| **flowPACK 0 3rd gen** | **Output Inverter Application** | **1200V/35A** |

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
$P_{loss} = f(I_{out})$
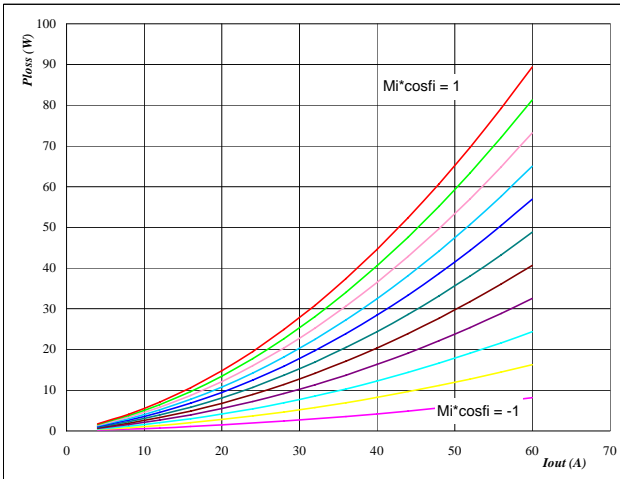
T_j = 150 °C

Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2	FRED

Typical average static loss as a function of output current
$P_{loss} = f(I_{out})$
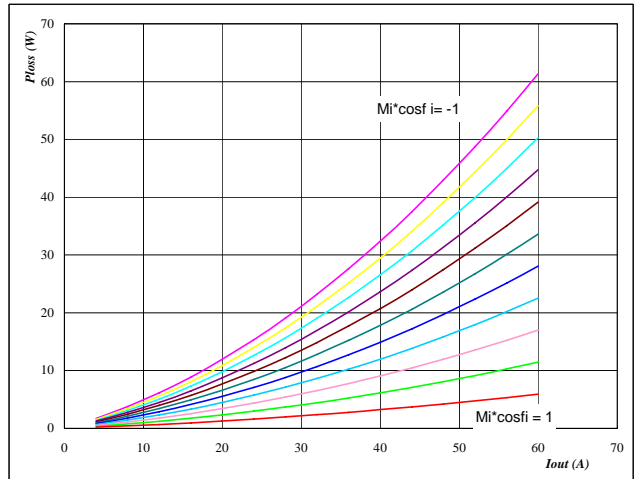
T_j = 150 °C

Mi*cosfi from -1 to 1 in steps of 0,2

Figure 3	IGBT

**Typical average switching loss
as a function of output current** $P_{loss} = f(I_{out})$
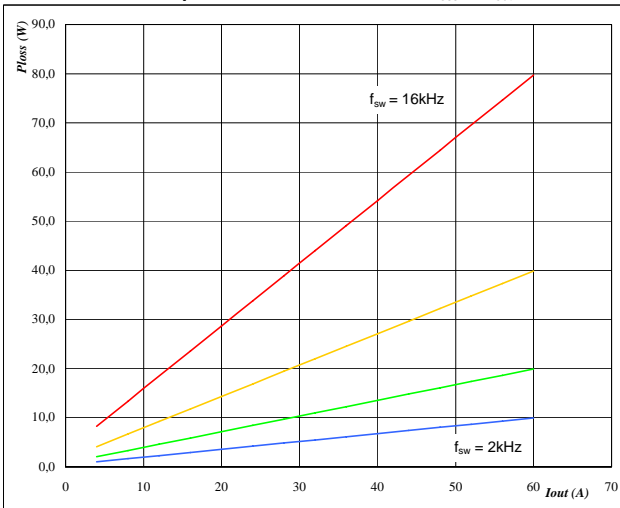
T_j = 150 °C

DC link = 600 V

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

Figure 4	FRED

**Typical average switching loss
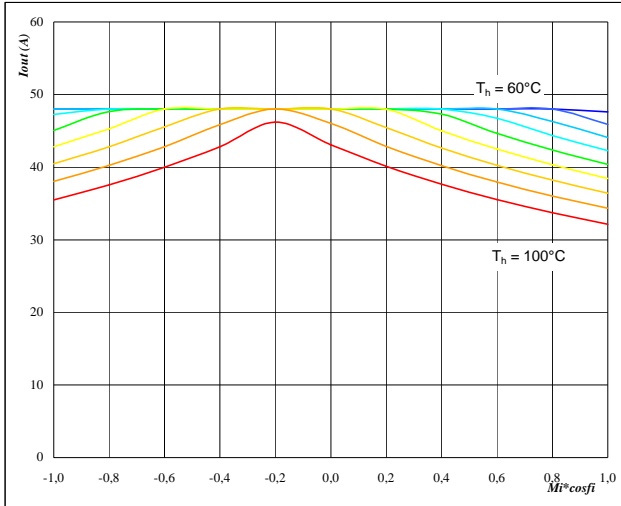as a function of output current** $P_{loss} = f(I_{out})$
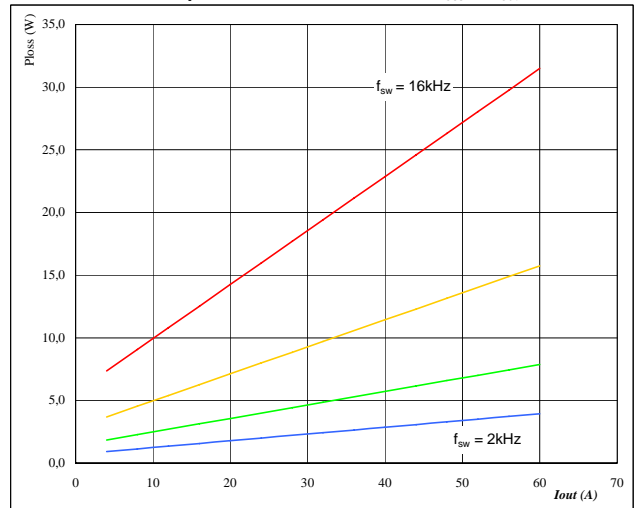
T_j = 150 °C

DC link = 600 V

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

Figure 5 Phase

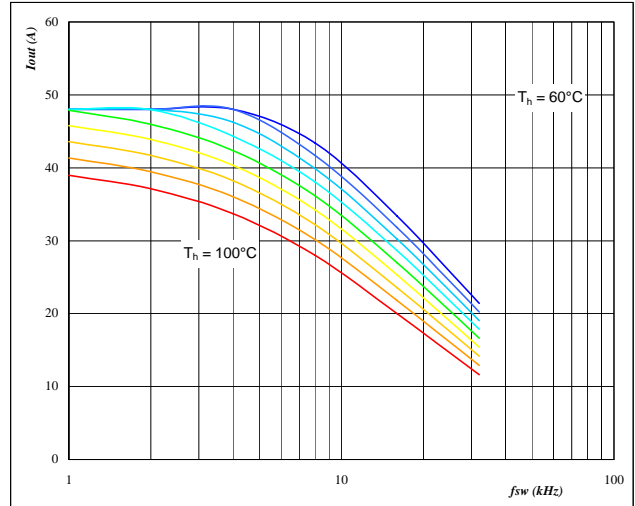**Typical available 50Hz output current as a function Mi*cosfi** $I_{out} = f(Mi*cosfi)$

$T_j =$	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 $I_{out} = f(f_{sw})$
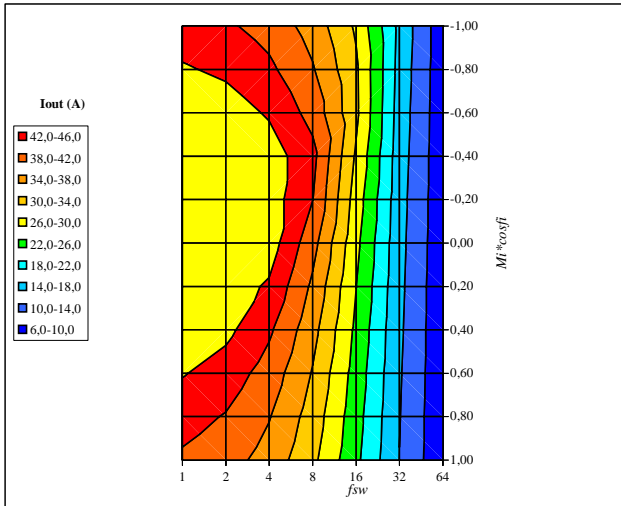

$T_j =$	150	°C
DC link =	600	V
Mi*cosfi =	0,8	
T_h from	60 °C to 100 °C in steps of 5 °C	

Figure 7 Phase

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

Iout (A)
- 42,0-46,0
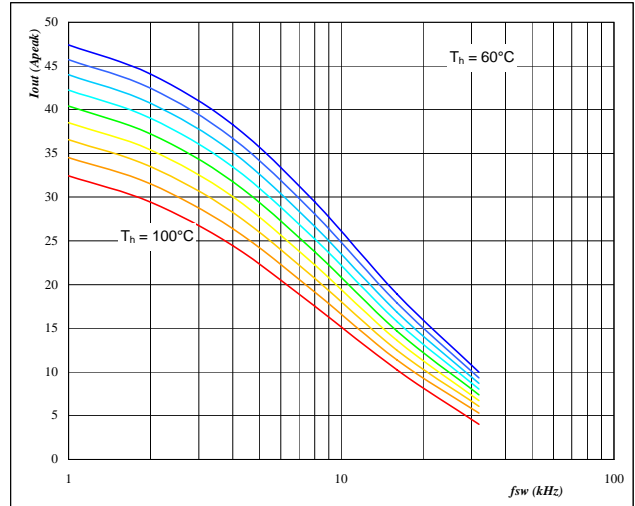- 38,0-42,0
- 34,0-38,0
- 30,0-34,0
- 26,0-30,0
- 22,0-26,0
- 18,0-22,0
- 14,0-18,0
- 10,0-14,0
- 6,0-10,0

$T_j =$	150	°C
DC link =	600	V
$T_h =$	90	°C

Figure 8 Phase

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

$T_j =$	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 $P_{out}=f(T_h)$
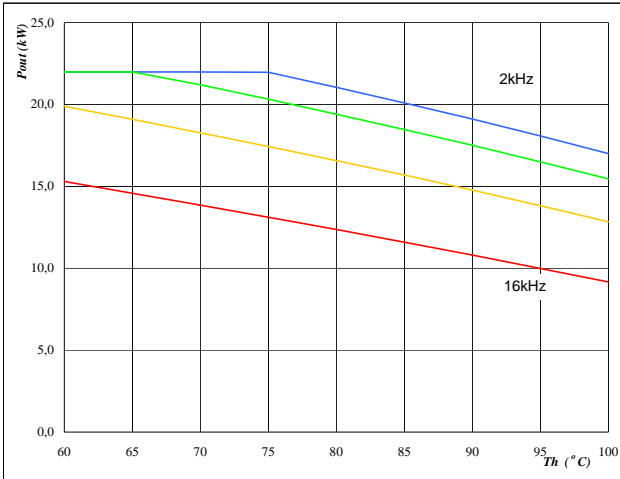
$T_j =$	150	°C
DC link =	600	V
Mi =	1	
cosfi =	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 10   Inverter

Typical efficiency as a function of output power
efficiency=f(P_{out})
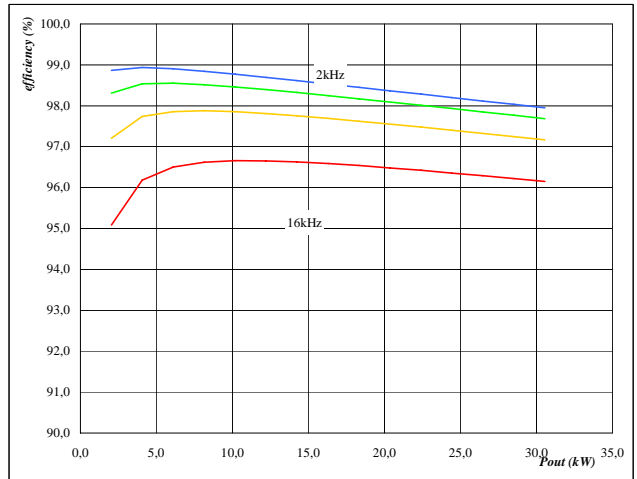
$T_j =$	150	°C
DC link =	600	V
Mi =	1	
cosfi =	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

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)	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36	15,00 / 11,03	20,00 / 14,71	25,00 / 18,39
1	462	308	231	154	115	0
2	442	295	221	147	110	0
4	405	270	202	135	0	0
8	341	228	171	114	0	0
16	250	167	125	0	0	0
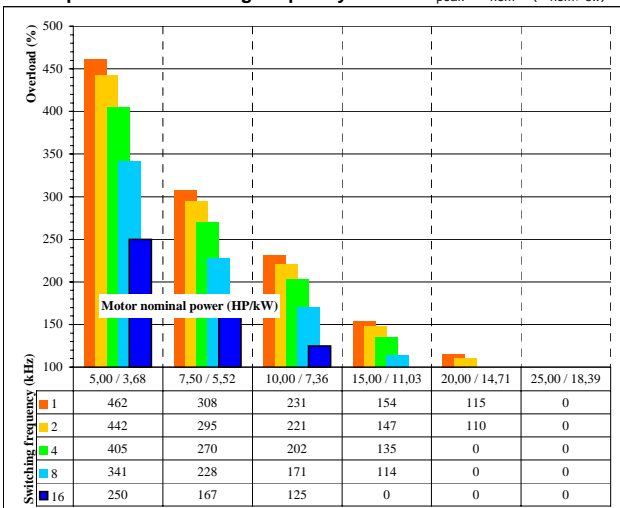
$T_j =$	150	°C
DC link =	600	V
Mi =	1	
cosfi =	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
$T_h =$	90	°C
Motor eff =	0,85	