Vincotech

| **flow90PACK 1 2nd 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
$P_{loss} = f(I_{out})$

At
T_j = 150 °C
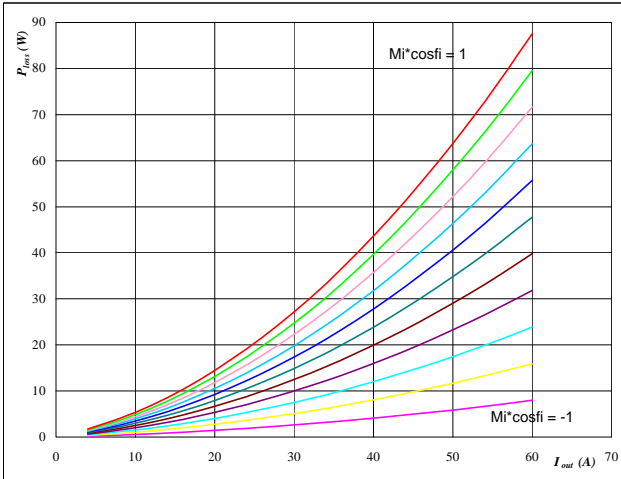
Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2 FWD

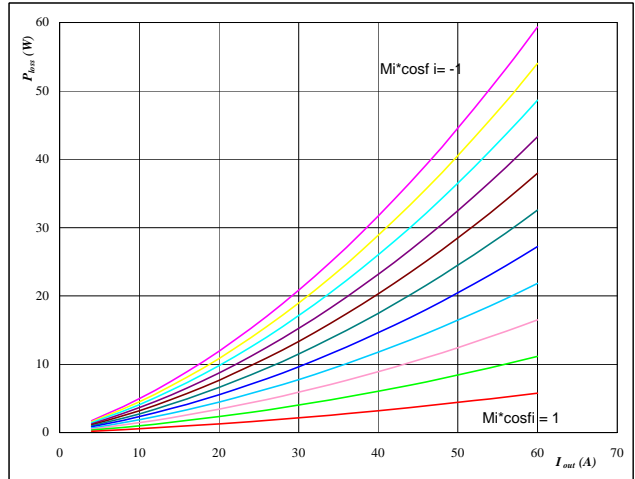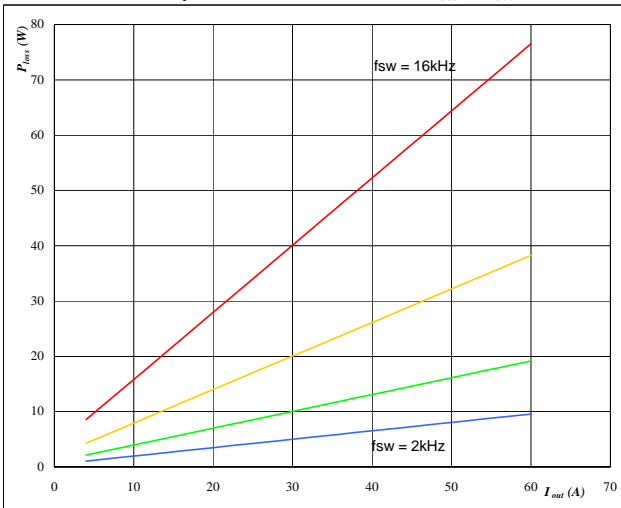**Typical average static loss as a function of output current**
$P_{loss} = f(I_{out})$

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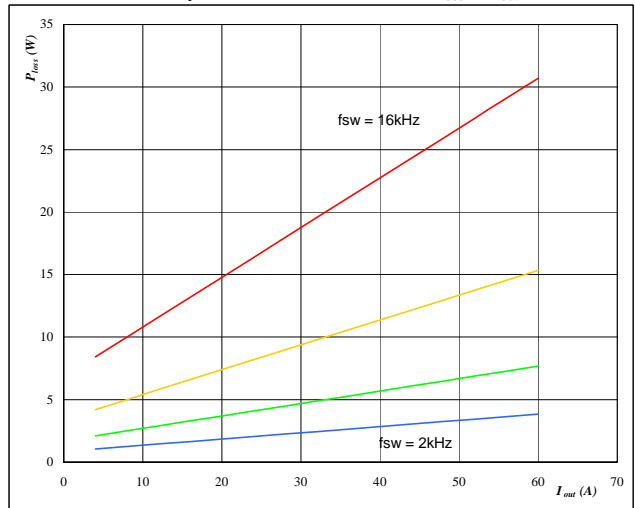

At
T_j = 150 °C
DC link = 600 V
f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 4 FWD

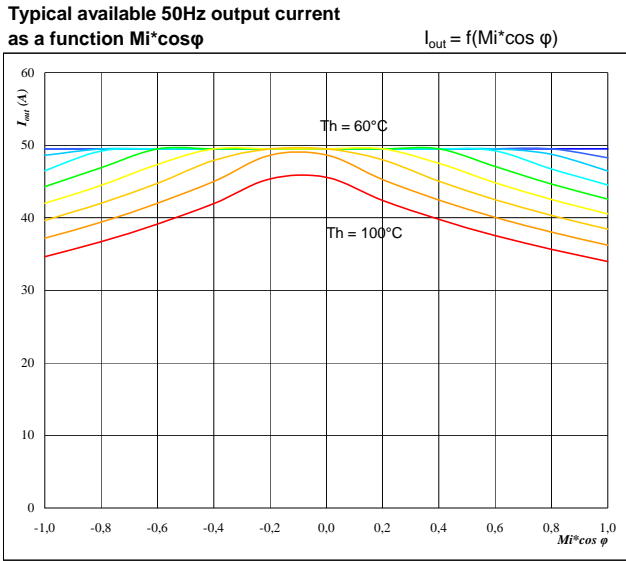**Typical average switching loss as a function of output current** $P_{loss} = f(I_{out})$
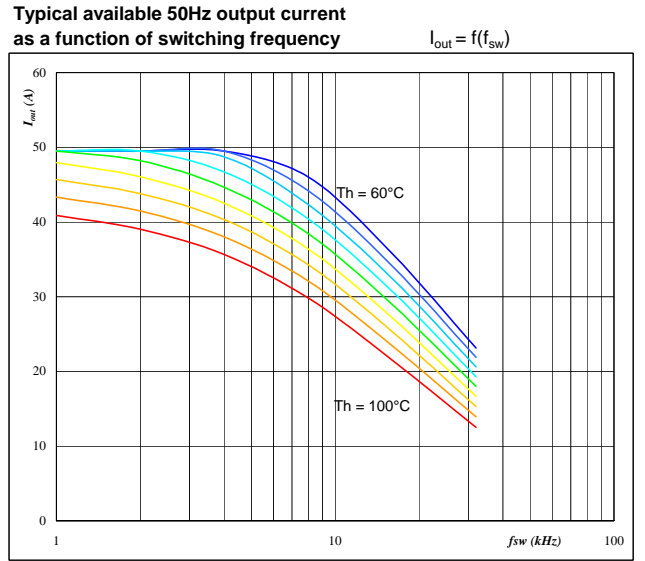

At
T_j = 150 °C
DC link = 600 V
f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 5 | Phase
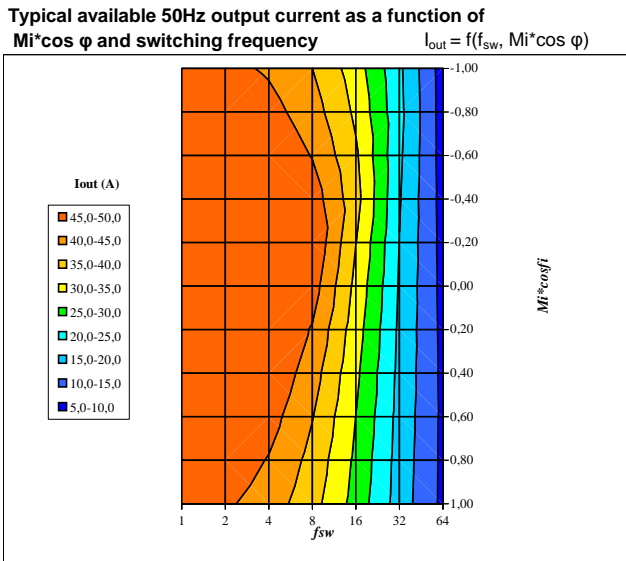
Typical available 50Hz output current
as a function Mi*cosφ $I_{out} = f(Mi*\cos \varphi)$

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 $I_{out} = f(f_{sw}, Mi*\cos \varphi)$

Iout (A)
- 45,0-50,0
- 40,0-45,0
- 35,0-40,0
- 30,0-35,0
- 25,0-30,0
- 20,0-25,0
- 15,0-20,0
- 10,0-15,0
- 5,0-10,0

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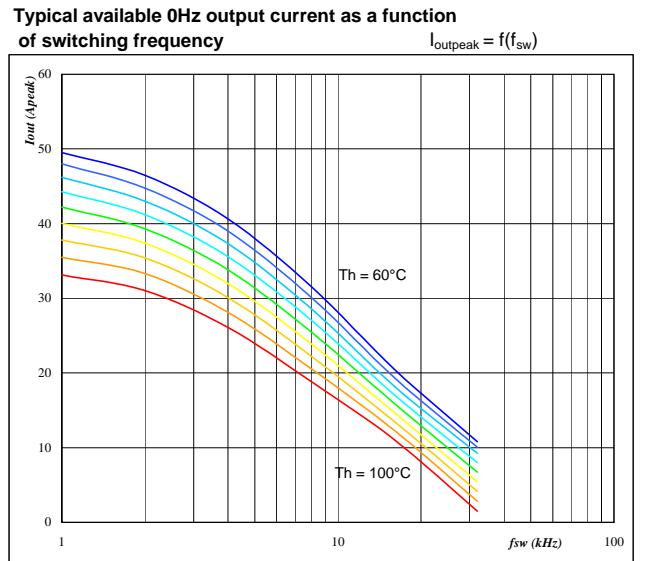
$T_j =$	150	°C
DC link =	600	V
T_h from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	

Figure 9 — Inverter

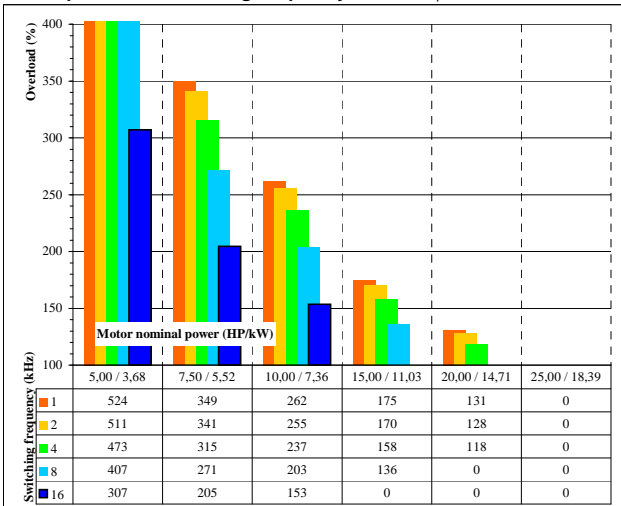**Typical available peak output power as a function of heatsink temperature** $P_{out}=f(T_h)$

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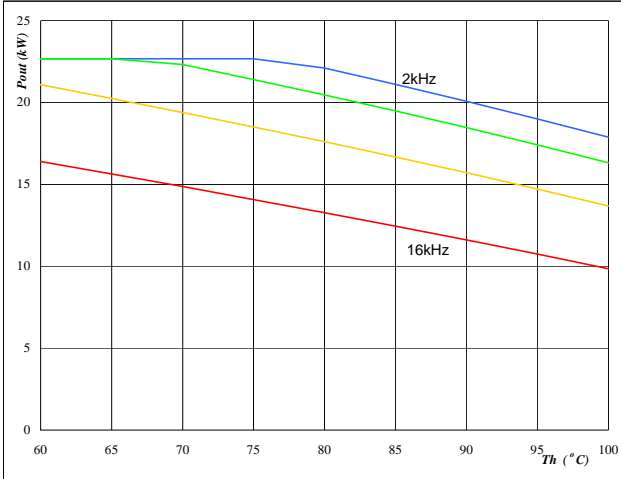
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 10 — Inverter

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

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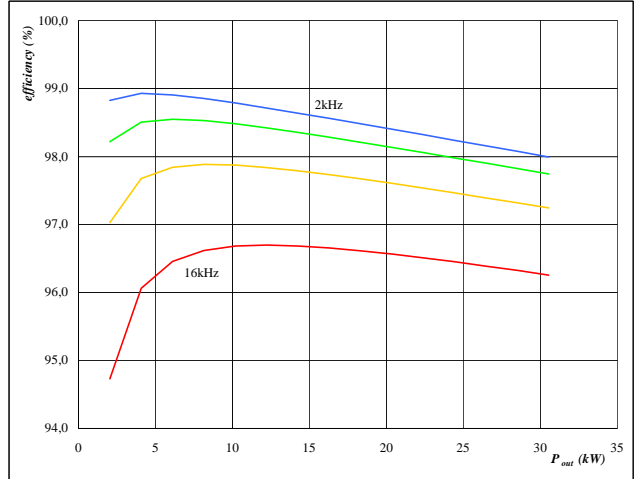
T_j =	150	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

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)	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	511	341	255	170	128	0
4	473	315	237	158	118	0
8	407	271	203	136	0	0
16	307	205	153	0	0	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	