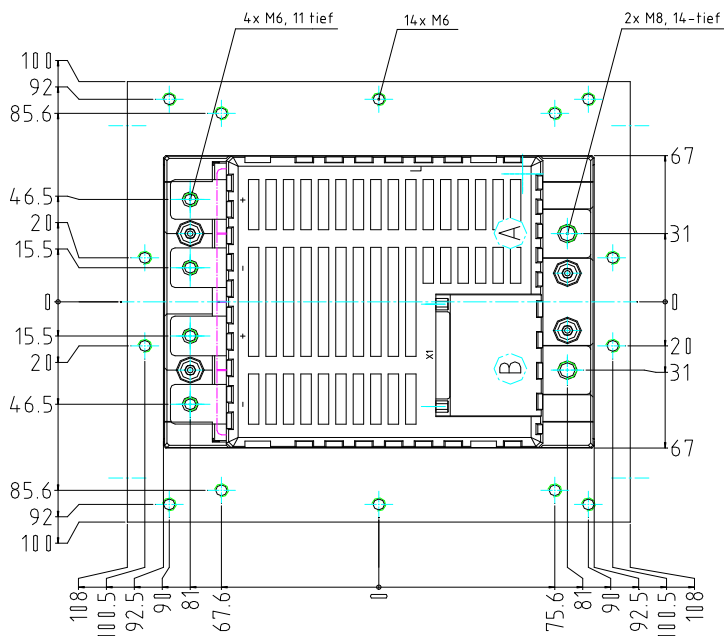
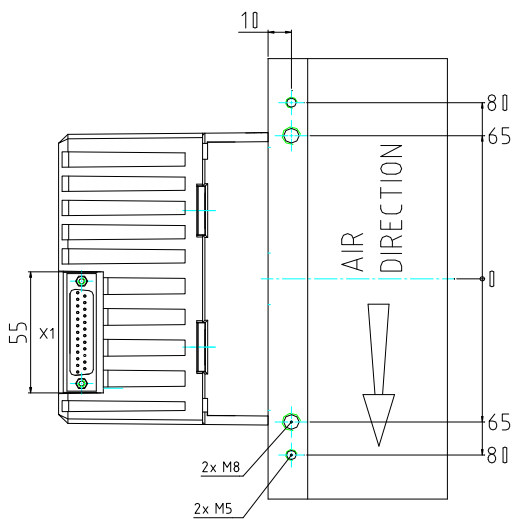
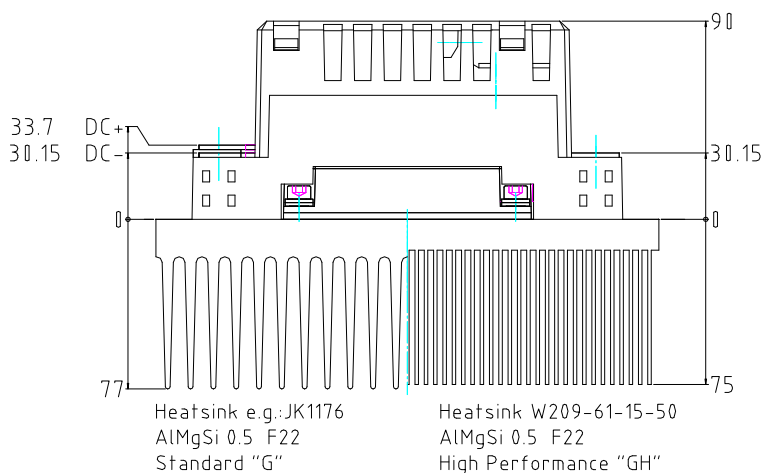
Transient thermal impedance per switch
 T_{cool medium} = 40°C



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Mechanical drawing

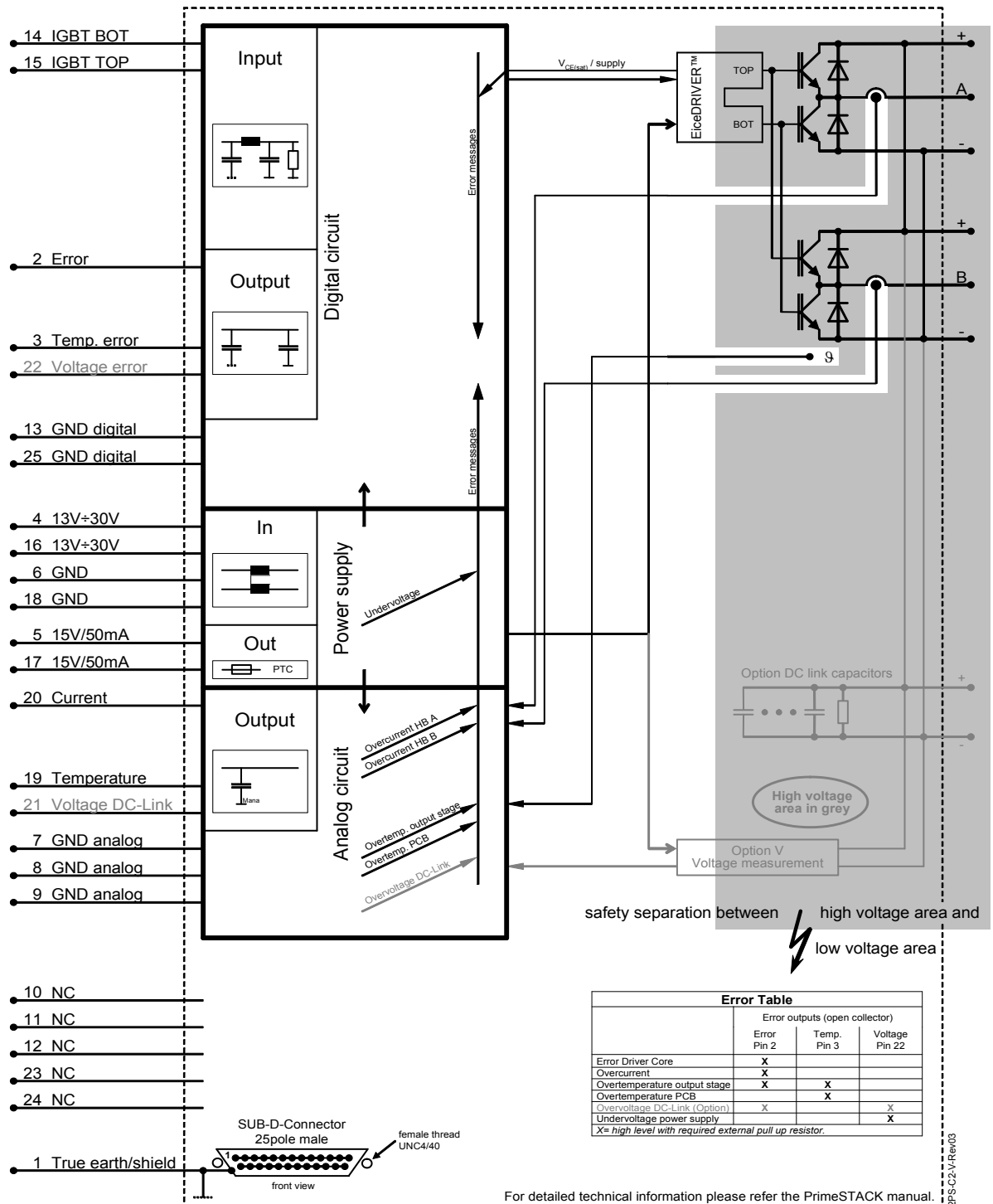
2PS...-2...
 4PS...-2...
 PrimeSTACK C2
 38000028



X1:
 2PS : SUB-D-Connector 25 pole, male
 4PS : SUB-D-Connector 25 pole, male

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Circuit diagram



For detailed technical information please refer the PrimeSTACK manual.

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Terms & Conditions of usage

The data contained in this product data sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application.

This product data sheet is describing the characteristics of this product for which a warranty is granted. Any such warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its characteristics.

Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of our product, please contact the sales office, which is responsible for you (see www.infineon.com, sales&contact). For those that are specifically interested we may provide application notes.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

Should you intend to use the Product in aviation applications, in health or live endangering or life support applications, please notify. Please note, that for any such applications we urgently recommend

- to perform joint Risk and Quality Assessments;
- the conclusion of Quality Agreements;
- to establish joint measures of an ongoing product survey, and that we may make delivery depended on the realization of any such measures.

If and to the extent necessary, please forward equivalent notices to your customers.

Changes of this product data sheet are reserved.

Safety Instructions

Prior to installation and operation, all safety notices and warnings and all warning signs attached to the equipment have to be carefully read. Make sure that all warning signs remain in a legible condition and that missing or damaged signs are replaced. To installation and operation, all safety notices and warnings and all warning signs attached to the equipment have to be carefully read. Make sure that all warning signs remain in a legible condition and that missing or damaged signs are replaced.

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