General conditions

3phase SPWM		
V_{GEon}	=	**15 V**
V_{GEoff}	=	**-15 V**
R_{gon}	=	**8 Ω**
R_{goff}	=	**8 Ω**

Figure 1   IGBT

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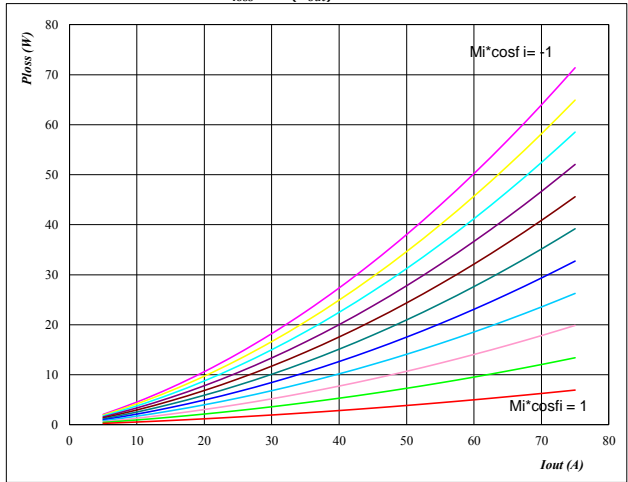

At
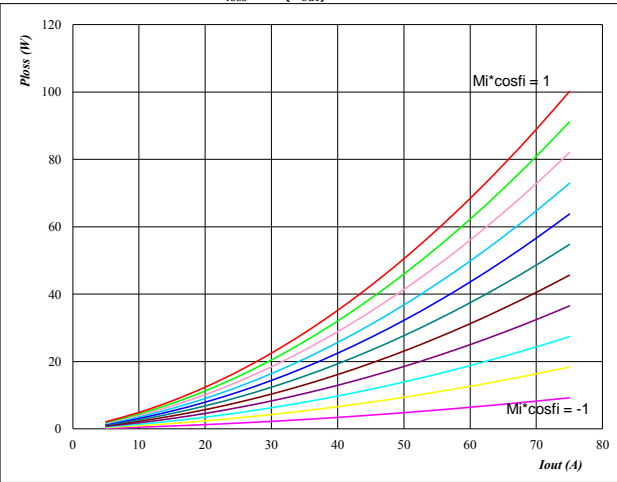
T_j = 150 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2   FWD

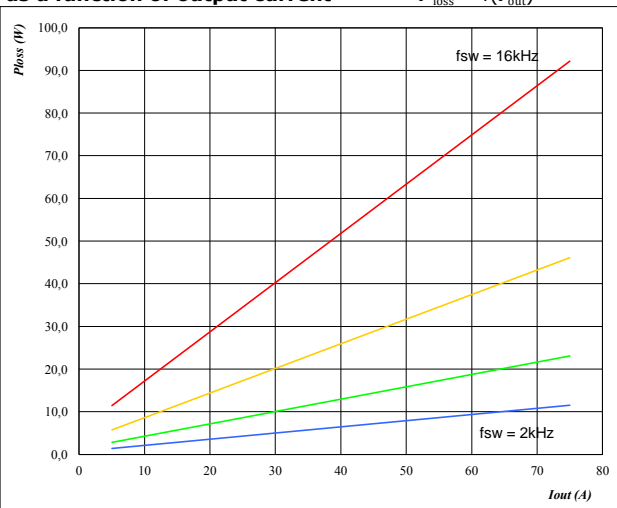**Typical average static loss as a function of output current** $P_{loss} = f(I_{out})$

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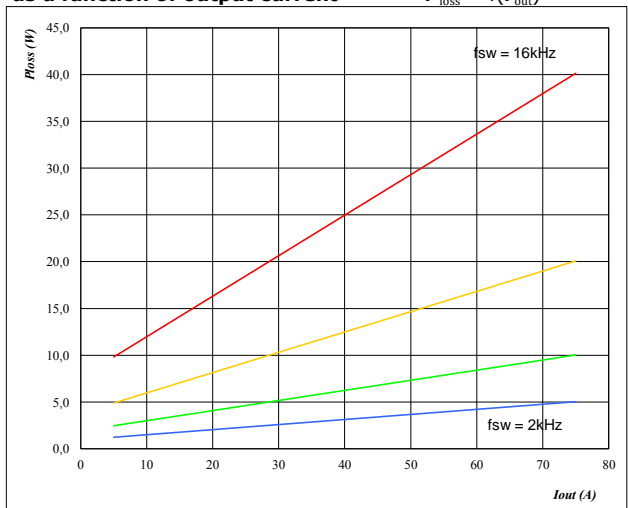

At

T_j = 150 °C

DC link = 600 V

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

Figure 4   FWD

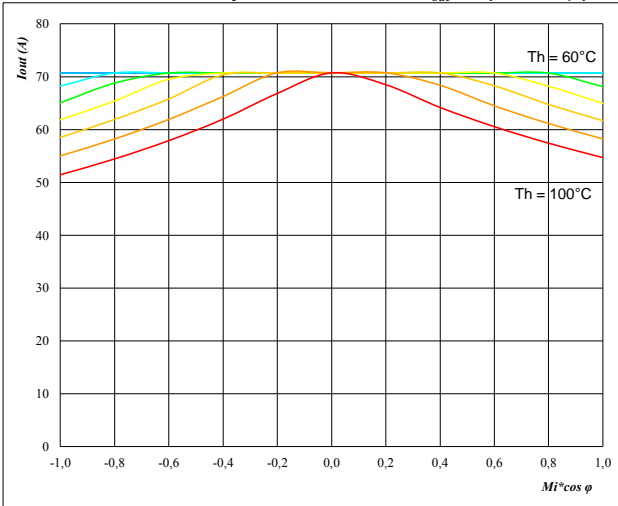**Typical average switching loss as a function of output current** $P_{loss} = f(I_{out})$

At

T_j = 150 °C

DC link = 600 V

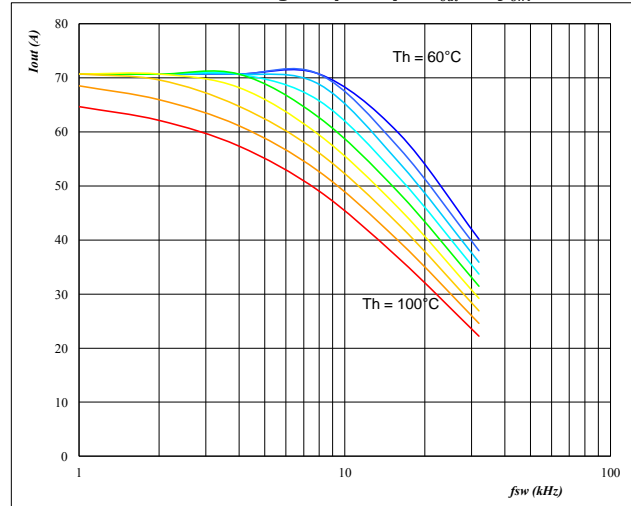f_{sw} from 2 kHz to 16 kHz in steps of factor 2

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_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 =	150	°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
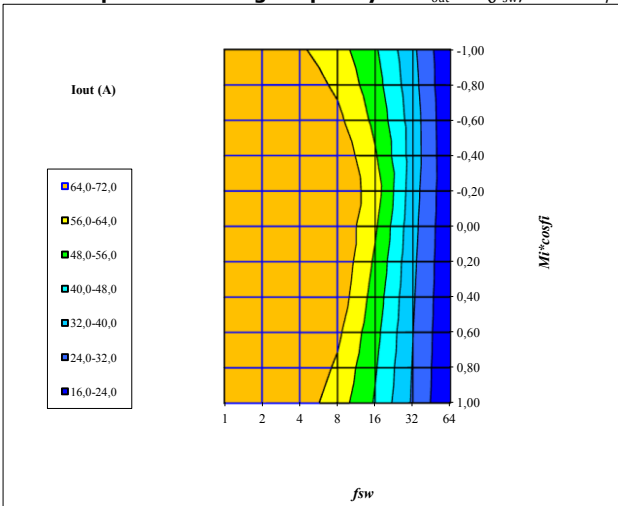
T_j =	150	°C
DC link =	600	V
T_h =	80	°C

Figure 8	Phase

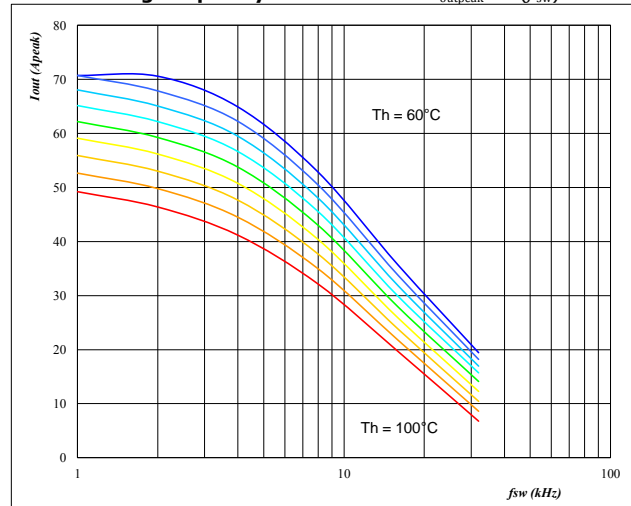**Typical available 0Hz output current as a function of switching frequency** $I_{outpeak} = f(f_{sw})$

At

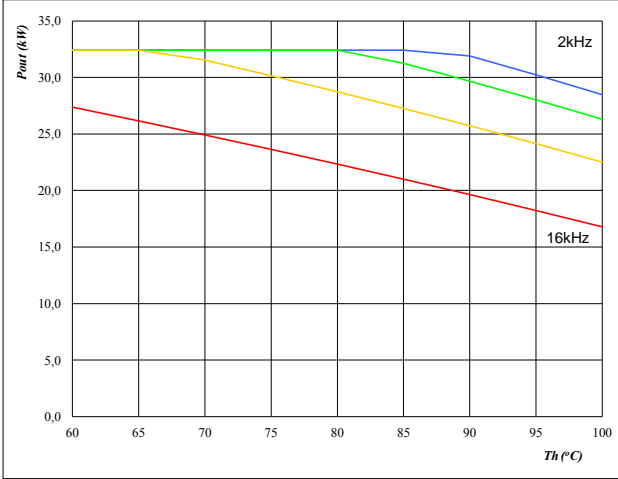| T_j =	150	°C
DC link =	600	V
T_h from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	

Figure 9   Inverter

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

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$_\text{out}$)

At
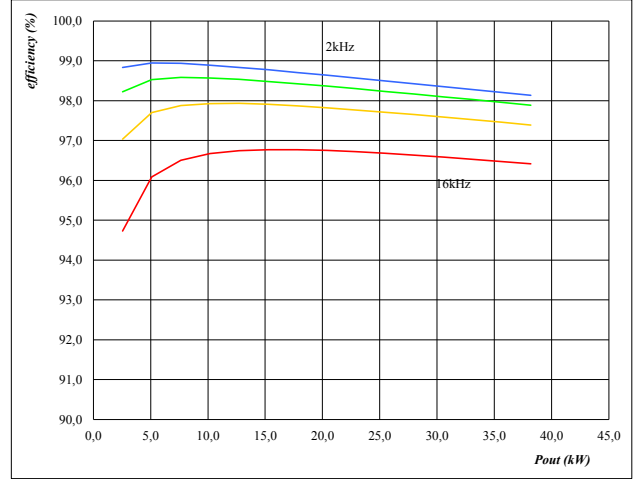
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_sw from	2 kHz to 16 kHz in steps of factor 2	

Figure 11   Inverter

Typical available overload factor as a function of motor power and switching frequency P_peak / P_nom=f(P_nom,fsw)

Motor nominal power (HP/kW)		20,00 / 14,71	25,00 / 18,39	30,00 / 22,07	40,00 / 29,42
1	374	250	187	150	125	0
2	374	250	187	150	125	0
4	374	250	187	150	125	0
8	332	221	166	133	111	0
16	258	172	129	0	0	0

At
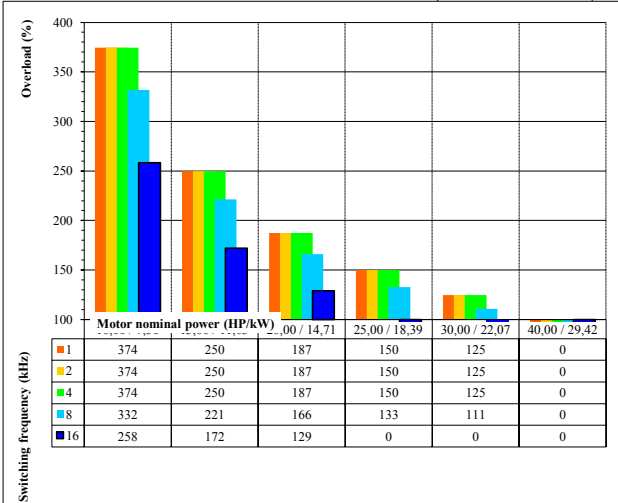
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,8	
f_sw from	1 kHz to 16kHz in steps of factor 2	
T_h =	80	°C
Motor eff =	0,85	