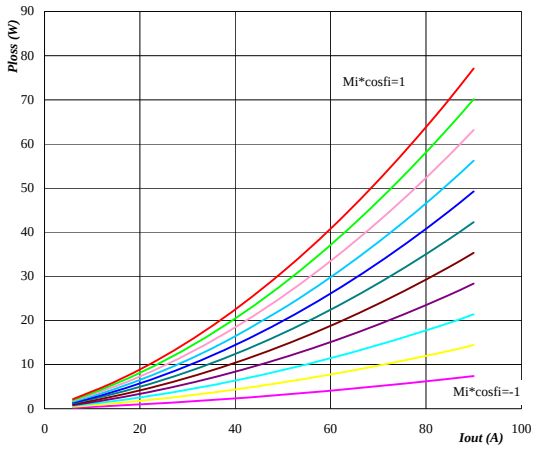
Output inverter application

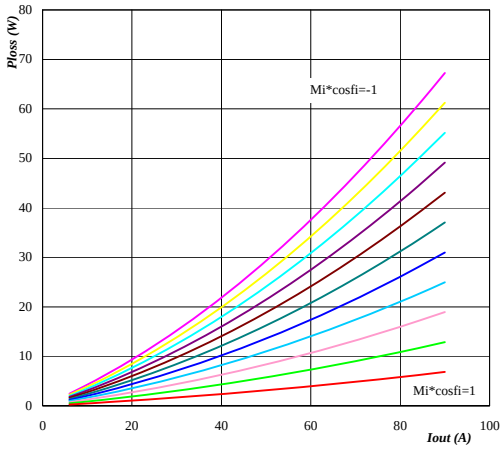
General conditions 3 phase SPWM, Vgeon= 15 V
Vgeoff= -15 V
Rgon= 4 Ω
Rgoff= 4 Ω

Figure 1. Typical avarage static loss as a function of output current
IGBT Ploss=f(Iout)



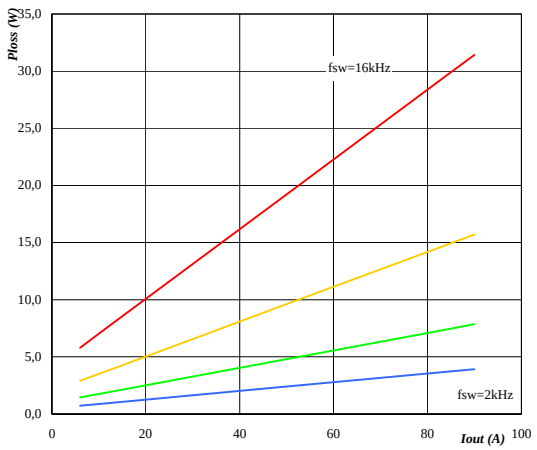
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

Figure 2. Typical avarage static loss as a function of output current
FRED Ploss=f(Iout)



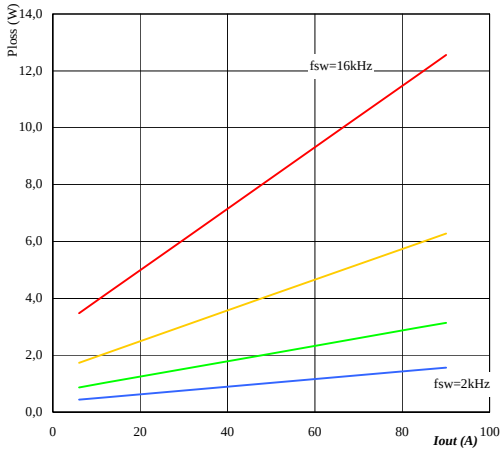
Conditions: Tj=125°C
Modulation index * cosfi
parameter Mi*cosfi from -1,00 to 1,00
in 0,20 steps

Figure 3. Typical avarage switching loss as a function of output current
IGBT Ploss=f(Iout)



Conditions: Tj=125°C
DC link= 320 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Figure 4. Typical avarage switching loss as a function of output current
FRED Ploss=f(Iout)



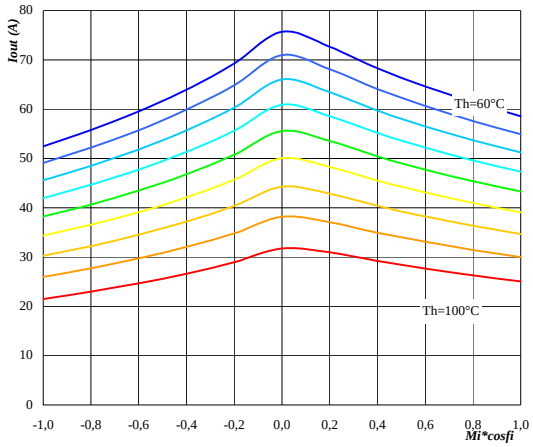
Conditions: Tj=125°C
DC link= 320 V
Switching freq. fsw from 2 kHz to 16 kHz
parameter in * 2 steps

Output inverter application

General conditions 3 phase SPWM, Vgeon= 15 V
Vgeoff= -15 V
Rgon= 4 Ω Rgoff= 4 Ω

Figure 5. Typical available 50Hz output current as a function of Mi*cosfi

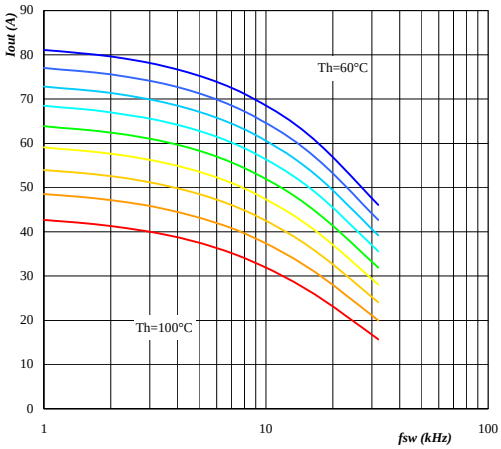
Phase Iout=f(Mi*cosfi)



Conditions: Tj=125°C
DC link= 320 V
fsw= 16 kHz
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 6. Typical available 50Hz output current as a function of switching frequency

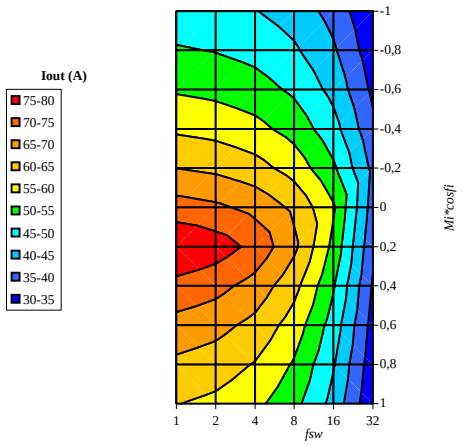
Phase Iout=f(fsw)



Conditions: Tj=125°C
DC link= 320 V
Mi*cosfi= 0,8
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 7. Typical available 50Hz output current as a function of Mi*cosfi and fsw

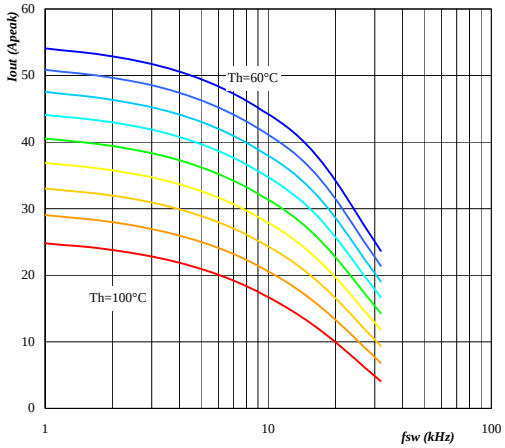
Phase Iout=f(fsw,Mi*cosfi)



Conditions: Tj=125°C
DC link= 320 V
Th= 80 °C

Figure 8. Typical available 0Hz output current as a function of switching frequency

Phase Ioutpeak=f(fsw)



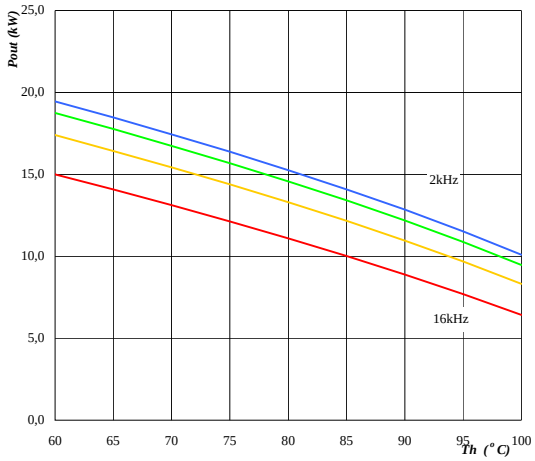
Conditions: Tj=125°C
DC link= 320 V
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Output inverter application

General conditions 3 phase SPWM, Vgeon= 15 V, Vgeoff= -15 V, Rgon= 4 Ω, Rgoff= 4 Ω

Figure 9. Typical available electric peak output power as a function of heatsink temperature

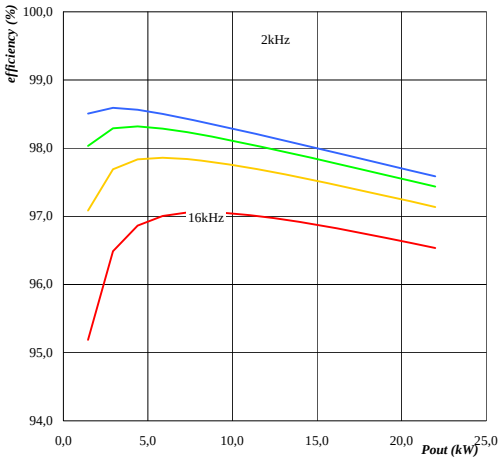
Inverter Pout=f(Th)



Conditions: Tj=125°C, DC link= 320 V, Modulation index Mi= 1, cosfi= 0,80, Switching freq. parameter: fsw from 2 kHz to 16 kHz in * 2 steps

Figure 10. Typical efficiency as a function of output power

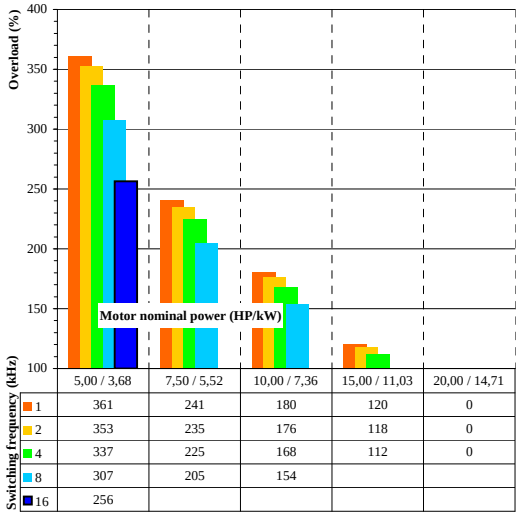
Inverter efficiency=f(Pout)



Conditions: Tj=125°C, DC link= 320 V, Modulation index Mi= 1, cosfi= 0,80, Switching freq. parameter: fsw from 2 kHz to 16 kHz in * 2 steps

Figure 11. Typical available overload factor as a function of motor power and switching frequency

Inverter Ppeak/Pnom=f(Pnom,fsw)



Switching frequency (kHz)	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03	20,00 / 14,71
1	361	241	180	120	0
2	353	235	176	118	0
4	337	225	168	112	0
8	307	205	154		
16	256				

Conditions: Tj=125°C, DC link= 320 V, Modulation index Mi= 1, cosfi= 0,8, Switching freq. parameter: fsw from 1 kHz to 16 kHz in * 2 steps, Heatsink temperature= 80 °C, Motor efficiency= 0,85