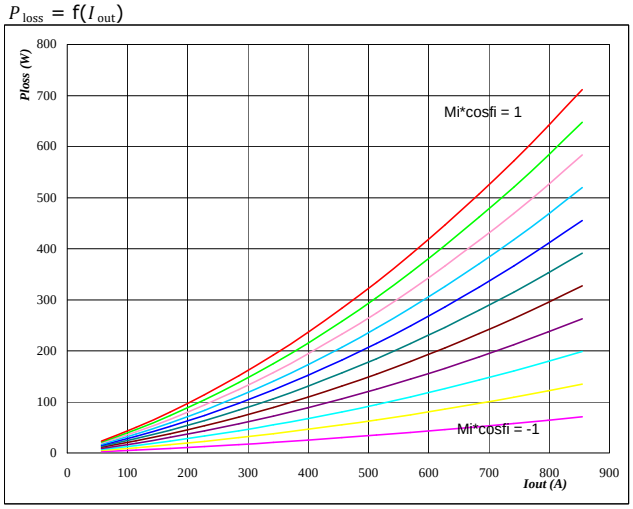
General conditions

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

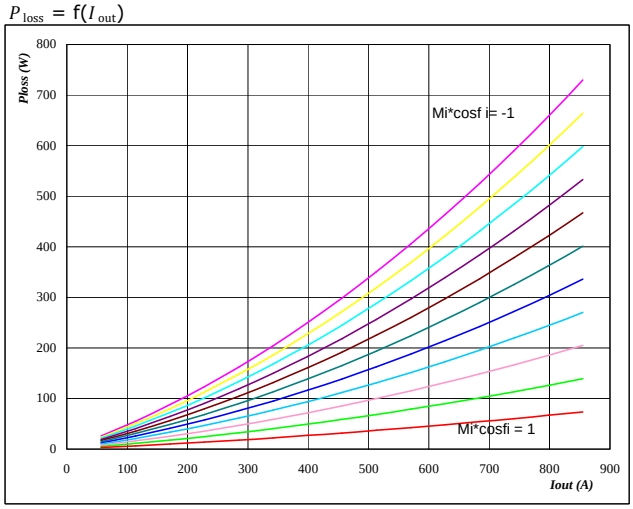
T_j = 125 °C

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})



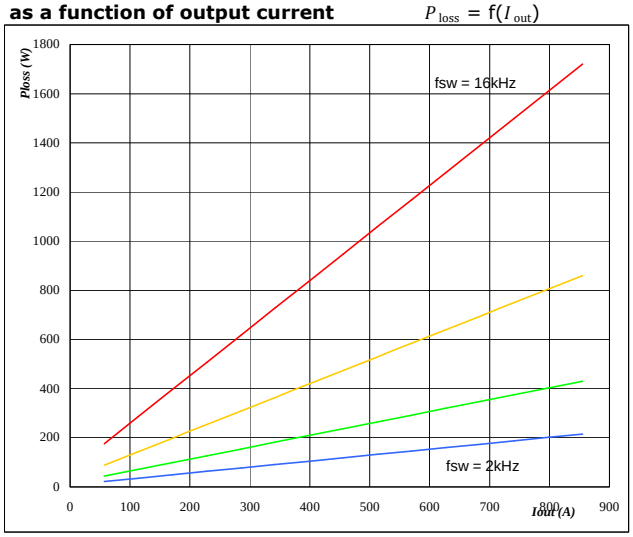
At

T_j = 125 °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

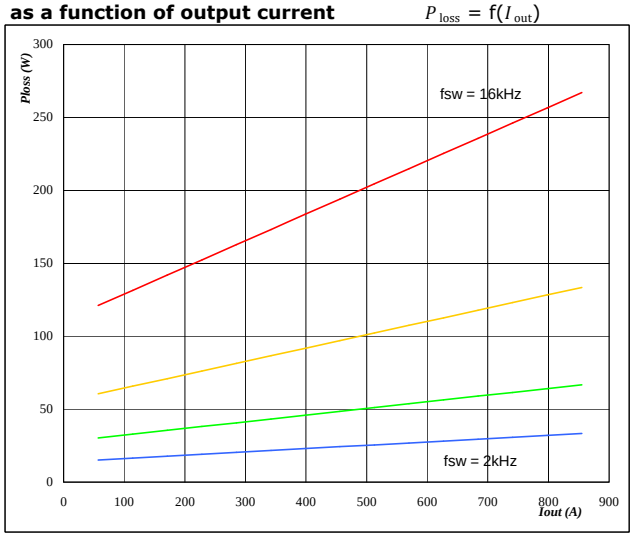
T_j = 125 °C

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

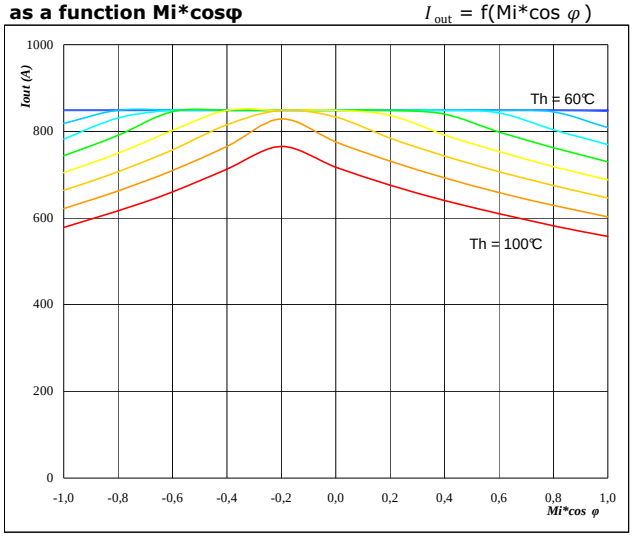
T_j = 125 °C

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 $I_{out} = f(Mi*\cos\varphi)$

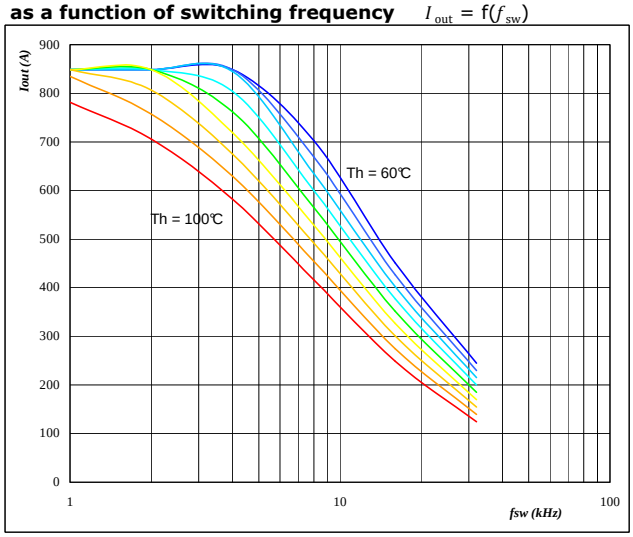


At

T_j =	125	°C
DC-link =	600	V
f_{sw} =	4	kHz
T_h 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 $I_{out} = f(f_{sw})$

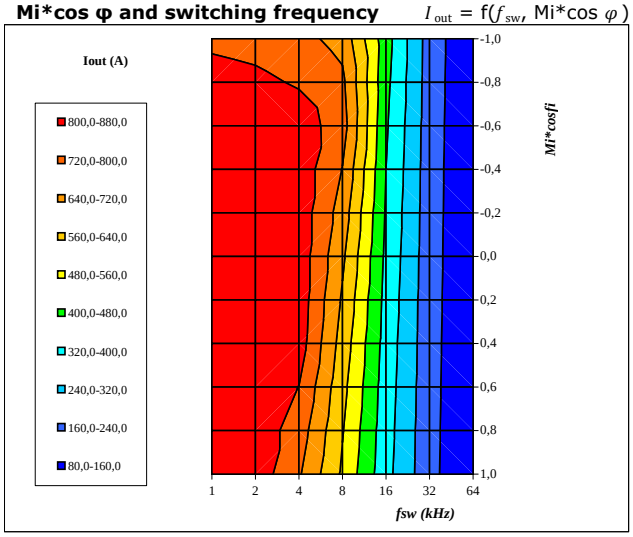


At

T_j =	125	°C
DC-link =	600	V
Mi*cos φ =	0,8	
T_h 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 $I_{out} = f(f_{sw}, Mi*\cos\varphi)$

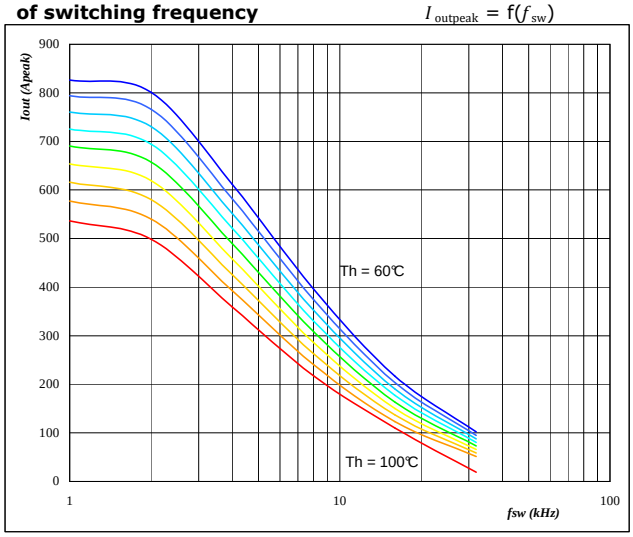


At

T_j =	125	°C
DC-link =	600	V
T_s =	80	°C

Figure 8 Phase

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

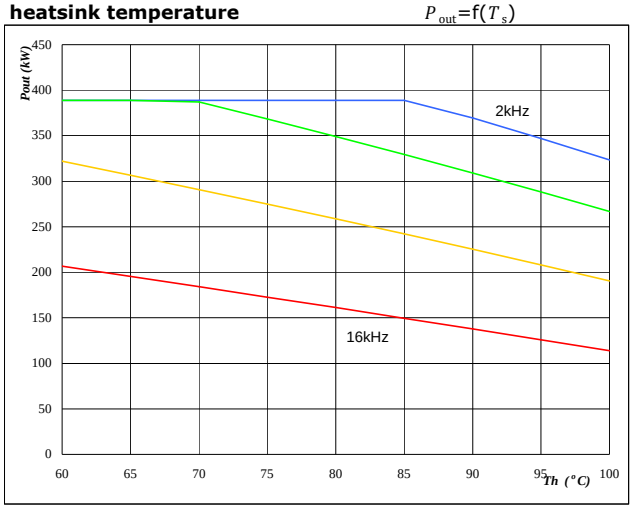


At

T_j =	125	°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 $P_{out}=f(T_s)$



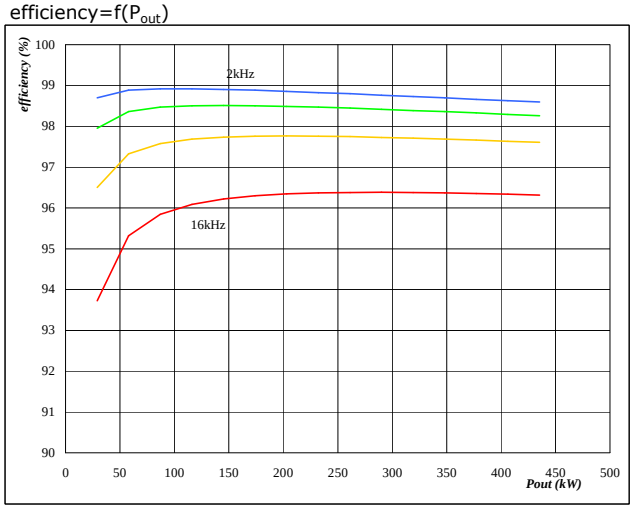
At

T_j =	125	°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})

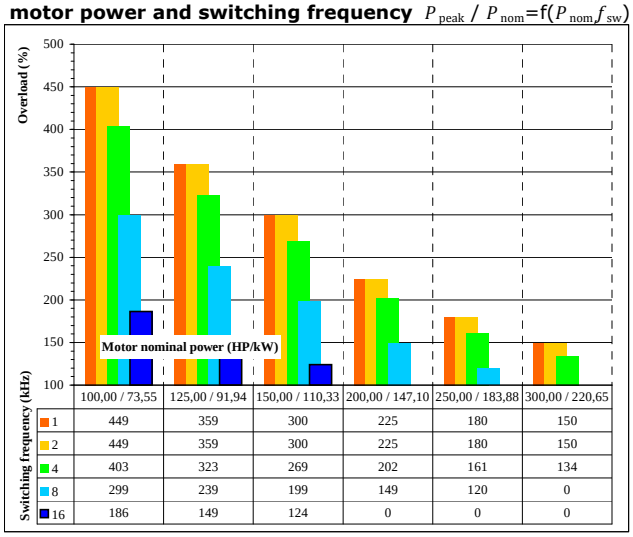


At

T_j =	125	°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)	100,00 / 73,55	125,00 / 91,94	150,00 / 110,33	200,00 / 147,10	250,00 / 183,88	300,00 / 220,65
1	449	359	300	225	180	150
2	449	359	300	225	180	150
4	403	323	269	202	161	134
8	299	239	199	149	120	0
16	186	149	124	0	0	0

At

T_j =	125	°C
DC-link =	600	V
Mi =	1	
cos φ=	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
T_h =	80	°C
Motor eff =	0,85	