flowPIM0 3rd Gen — Output Inverter Application — 1200V/15A

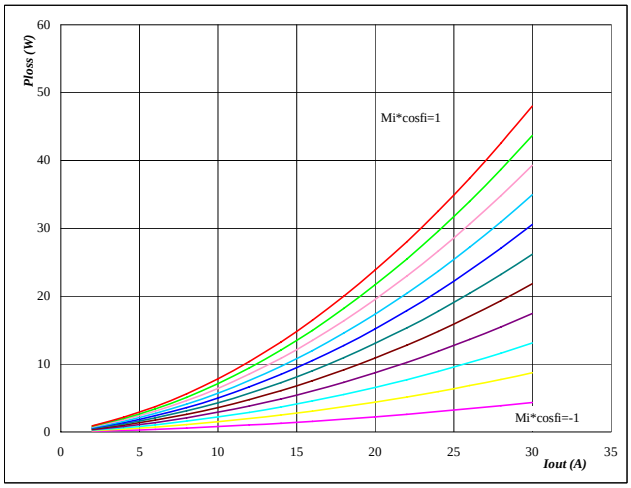
General conditions

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

Figure 1 IGBT

Typical average static loss as a function of output current

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

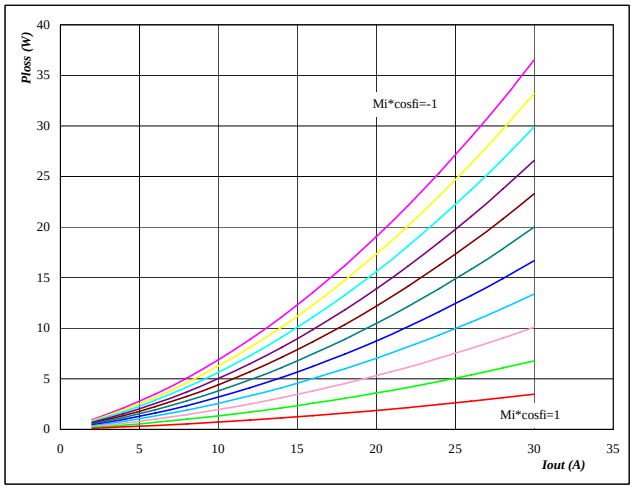


Tj=125°C
Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2 FRED

Typical average static loss as a function of output current

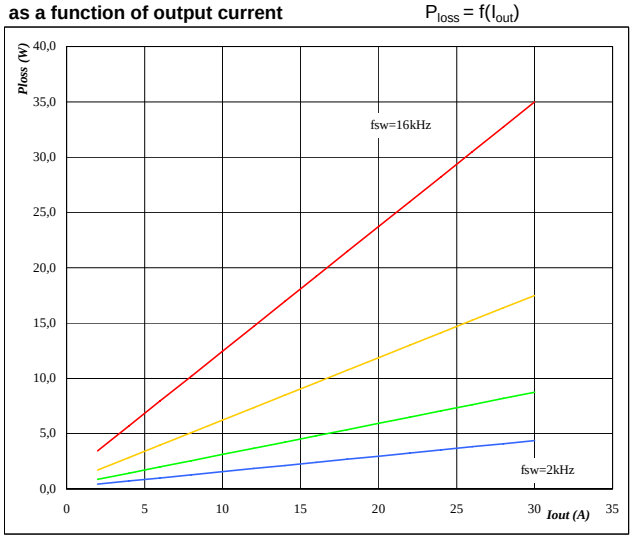
$P_{loss} = f(I_{out})$



Tj=125°C
Mi*cosfi from -1 to 1 in steps of -0,2

Figure 3 IGBT

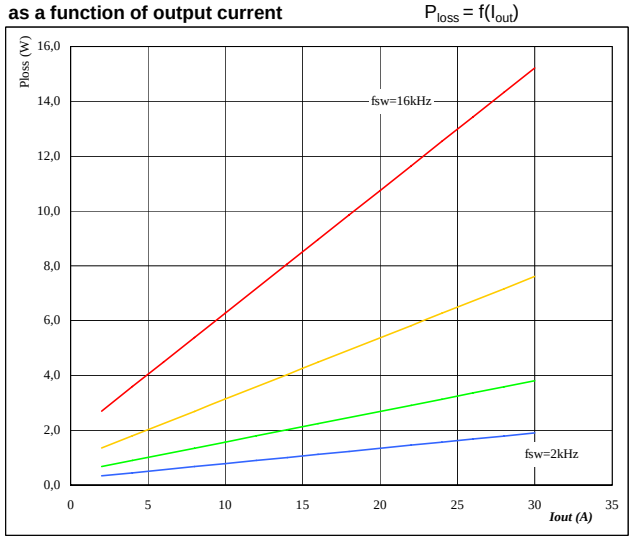
Typical average switching loss as a function of output current $P_{loss} = f(I_{out})$



T_j = 125 °C
DC link = 600 V
fsw from 2 kHz to 16 kHz in 2 steps

Figure 4 FRED

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

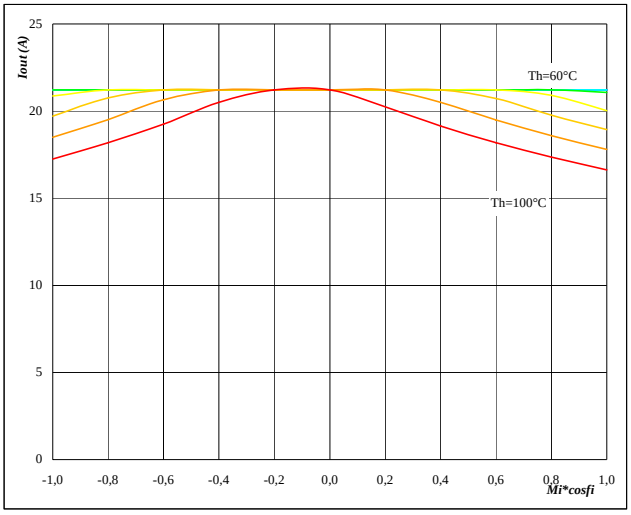


T_j = 125 °C
DC link = 600 V
fsw from 2 kHz to 16 kHz in 2 steps

Output Inverter Application

Figure 5 Phase

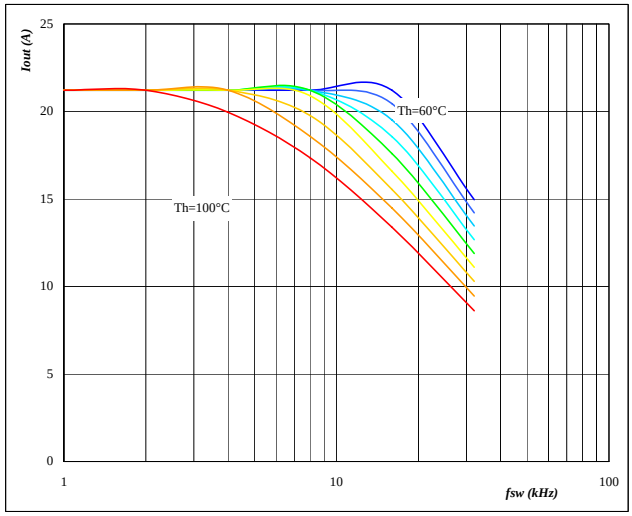
Typical available 50Hz output current as a function Mi*cosfi $I_{out} = f(Mi*cosfi)$



T_j = 125 °C
DC link = 600 V
fsw = 8 kHz
Th from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase

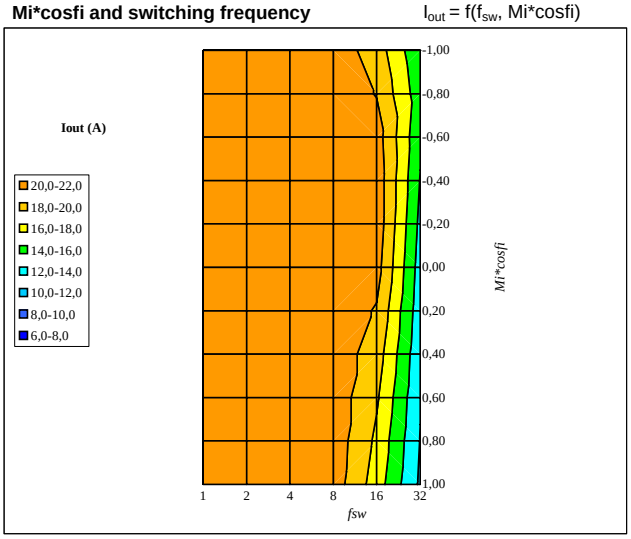
Typical available 50Hz output current as a function of switching frequency $I_{out} = f(f_{sw})$



T_j = 125 °C
DC link = 600 V
Mi*cosfi = 0,8
Th from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase

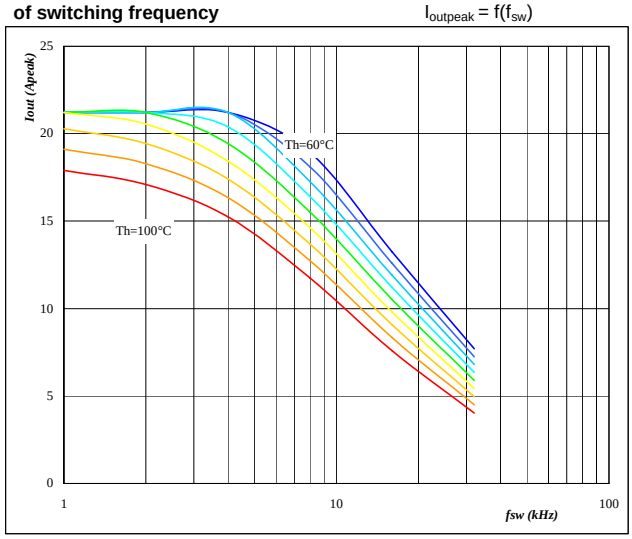
Typical available 50Hz output current as a function of Mi*cosfi and switching frequency $I_{out} = f(f_{sw}, Mi*cosfi)$



T_j = 125 °C
DC link = 600 V
T_h = 80 °C

Figure 8 Phase

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

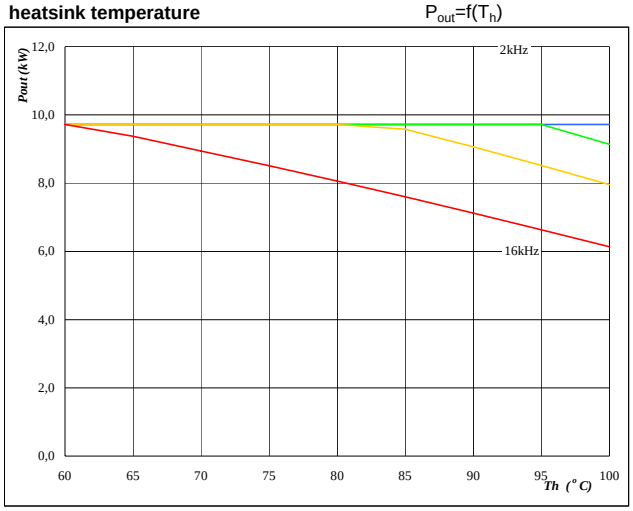


T_j = 125 °C
DC link = 600 V
Th from 60 °C to 100 °C in steps of 5 °C

Output Inverter Application

Figure 9 Inverter

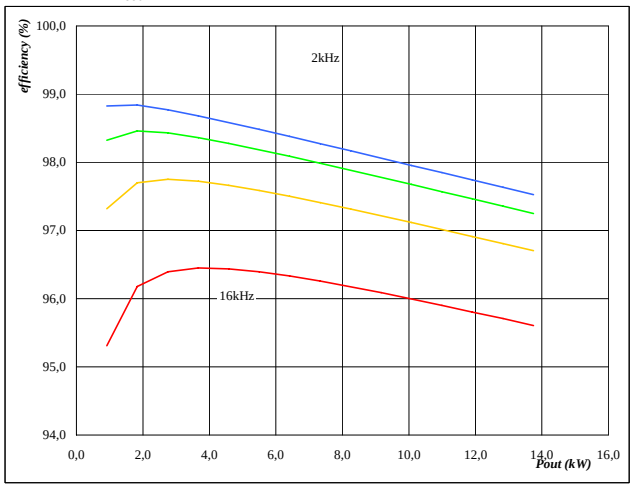
Typical available peak output power as a function of heatsink temperature $P_{out}=f(T_h)$



T_j = 125 °C
DC link = 600 V
Mi = 1
cosfi = 0,80
fsw from 2 kHz to 16 kHz in 2 steps

Figure 10 Inverter

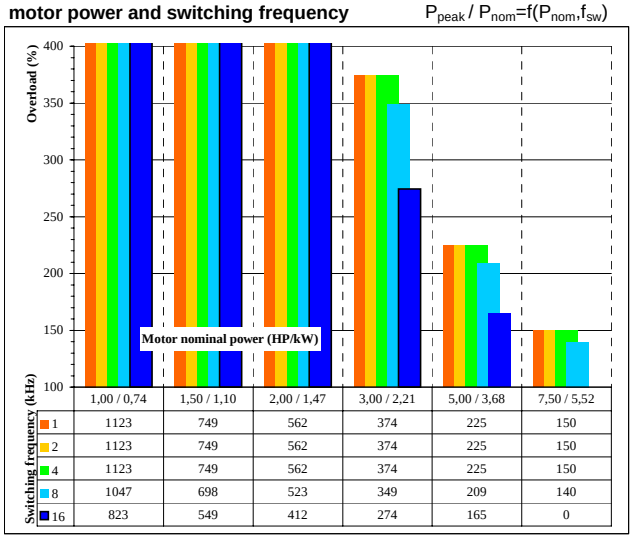
Typical efficiency as a function of output power efficiency=f(P_{out})



T_j = 125 °C
DC link = 600 V
Mi = 1
cosfi = 0,80
fsw from 2 kHz to 16 kHz in 2 steps

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)	1,00 / 0,74	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52
1	1123	749	562	374	225	150
2	1123	749	562	374	225	150
4	1123	749	562	374	225	150
8	1047	698	523	349	209	140
16	823	549	412	274	165	0

At
T_j = 125 °C
DC link = 600 V
Mi = 1
cosfi = 0,8
fsw from 1 kHz to 16 kHz in 2 steps
Th = 90 °C
Motor eff = 0,85

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