flow PACK 0B — Output Inverter Application — 1200 V / 15 A

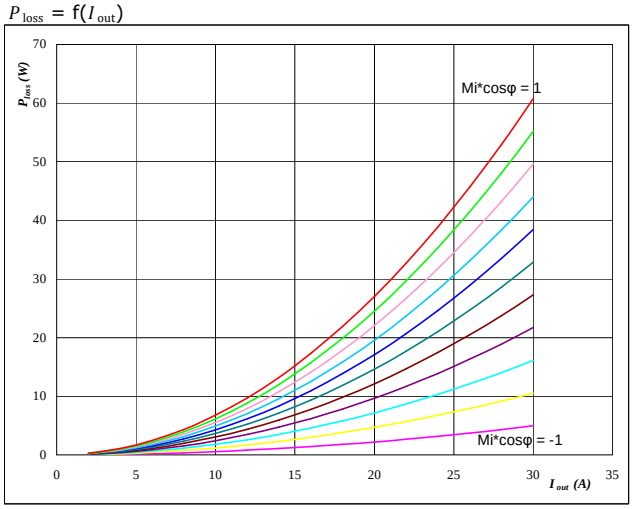
General conditions

3phase SPWM		
V_{GEon}	=	15 V
V_{GEoff}	=	-15 V
R_{gon}	=	32 Ω
R_{goff}	=	32 Ω

figure 1. **IGBT**

Typical average static loss as a function of output current

P_{loss} = f(I_{out})



At

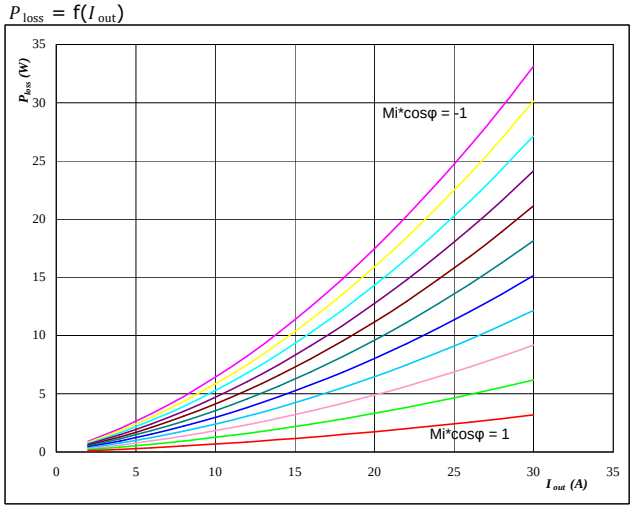
T_j = 150 °C

Mi*cosφ from -1 to 1 in steps of 0,2

figure 2. **FWD**

Typical average static loss as a function of output current

P_{loss} = f(I_{out})



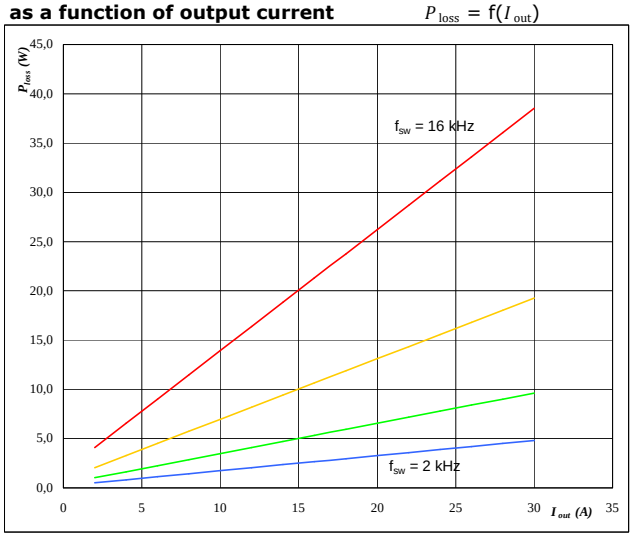
At

T_j = 150 °C

Mi*cosφ from -1 to 1 in steps of 0,2

figure 3. **IGBT**

Typical average switching loss as a function of output current P_{loss} = f(I_{out})



At

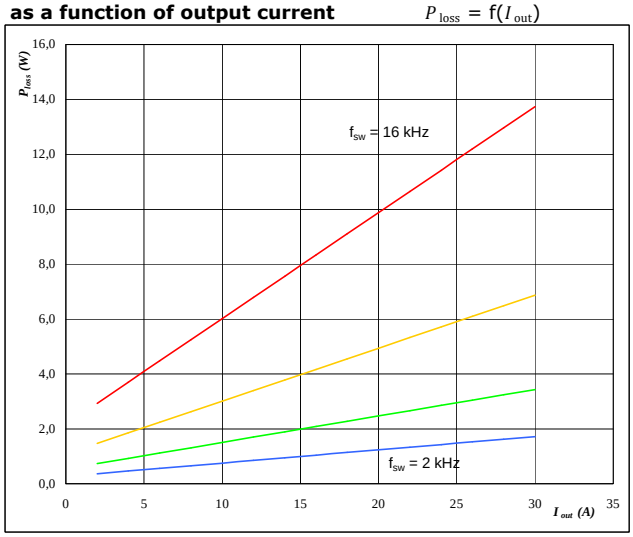
T_j = 150 °C

DC-link = 600 V

f_{sw} from 2 kHz to 16 kHz in steps of factor 2

figure 4. **FWD**

Typical average switching loss as a function of output current P_{loss} = f(I_{out})



At

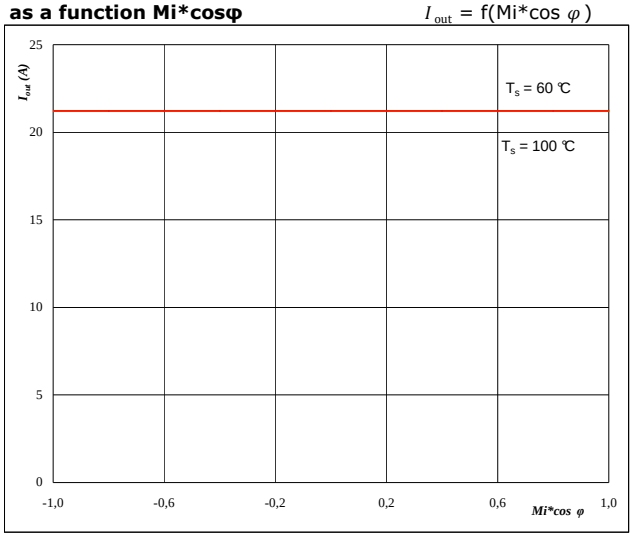
T_j = 150 °C

DC-link = 600 V

f_{sw} from 2 kHz to 16 kHz in steps of factor 2

figure 5. **Phase**

Typical available 50Hz output current as a function Mi*cosφ $I_{out} = f(Mi*\cos\varphi)$

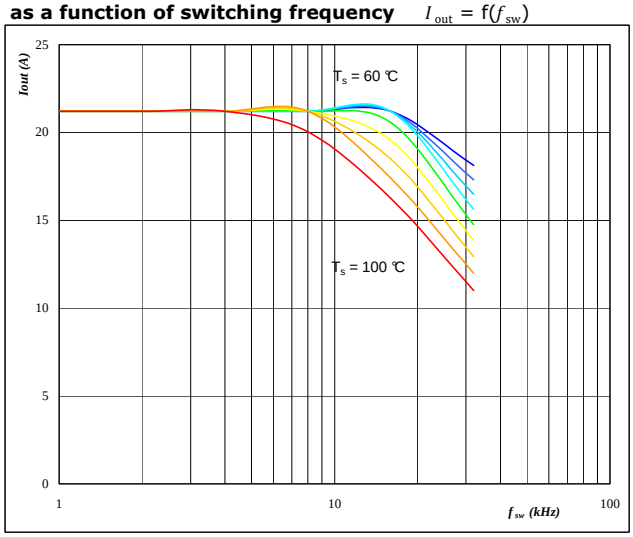


At

T_j =	150	°C
DC-link =	600	V
f_{sw} =	4	kHz
T_s from	60 °C to 100 °C in steps of 5 °C	

figure 6. **Phase**

Typical available 50Hz output current as a function of switching frequency $I_{out} = f(f_{sw})$

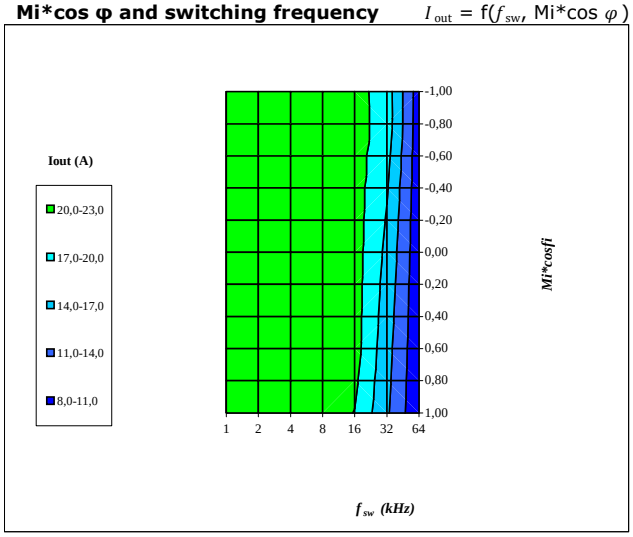


At

T_j =	150	°C
DC-link =	600	V
Mi*cos φ =	0,8	
T_s from	60 °C to 100 °C in steps of 5 °C	

figure 7. **Phase**

Typical available 50Hz output current as a function of Mi*cos φ and switching frequency $I_{out} = f(f_{sw}, Mi*\cos\varphi)$

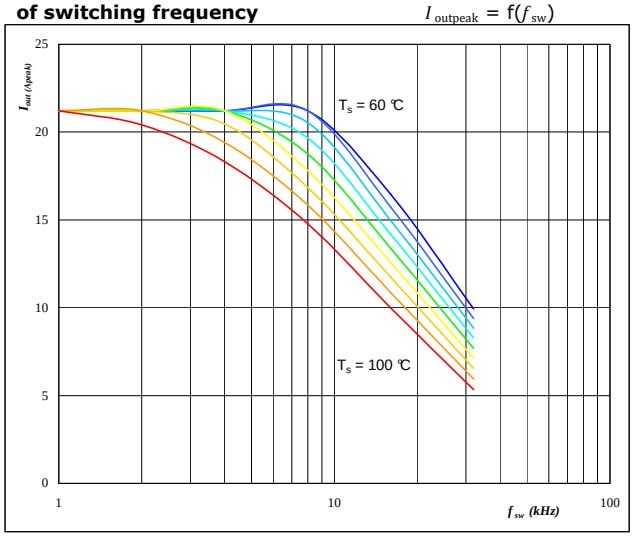


At

T_j =	150	°C
DC-link =	600	V
T_s =	80	°C

figure 8. **Phase**

Typical available 0Hz output current as a function of switching frequency $I_{outpeak} = f(f_{sw})$

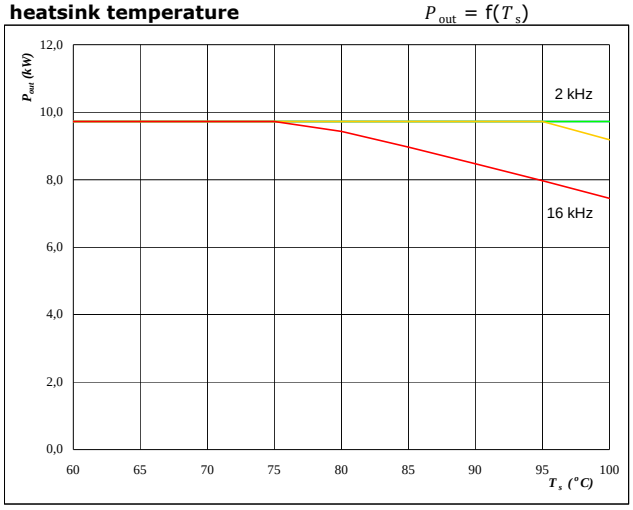


At

T_j =	150	°C
DC-link =	600	V
T_s from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	

figure 9. **Inverter**

Typical available peak output power as a function of heatsink temperature $P_{out} = f(T_s)$

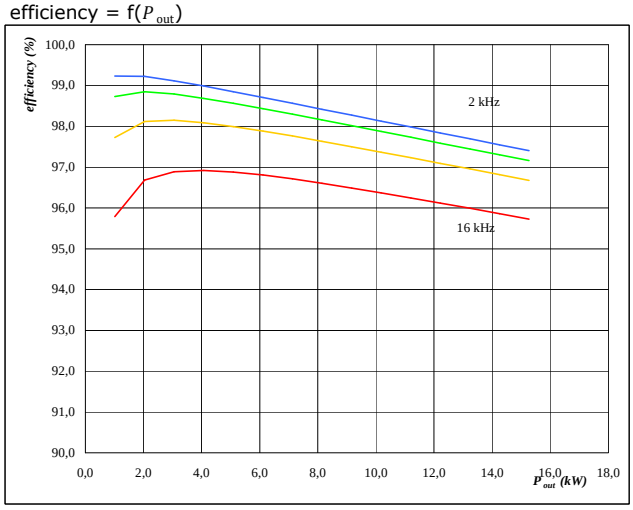


At

T_j =	150	°C
DC-link =	600	V
Mi =	1	
cos φ =	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

figure 10. **Inverter**

Typical efficiency as a function of output power efficiency = f(P_{out})

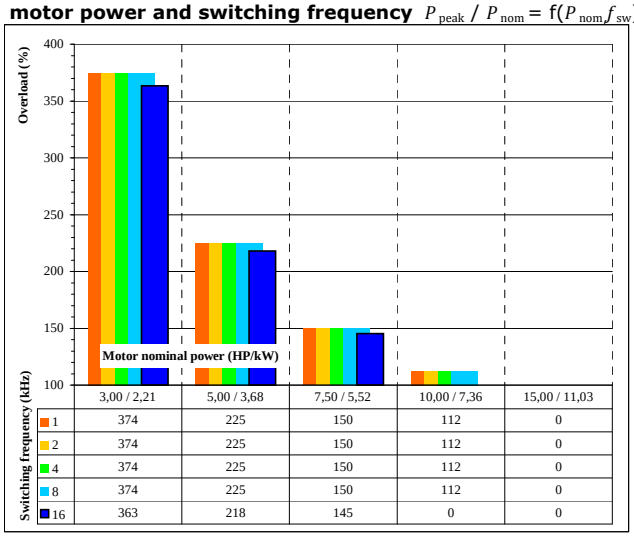


At

T_j =	150	°C
DC-link =	600	V
Mi =	1	
cos φ =	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

figure 11. **Inverter**

Typical available overload factor as a function of motor power and switching frequency $P_{peak} / P_{nom} = f(P_{nom} f_{sw})$



Switching frequency (kHz)	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03
1	374	225	150	112	0
2	374	225	150	112	0
4	374	225	150	112	0
8	374	225	150	112	0
16	363	218	145	0	0

At

T_j =	150	°C
DC-link =	600	V
Mi =	1	
cos φ=	0,8	
f_{sw} from	1 kHz to 16 kHz in steps of factor 2	
T_s =	80	°C
Motor eff =	0,85	