flow1	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

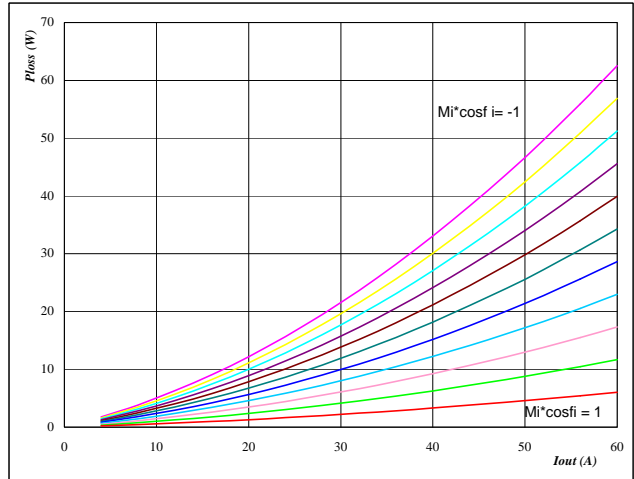$P_{loss} = f(I_{out})$

At
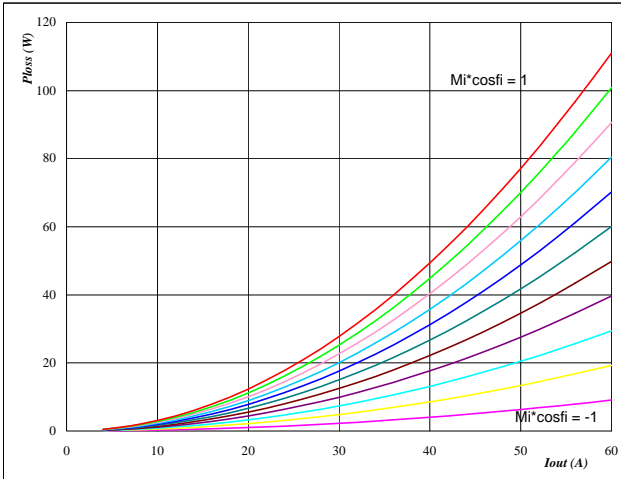
T_j = 151 ℃

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2	FWD

Typical average static loss as a function of output current

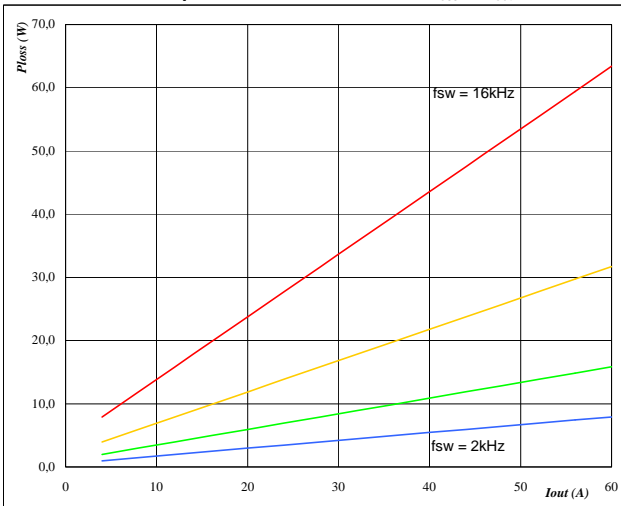$P_{loss} = f(I_{out})$

At

T_j = 151 ℃

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 3	IGBT

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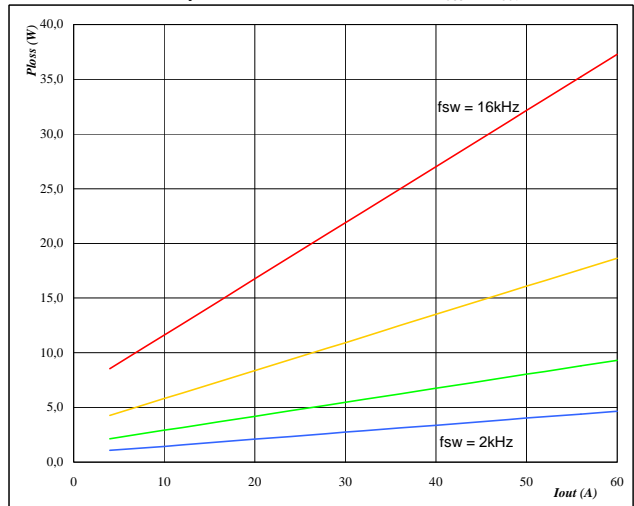

At

T_j = 151 ℃

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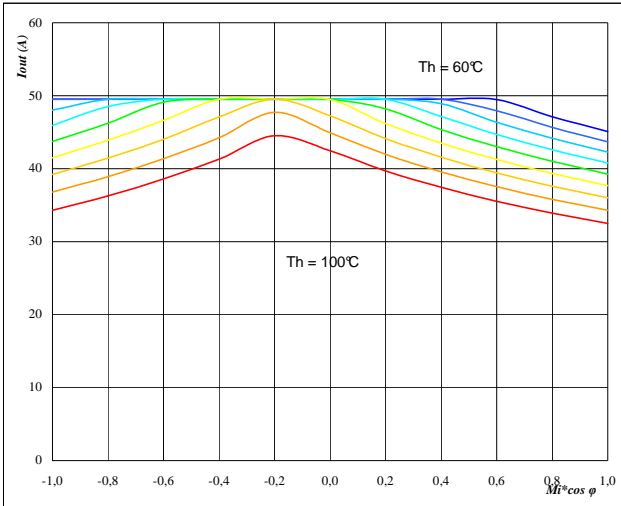

At

T_j = 151 ℃

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** $I_{out} = f(Mi*\cos φ)$

At

T_j =	151	°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
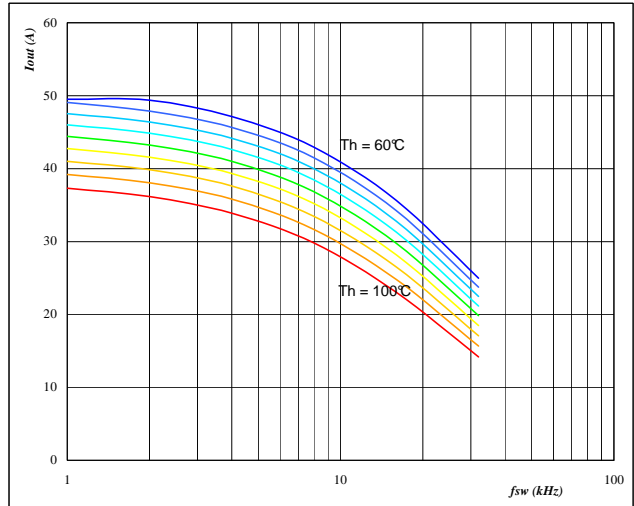
T_j =	151	°C
DC link =	600	V
Mi*cos φ =	0,8	
T_h from	60 °C to 100 °C in steps of 5 °C	

Figure 7	Phase

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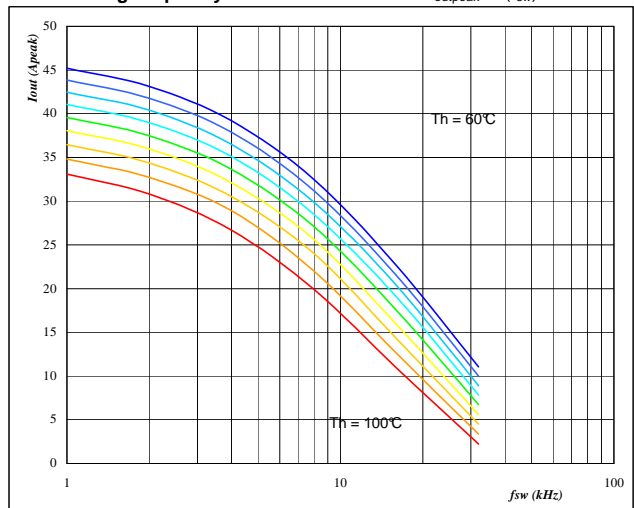Mi*cos φ and switching frequency** $I_{out} = f(f_{sw}, Mi*\cos φ)$

Iout (A)
- 37,0-40,0
- 34,0-37,0
- 31,0-34,0
- 28,0-31,0
- 25,0-28,0
- 22,0-25,0

At
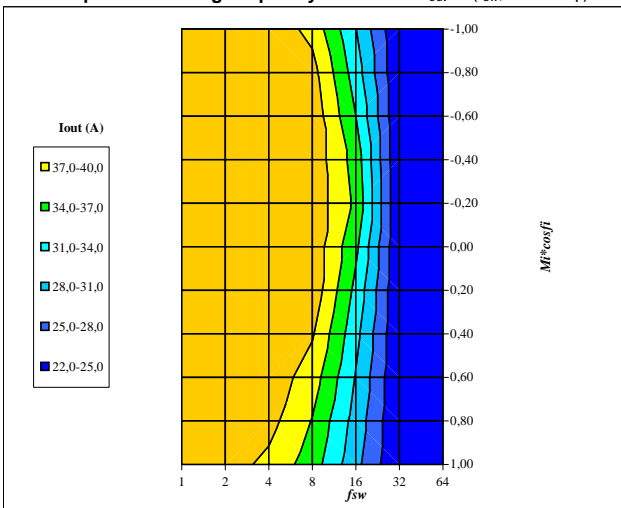
T_j =	151	°C
DC link =	600	V
T_h =	80	°C

Figure 8	Phase

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

At

T_j =	151	°C
DC link =	600	V
T_h from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	

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Figure 9 — Inverter

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

At
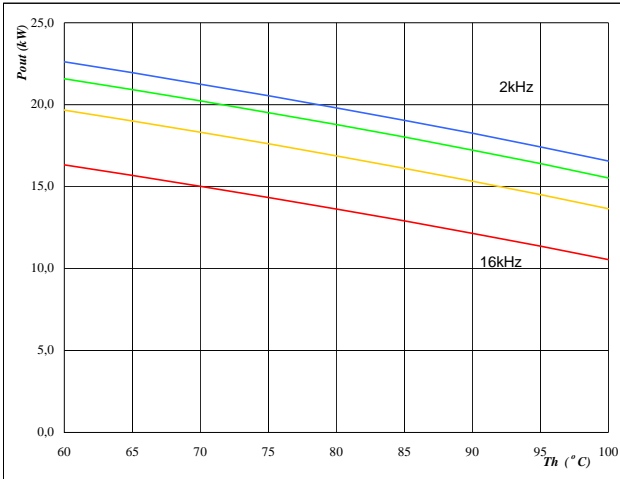
$T_j =$	151	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 10 — Inverter

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

At
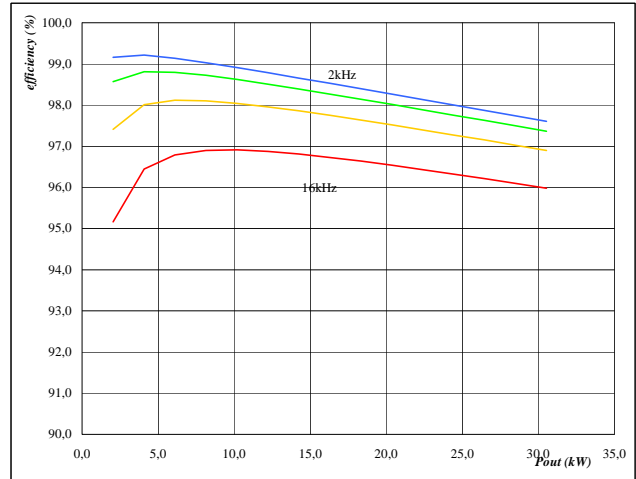
$T_j =$	151	°C
DC link =	600	V
Mi =	1	
cos φ=	0,80	
f_{sw} from	2 kHz to 16 kHz in steps of factor 2	

Figure 11 — Inverter

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

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	470	313	235	157	118	0
2	458	305	229	153	114	0
4	434	289	217	145	0	0
8	390	260	195	130	0	0
16	315	210	158	0	0	0

At
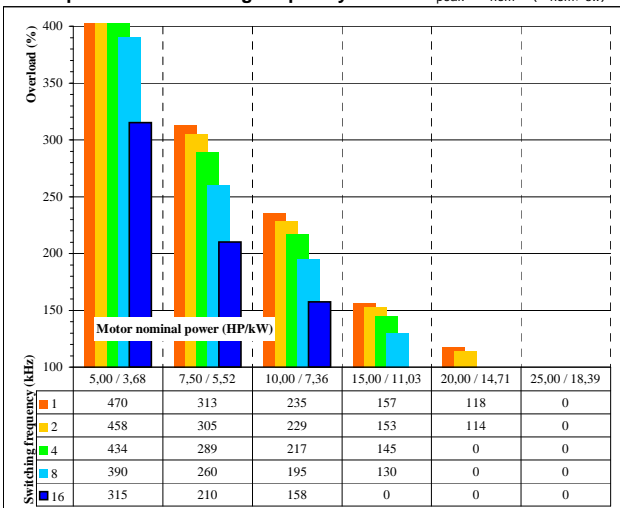
$T_j =$	151	°C
DC link =	600	V
Mi =	1	
cos φ=	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
$T_h =$	80	°C
Motor eff =	0,85	