| **flowPIM 2 3rd** | **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

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

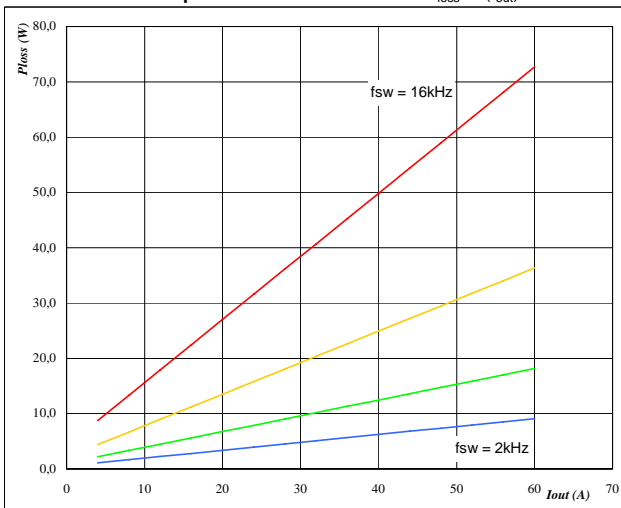**At**
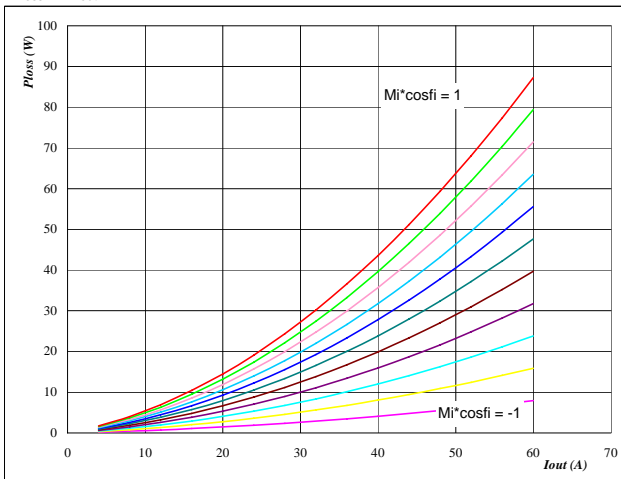
T_j = 150 °C

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

| **Figure 2** | FRED |

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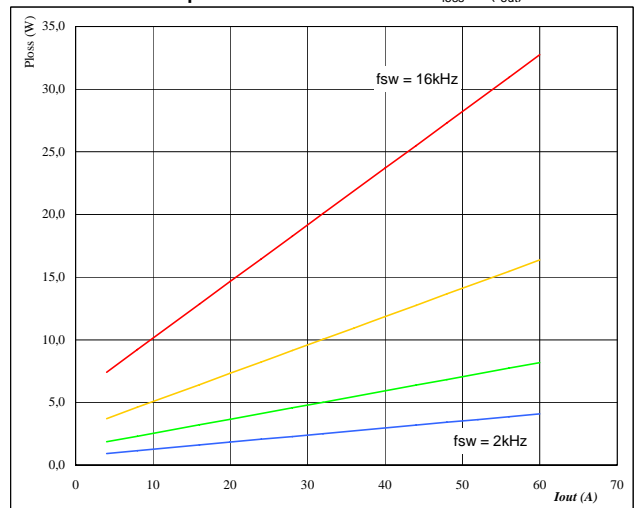
$P_{loss} = f(I_{out})$

At
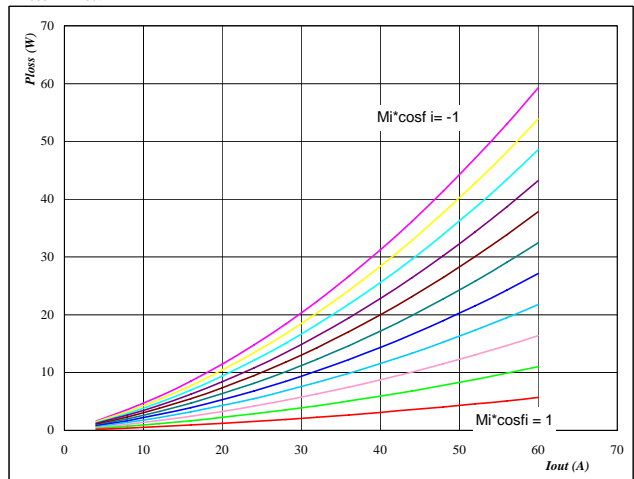
T_j = 150 °C

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

| **Figure 3** | IGBT |

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

At

T_j = 150 °C

DC link = 600 V

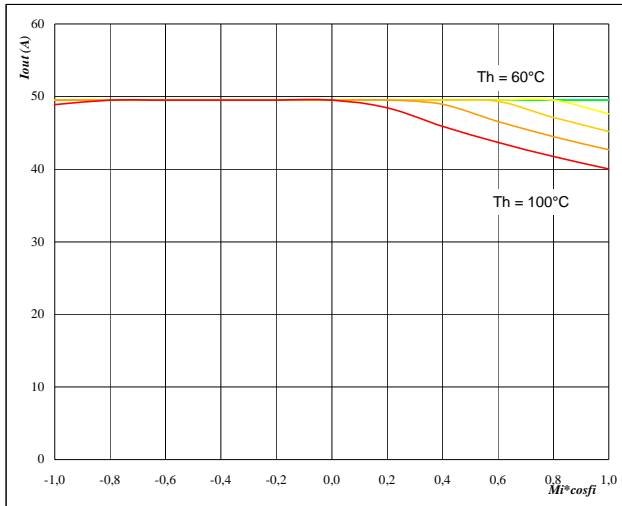fsw from 2 kHz to 16 kHz in steps of factor 2

| **Figure 4** | FRED |

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

At

T_j = 150 °C

DC link = 600 V

fsw from 2 kHz to 16 kHz in steps of factor 2

Figure 5   Phase

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

At

T_j =	150	°C
DC link =	600	V
fsw =	4	kHz

Th from 60 °C to 100 °C in steps of 5 °C

Figure 6   Phase

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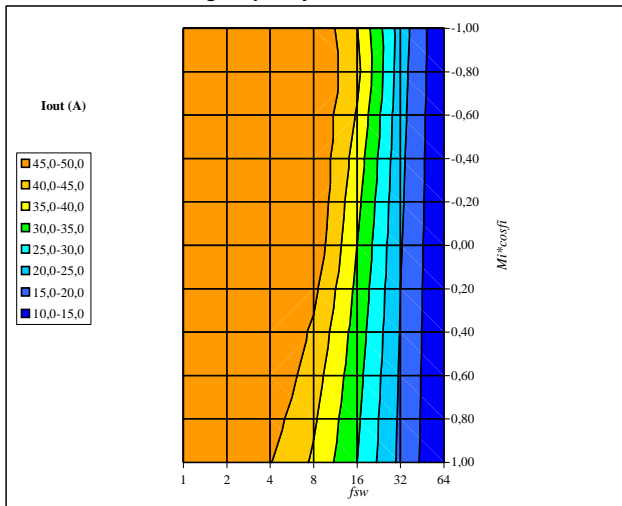as a function of switching frequency** $I_{out} = f(f_{sw})$

At
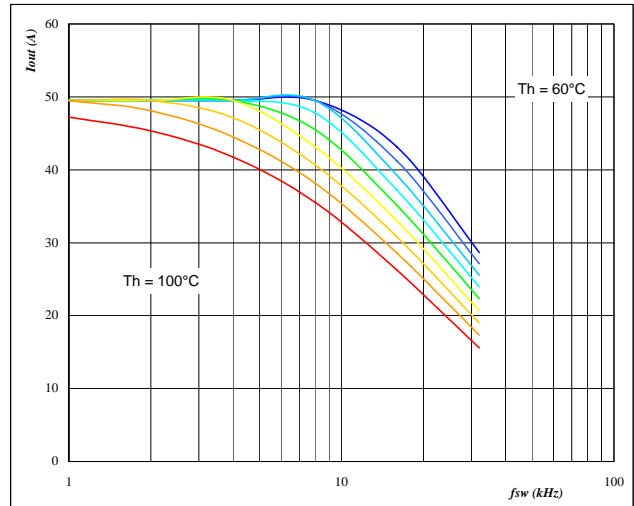
T_j =	150	°C
DC link =	600	V
Mi*cosfi =	0,8	

Th from 60 °C to 100 °C in steps of 5 °C

Figure 7   Phase

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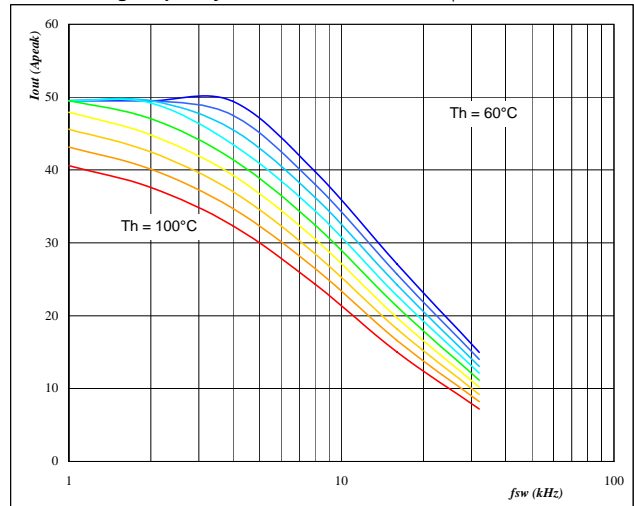Mi*cosfi and switching frequency** $I_{out} = f(f_{sw}, Mi*cosfi)$

At

T_j =	150	°C
DC link =	600,00	V
T_h =	90	°C

Figure 8   Phase

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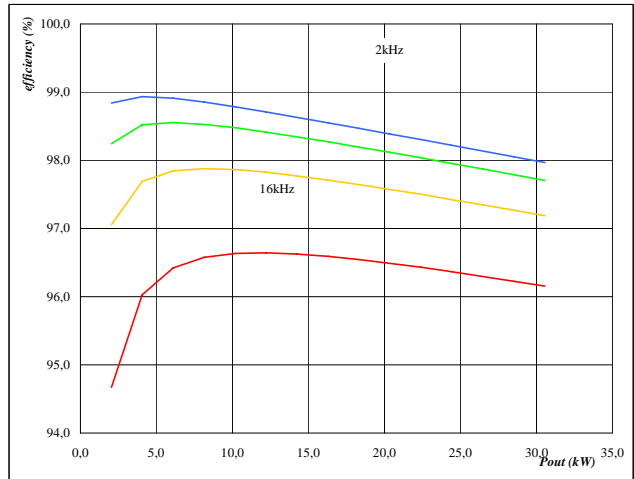

At

T_j =	150	°C
DC link =	600,00	V

Th from 60 °C to 100 °C in steps of 5 °C

| Figure 9 | Inverter |

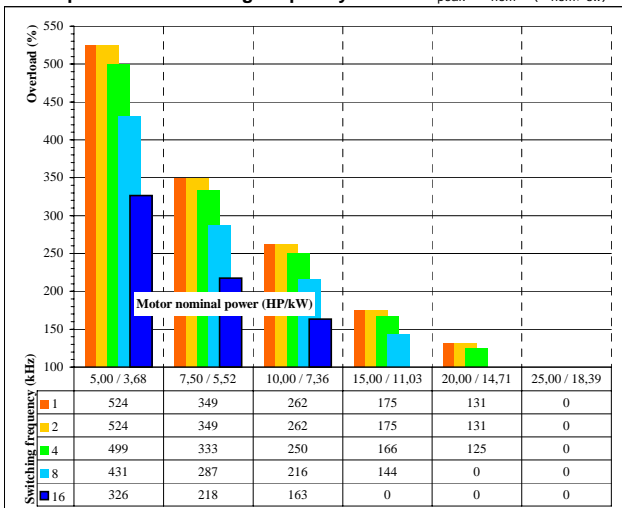**Typical available peak output power as a function of heatsink temperature** $P_{out}=f(T_h)$

At
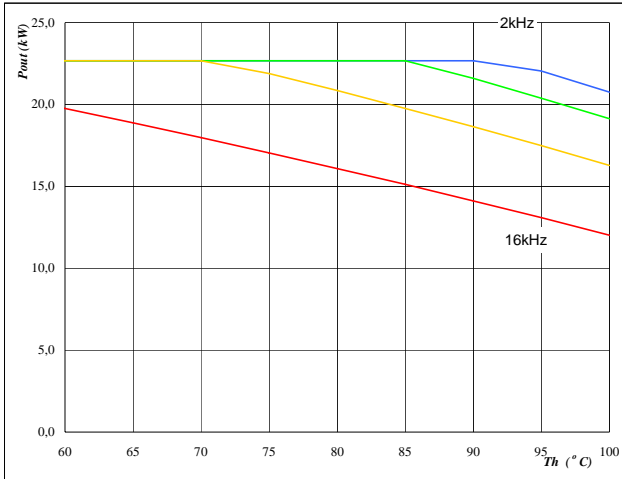
T_j =	150	°C
DC link =	600	V
Mi =	1	
cosfi =	0,80	

fsw 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	
cosfi =	0,80	

fsw 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})

Motor nominal power (HP/kW)

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	524	349	262	175	131	0
2	524	349	262	175	131	0
4	499	333	250	166	125	0
8	431	287	216	144	0	0
16	326	218	163	0	0	0

At

T_j =	150	°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	