| **flowPIM 2** | **Output Inverter Application** | **1200 V / 50 A** |

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

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

At
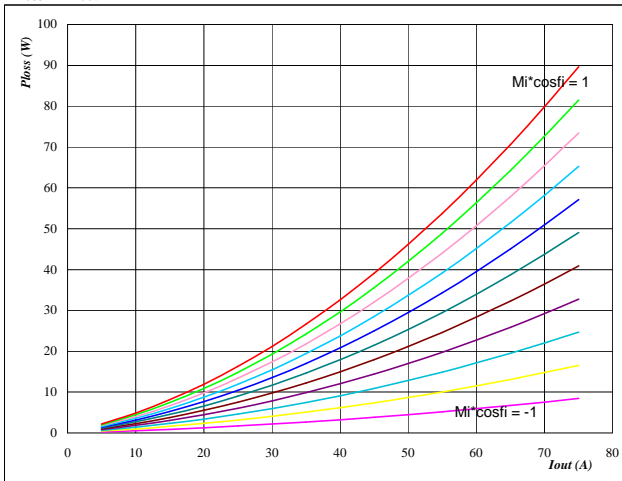
$T_j =$ 150 ℃

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2	FWD

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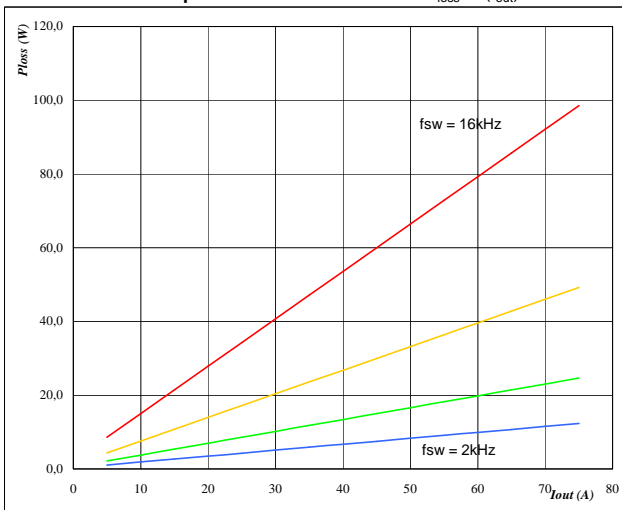
$P_{loss} = f(I_{out})$

At
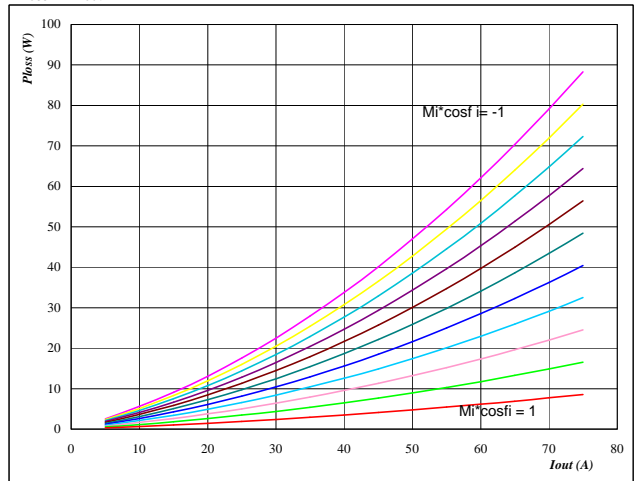
$T_j =$ 150 ℃

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 3	IGBT

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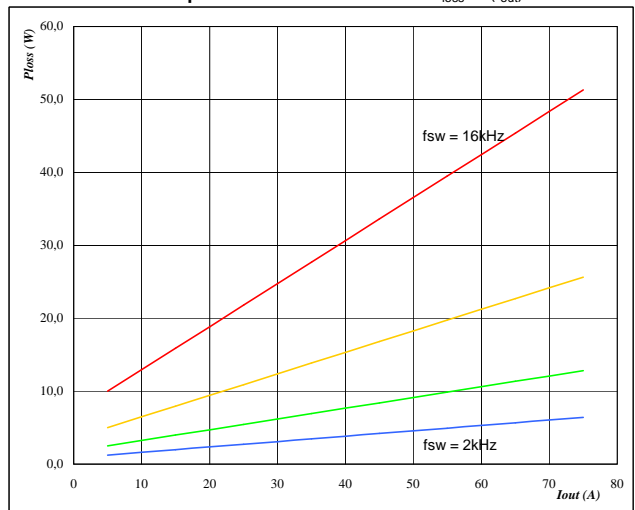

At

$T_j =$ 150 ℃

DC link = 600 V

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

Figure 4	FWD

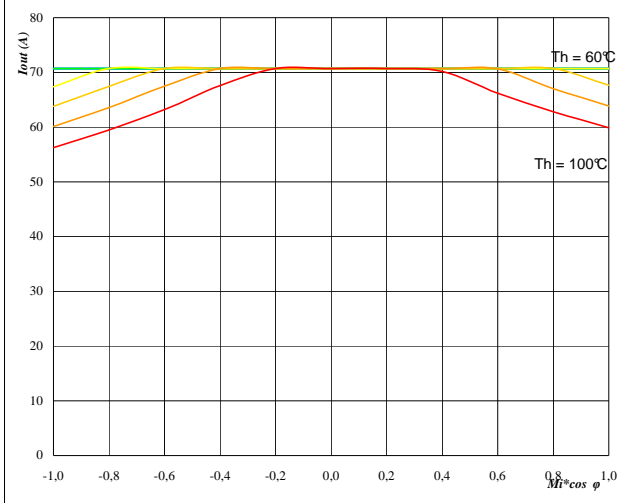**Typical average switching loss as a function of output current** $P_{loss} = f(I_{out})$

At

$T_j =$ 150 ℃

DC link = 600 V

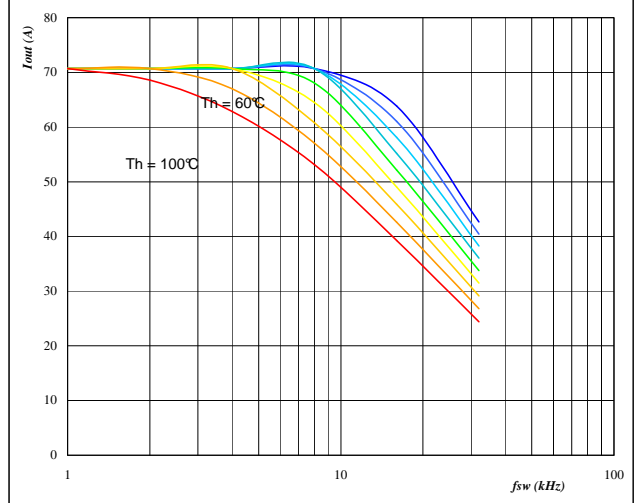f_{sw} from 2 kHz to 16 kHz in steps of factor 2

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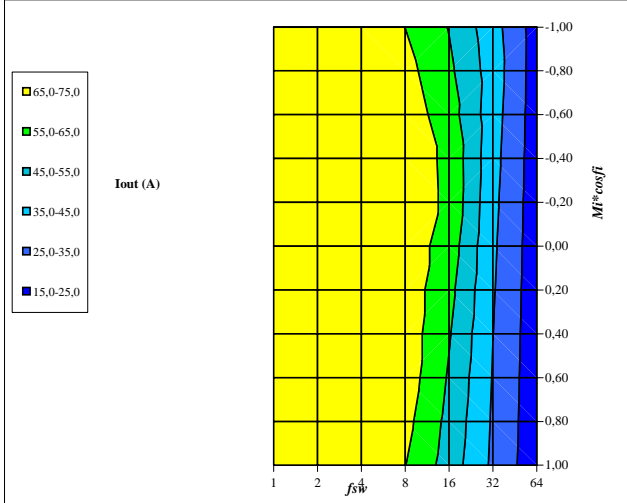
$T_j =$	150	°C
DC link =	600	V
$T_h =$	80	°C

Figure 8	Phase

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

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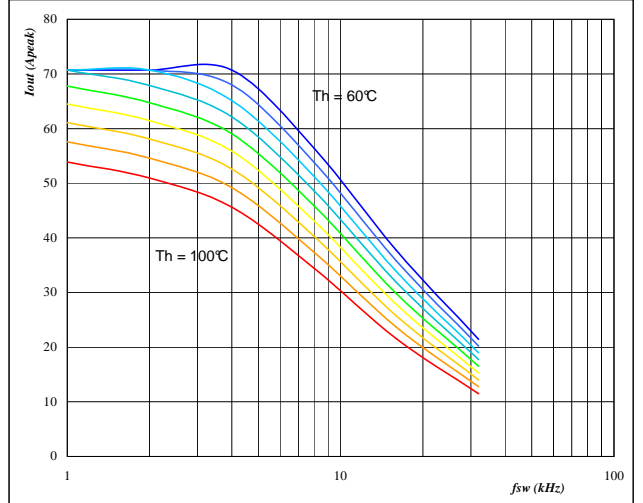
$T_j =$	150	°C
DC link =	600	V
T_h from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	

Figure 9   Inverter

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

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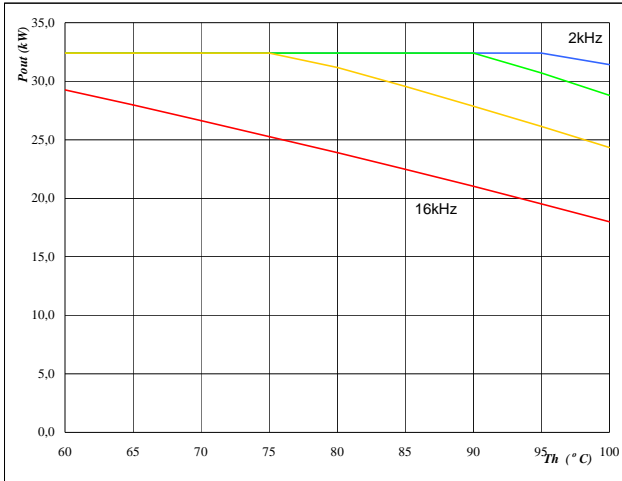
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 10   Inverter

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

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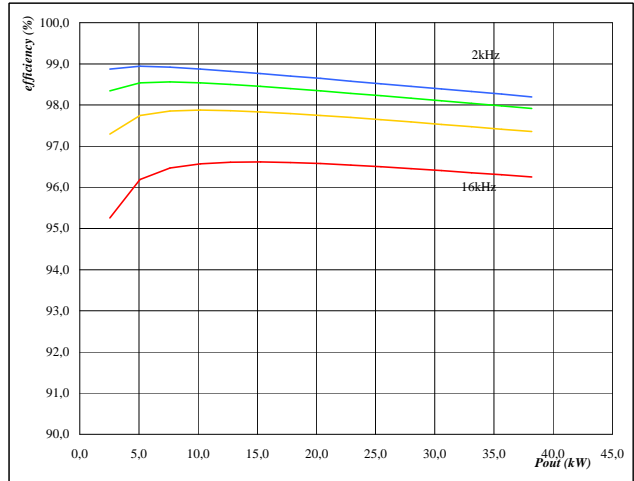
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 11   Inverter

Typical available overload factor as a function of motor power and switching frequency $P_{peak} / P_{nom}=f(P_{nom},f_{sw})$

Switching frequency (kHz)	Motor nominal power (HP/kW)					
	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03	20,00 / 14,71	25,00 / 18,39	30,00 / 22,07
1	499	374	250	187	150	125
2	499	374	250	187	150	125
4	499	374	250	187	150	125
8	480	360	240	180	144	120
16	368	276	184	138	110	0

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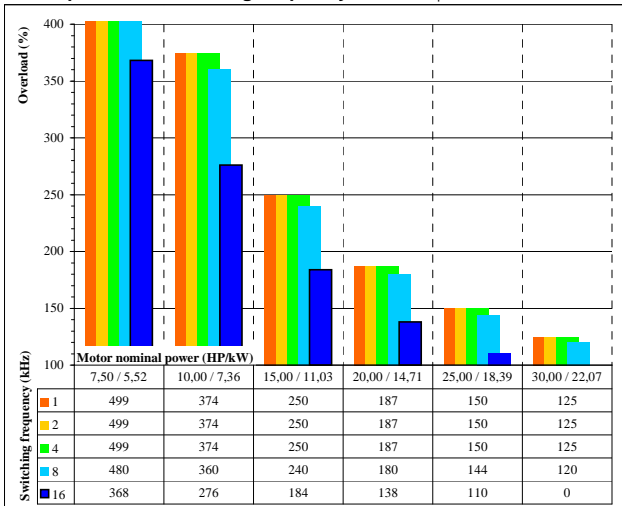
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
T_h =	80	°C
Motor eff =	0,85	