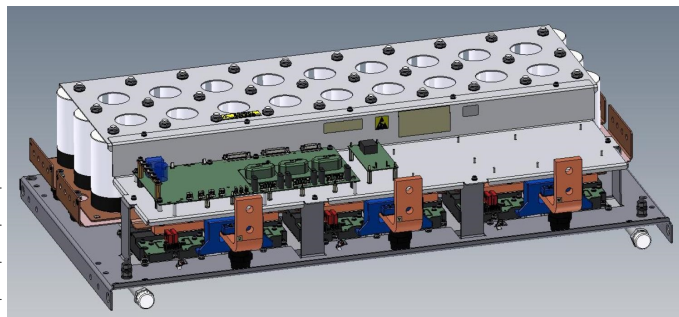


General information

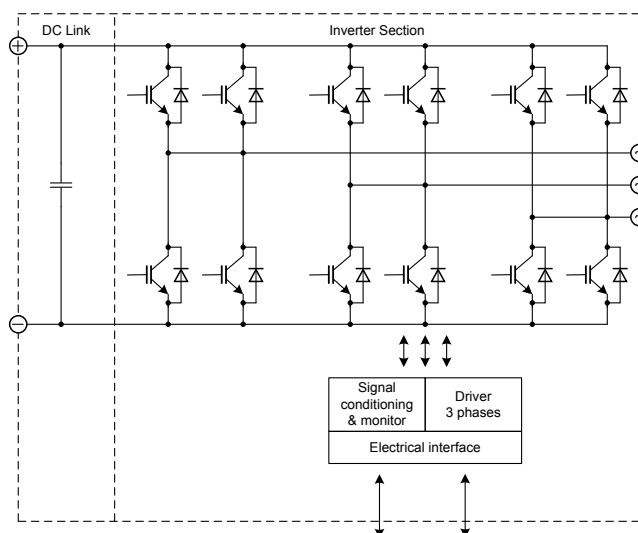
**IGBT Stack for typical voltages up to 690 V_{RMS}
Rated output current 1175_{RMS}**

- High power converter
- Wind power
- Motor drives

- IHM module with IGBT4
- AlSiC baseplate



Topology	B6I
Application	Inverter
Load type	Resistive, inductive
Semiconductor (Inverter Section)	6x FF1200R17KP4_B2
DC Link	12 mF
Heatsink	Water cooled
Implemented sensors	Current, voltage, temperature
Driver signals IGBT	Electrical
Sales - name	6MS24017P43W41646
SP - No.	SP001420674



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Preliminary data

Absolute maximum rated values

Collector-emitter voltage	IGBT; $T_{vj} = 25^{\circ}\text{C}$	V_{CES}	1700	V
Repetitive peak reverse voltage	Diode; $T_{vj} = 25^{\circ}\text{C}$	V_{RRM}	1700	V
DC link voltage	No switching; $t=5\text{s}$, once a day	V_{DC}	1450	V
Insulation management	according to installation height of 2000 m	V_{line}	690	V_{RMS}
Insulation test voltage	according to EN 50178, $f = 50\text{ Hz}$, $t = 5\text{ s}$	V_{ISOL}	2.5	kV_{RMS}
Junction temperature	under switching conditions	T_{vjop}	150	$^{\circ}\text{C}$
Storage temperature min.		T_{stor}	-40	$^{\circ}\text{C}$
Storage temperature max.		T_{stor}	65	$^{\circ}\text{C}$
Operational ambient temperature min.		T_{amb}	-25	$^{\circ}\text{C}$
Operational ambient temperature max.		T_{amb}	55	$^{\circ}\text{C}$
Auxiliary voltage		V_{aux}	30	V
Switching frequency inverter section		f_{sw2}	3.5	kHz

Notes

Further maximum ratings are specified in the following dedicated sections

Characteristic values

DC Link

			min.	typ.	max.	
Rated voltage	Continuous mode	V_{DC}		1050		V
Over voltage shutdown	within 150 μs			1300		V
Capacitor	1 s, 30 p, rated tol. $\pm 10\%$	C_{DC}		12		mF
		type	Foil			
Maximum ripple current	per device, $T_{amb} = 55^{\circ}\text{C}$	I_{ripple}			49	A_{RMS}
Balance or discharge resistor	per DC link unit	R_b	6			k Ω

Notes

Operation above 1100 V subject to reduced operating time according to EN 61071
Reduce short circuit protection over 1200V

Inverter Section

			min.	typ.	max.	
Rated continuous current	$V_{DC} = 1050\text{ V}$, $V_{AC} = 690\text{ V}_{RMS}$, $\cos(\varphi) = 0.9$, $f_{AC\ sine} = 50\text{ Hz}$, $f_{sw} = 2600\text{ Hz}$, $T_{inlet} = 50^{\circ}\text{C}$	I_{AC}		1175		A_{RMS}
Rated continuous current for 150% overload capability	$I_{AC\ 150\%} = 1100\text{ A}_{RMS}$, $t_{on\ over} = 0.01\text{ s}$, $t_{recovery} = 135\text{ s}$	$I_{AC\ over1}$			1767	A_{RMS}
Over current shutdown	within 15 μs	$I_{AC\ OC}$		2500		A_{peak}
Power losses	$I_{AC} = 1175\text{ A}$, $V_{DC} = 1050\text{ V}$, $V_{AC} = 690\text{ V}_{RMS}$, $\cos(\varphi) = 0.9$, $f_{AC\ sine} = 50\text{ Hz}$, $f_{sw} = 2600\text{ Hz}$, $T_{inlet} = 50^{\circ}\text{C}$	P_{loss}		14500		W

Inverter Section (specific condition)

			min.	typ.	max.	
Specific continuous current	$V_{DC} = 1050\text{ V}$, $V_{AC} = 690\text{ V}_{RMS}$, $\cos(\varphi) = -0.9$, $f_{AC\ sine} = 12\text{ Hz}$, $f_{sw} = 2100\text{ Hz}$, $T_{inlet} = 50^{\circ}\text{C}$, $T_j \leq 150^{\circ}\text{C}$	I_{ACsp}		1400		A_{RMS}

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