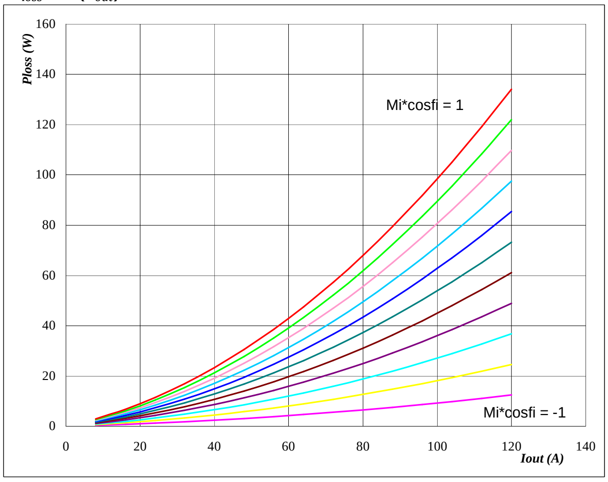
General conditions

3phase SPWM		
V_{GEon}	=	15 V
V_{GEoff}	=	-15 V
R_{gon}	=	2 Ω
R_{goff}	=	2 Ω

Figure 1 IGBT

Typical average static loss as a function of output current

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



At

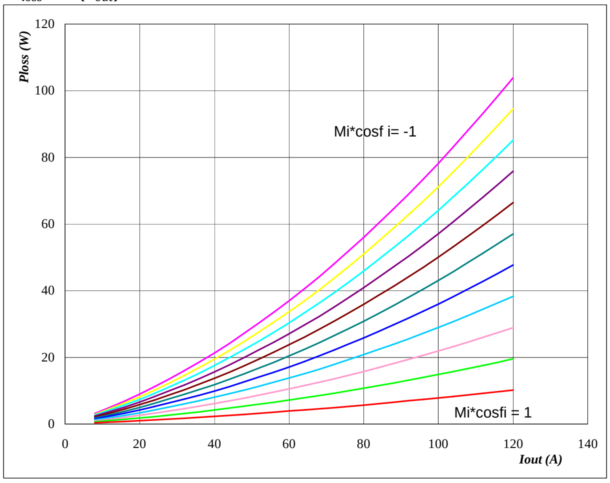
T_j = 150 °C

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

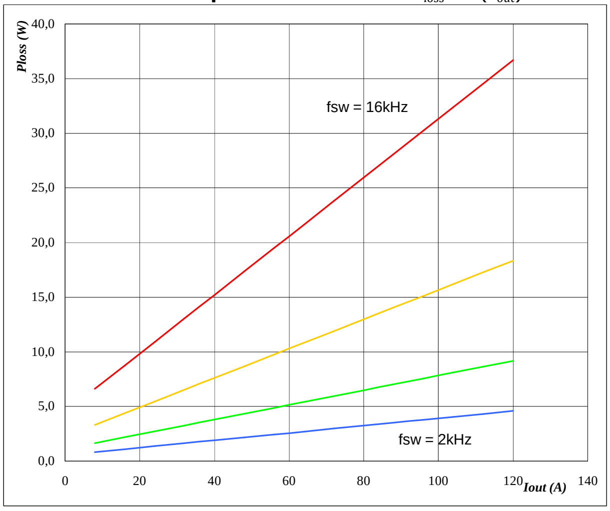
T_j = 150 °C

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

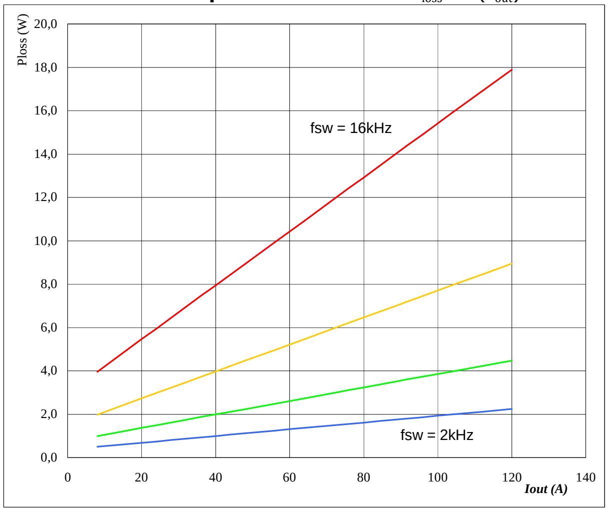
DC link = 320 V

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

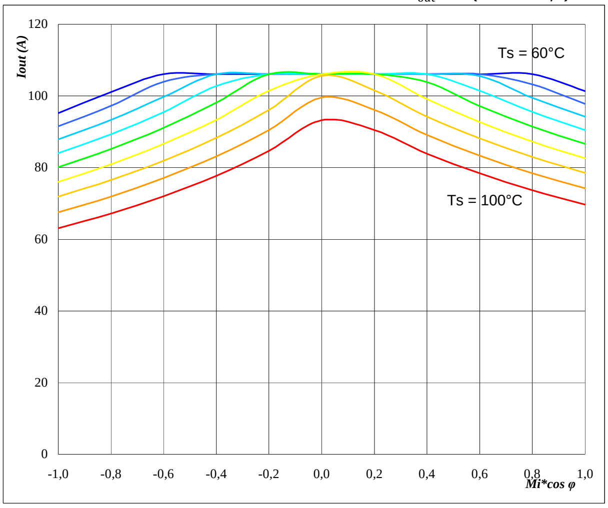
T_j = 150 °C

DC link = 320 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*cos φ I_{out} = f(Mi*cos φ)

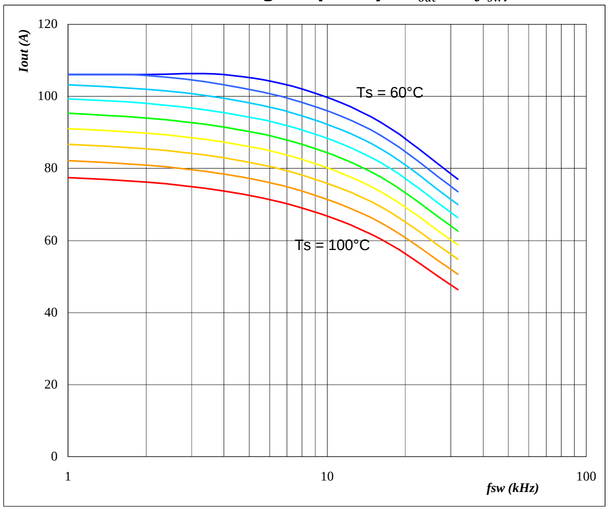


At

T_j =	150	°C
DC link =	320	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})

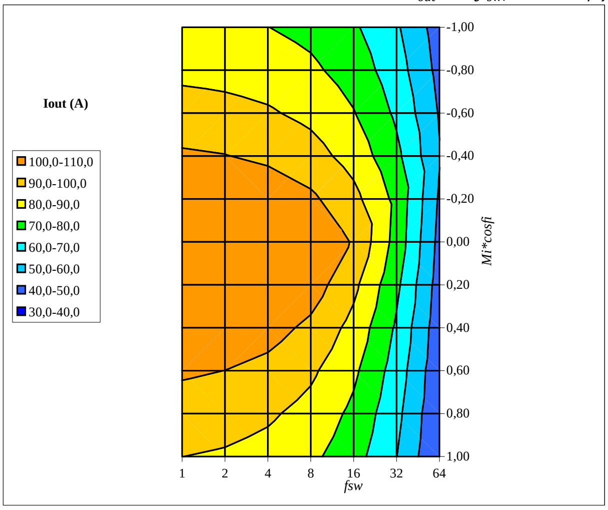


At

T_j =	150	°C
DC link =	320	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 φ)

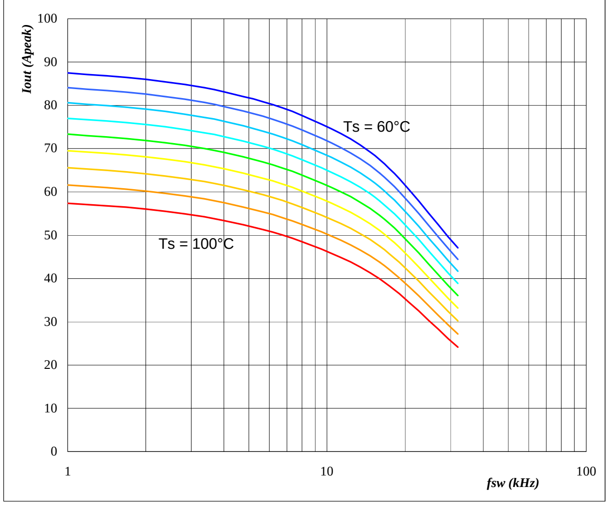


At

T_j =	150	°C
DC link =	320	V
T_s =	80	°C

Figure 8 Phase

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

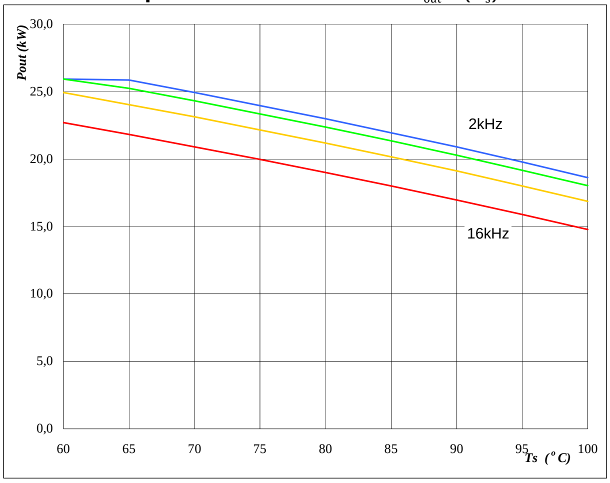


At

T_j =	150	°C
DC link =	320	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 $P_{out}=f(T_s)$

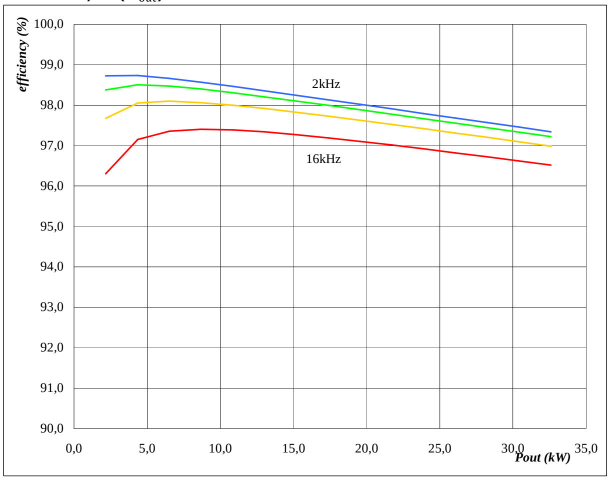


At

T_j =	150	°C
DC link =	320	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})

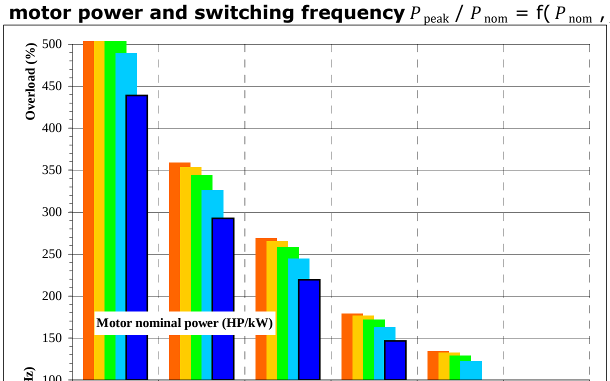


At

T_j =	150	°C
DC link =	320	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)	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03	20,00 / 14,71	25,00 / 18,39
1	538	359	269	179	135	0
2	531	354	265	177	133	0
4	517	344	258	172	129	0
8	489	326	245	163	122	0
16	439	293	220	146	0	0

At

T_j =	150	°C
DC link =	320	V
Mi =	1	
cos φ =	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
T_s =	80	°C
Motor eff =	0,85	