flow PIM 0 3rd gen — Inverter Application — 1200 V / 15 A

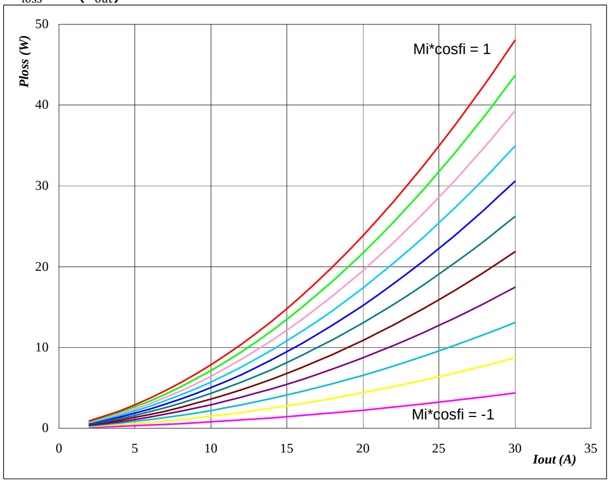
General conditions

3phase SPWM		
V_{GEon}	=	15 V
V_{GEoff}	=	0 V
R_{gon}	=	16 Ω
R_{goff}	=	16 Ω

Figure 1 IGBT

Typical average static loss as a function of output current

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



At

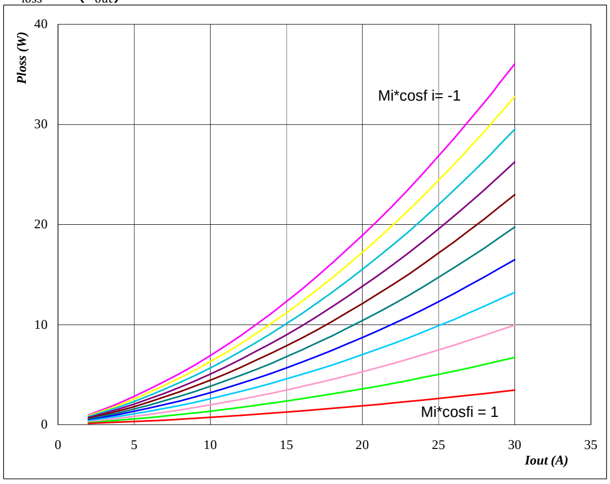
T_j = 125 °C

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

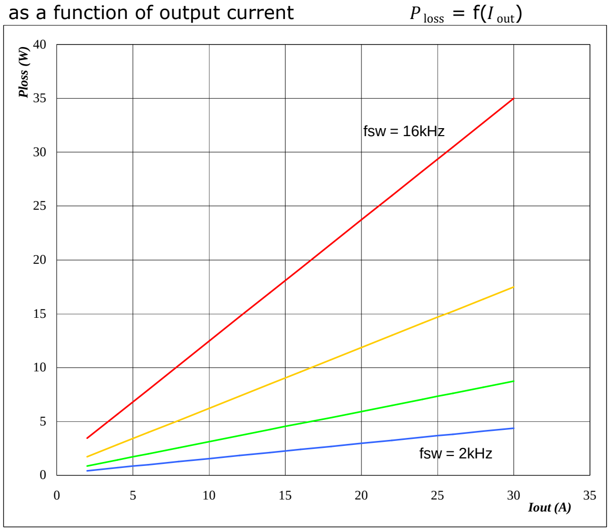
T_j = 125 °C

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

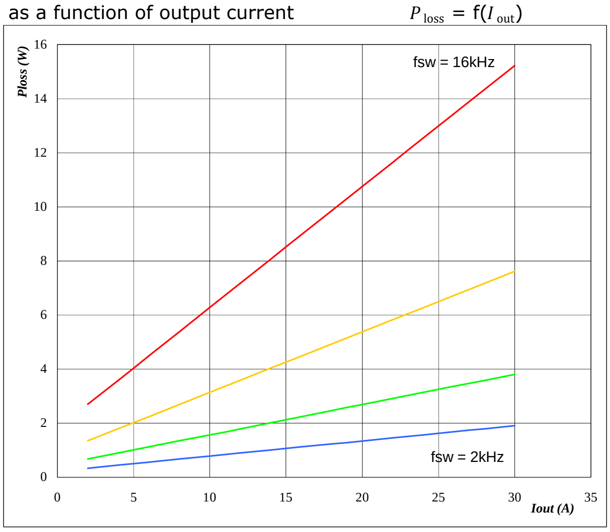
DC link = 600 V

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

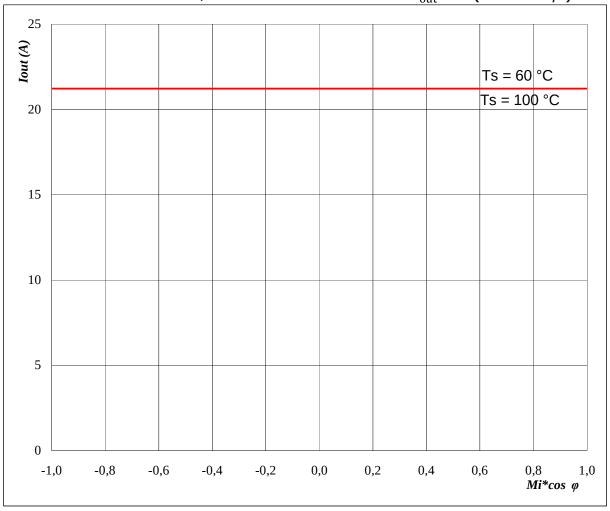
T_j = 125 °C

DC link = 600 V

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

Figure 5 Phase

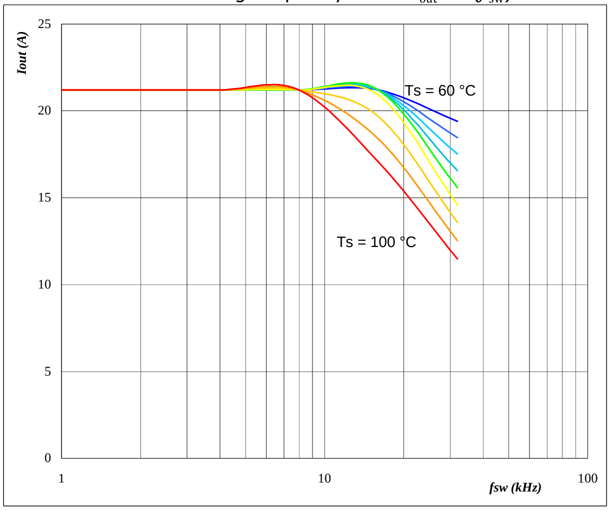
Typical available 50Hz output current
as a function Mi*cosφ I_{out} = f(Mi*cos φ)



At
T_j = 125 °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

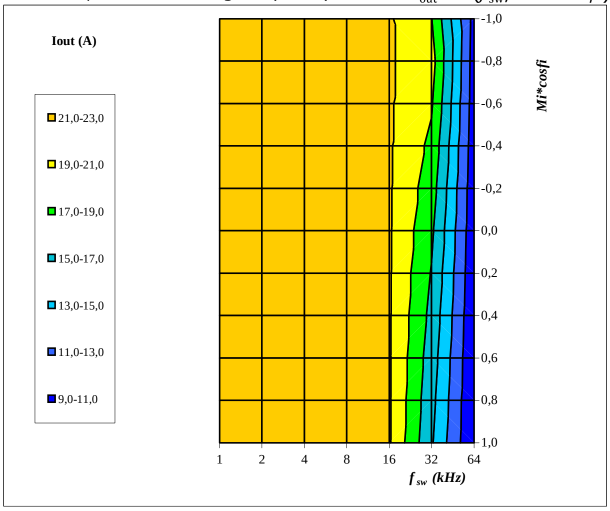
Typical available 50Hz output current
as a function of switching frequency I_{out} = f(f_{sw})



At
T_j = 125 °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

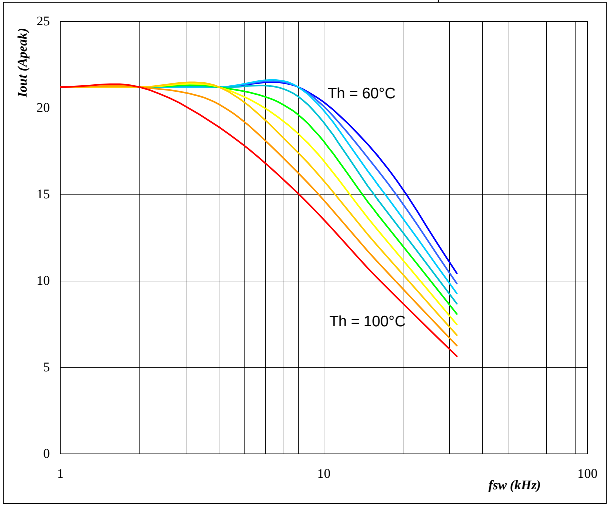
Typical available 50Hz output current as a function of
Mi*cos φ and switching frequency I_{out} = f(f_{sw}, Mi*cos φ)



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

Figure 8 Phase

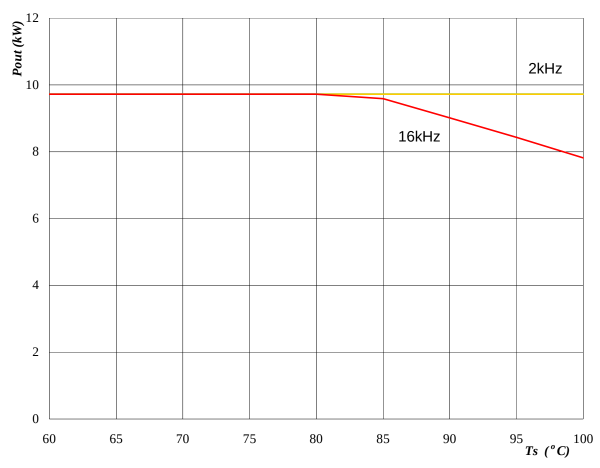
Typical available 0Hz output current as a function
of switching frequency $I_{outpeak}$ = f(f_{sw})



At
T_j = 125 °C
DC link = 600 V
T_s from 60 °C to 100 °C in steps of 5 °C
M_i = 0

Figure 9 Inverter

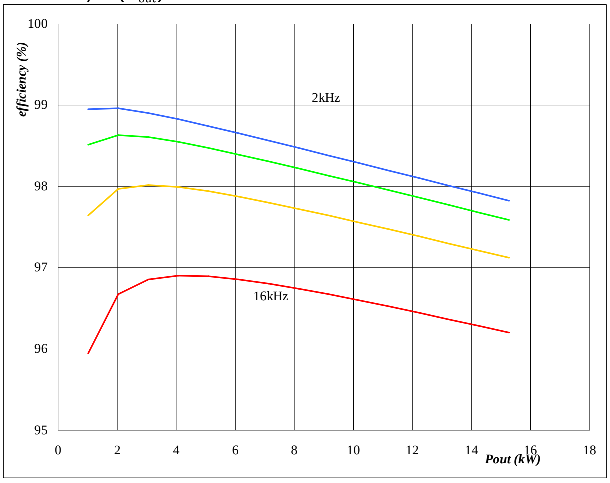
Typical available peak output power as a function of
heatsink temperature $P_{out}=f(T_s)$



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

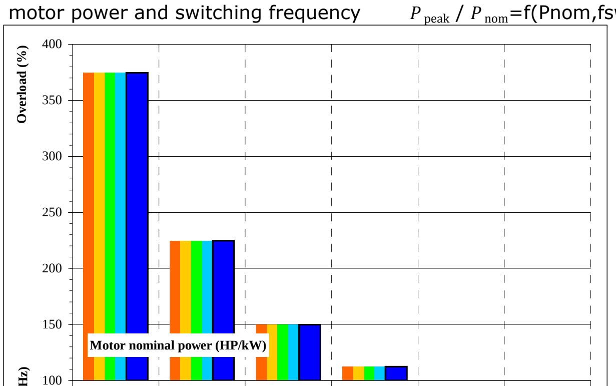
Typical efficiency as a function of output power
efficiency=f(P_{out})



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(Pnom,fsw)



Switching frequency (kHz)	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03	20,00 / 14,71
1	374	225	150	112	0	0
2	374	225	150	112	0	0
4	374	225	150	112	0	0
8	374	225	150	112	0	0
16	374	225	150	112	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_s = 80 °C
Motor eff = 0,85