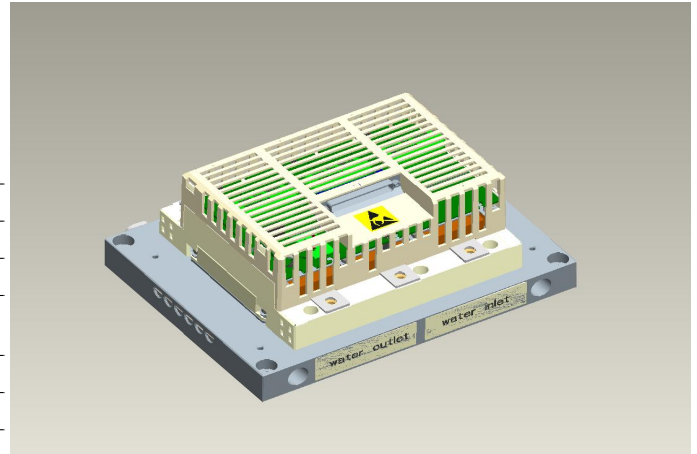


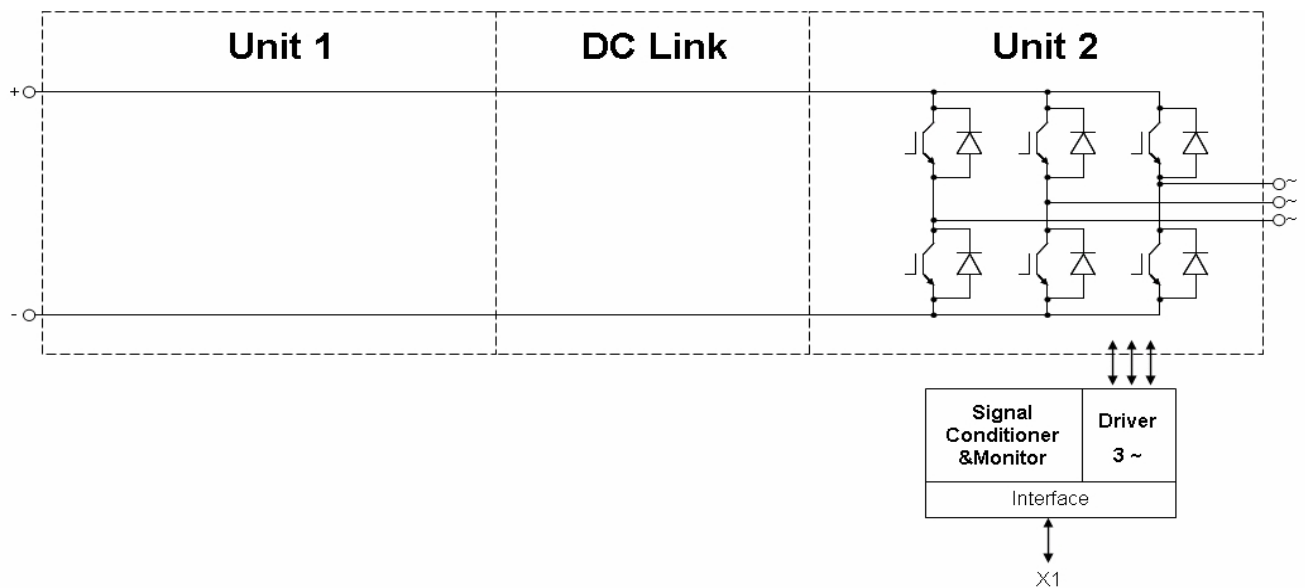
General information

IGBT Stack for typical voltages of up to 500 V_{RMS}
Rated output current 300 A_{RMS}

- High power converter
- Solar power
- Motor drives
- 62mm power module



Topology	B6I
Application	Inverter
Load type	Resistive, inductive
Semiconductor (Inverter Section)	3x FF450R12KE4
Heatsink	Water cooled
Implemented sensors	Current, voltage, temperature
Driver signals IGBT	Electrical
Design standards	UL 94, prepared for UL 508C
Sales - name	6PS04512E43W39693
SP - No.	SP001129256



prepared by: OW	date of publication: 2013-08-05
approved by: AR	revision: 2.0

Technical Information

PrimeSTACK™

6PS04512E43W39693



Preliminary data

Characteristic values

DC Link

			min.	typ.	max.	
Rated voltage		V_{DC}		650		V

Notes

The voltage sensor VM110 is only used for measurement. It is realized no over-voltage shutdown.

Inverter Section

			min.	typ.	max.	
Rated continuous current	$V_{DC} = 800\text{ V}$, $V_{AC} = 500\text{ V}_{RMS}$, $\cos(\varphi) = 0.85$, $f_{AC\ sine} = 5\text{ Hz}$, $f_{sw} = 2500\text{ Hz}$, $T_{inlet} = 40\text{ °C}$, $T_j \leq 125\text{ °C}$	I_{AC}			300	A_{RMS}
Continuous current at low frequency	$V_{DC} = 800\text{ V}$, $V_{AC} = 500\text{ V}_{RMS}$, $f_{AC\ sine} = 0\text{ Hz}$, $f_{sw} = 2500\text{ Hz}$, $T_{inlet} = 40\text{ °C}$, $T_j \leq 125\text{ °C}$	$I_{AC\ low}$			220	A_{RMS}
Rated continuous current for 150% overload capability	$I_{AC\ 150\%} = 330\text{ A}_{RMS}$, $t_{on\ over} = 60\text{ s}$, $t_{recovery} = 600\text{ s}$, $T_j \leq 125\text{ °C}$	$I_{AC\ over1}$			220	A_{RMS}
Over current shutdown	within 15 μs	$I_{AC\ OC}$		625		A_{peak}
Power losses	$I_{AC} = 500\text{ A}$, $V_{DC} = 800\text{ V}$, $\cos(\varphi) = 0.85$, $f_{AC\ sine} = 5\text{ Hz}$, $f_{sw} = 2500\text{ Hz}$, $T_{inlet} = 40\text{ °C}$, $T_j \leq 125\text{ °C}$	P_{loss}		2400		W

Controller interface

Driver and interface board	ref. to separate Application Note		DR210			
			min.	typ.	max.	
Auxiliary voltage		V_{aux}	18	24	30	V
Auxiliary power requirement	$V_{aux} = 24\text{ V}$	P_{aux}			40	W
Digital input level	resistor to GND 10 k Ω , capacitor to GND 1 nF, logic high = on	$V_{in\ low}$	0		1.5	V
		$V_{in\ high}$	11		15	V
Digital output level	open collector, logic low = no fault, max. 15 mA	$V_{out\ low}$	0		1.5	V
		$V_{out\ high}$		15		V
Analog current sensor output inverter section	load max 5 mA, @ 300 A_{RMS}	$V_{IU\ ana2}$ $V_{IV\ ana2}$ $V_{IW\ ana2}$	4.7	4.9	5	V
Analog DC link voltage sensor output	load max 5 mA, @ 900 V	$V_{DC\ ana}$	6.4	6.5	6.6	V
Analog temperature sensor output unit 1 (NTC)	load max 5 mA, corresponds to $T_j = 125\text{ °C}$ at rated conditions	$V_{\Theta\ NTC1}$		4.9		V
Analog temperature sensor output inverter section (NTC)	load max 5 mA, @ $T_{NTC} = 82\text{ °C}$	$V_{\Theta\ NTC2}$		10		V

Notes

Over temperature shut down must be realized by customer.

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approved by: AR	revision: 2.0