flow PIM 0 — Output Inverter Application — 600 V / 6 A

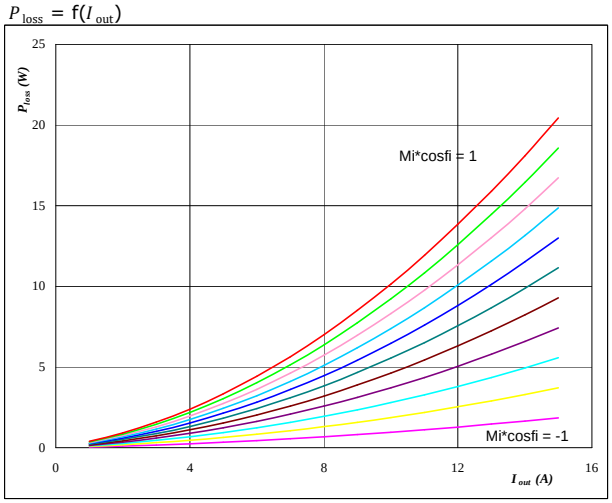
General conditions

3phase SPWM		
V_{GEon}	=	15 V
V_{GEoff}	=	0 V
R_{gon}	=	32 Ω
R_{goff}	=	16 Ω

Figure 1 IGBT

Typical average static loss as a function of output current

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



At

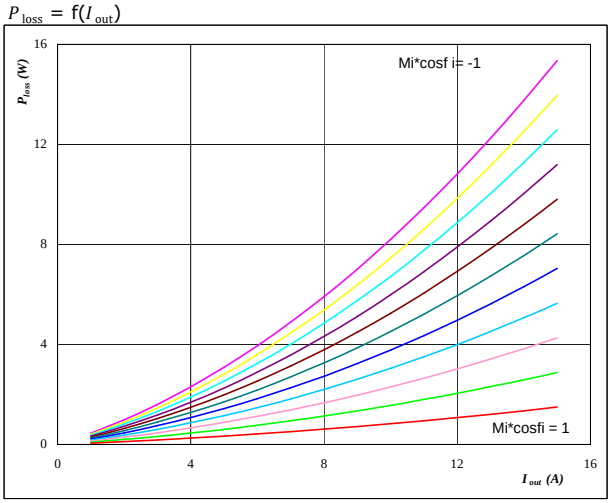
T_j = 125 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2 FWD

Typical average static loss as a function of output current

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



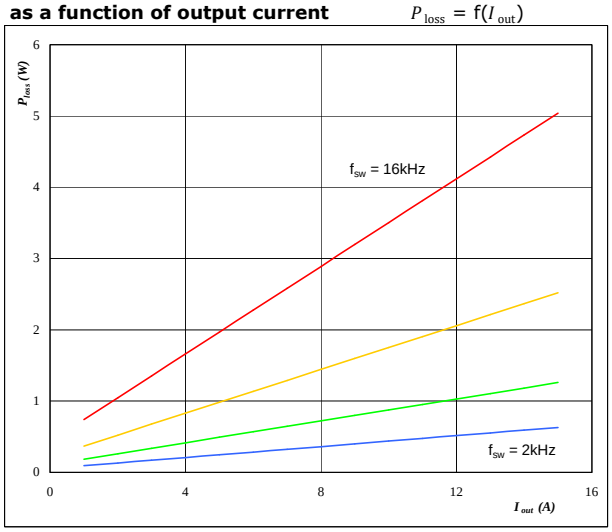
At

T_j = 125 °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

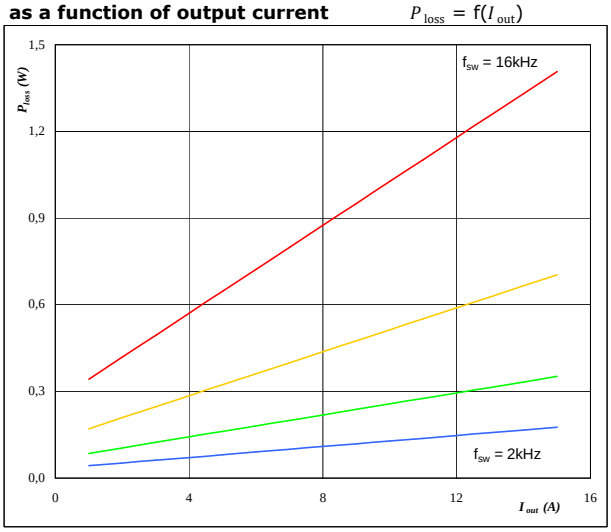
T_j = 125 °C

DC-link = 320 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

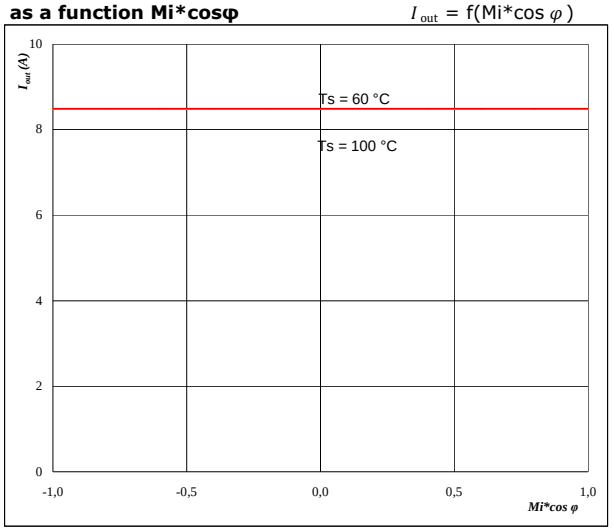
T_j = 125 °C

DC-link = 320 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)

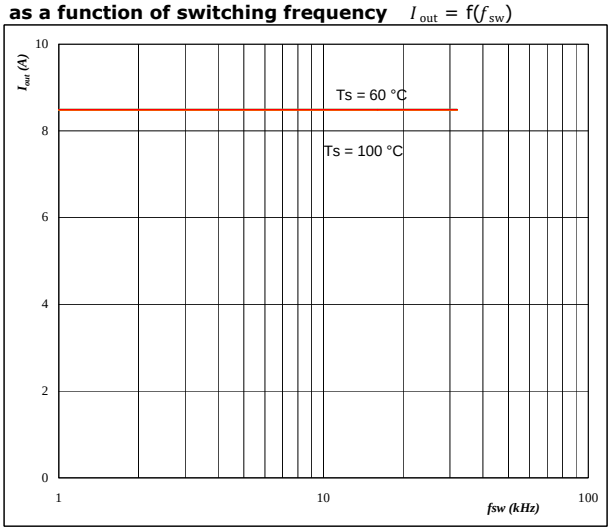


At

T_j =	125	°C
DC-link =	320	V
f_{sw} =	4	kHz
T_s 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})

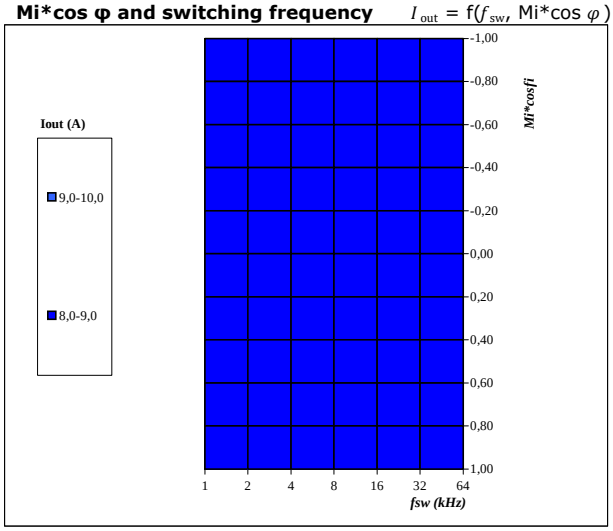


At

T_j =	125	°C
DC-link =	320	V
Mi*cos φ =	0,8	
T_s 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)

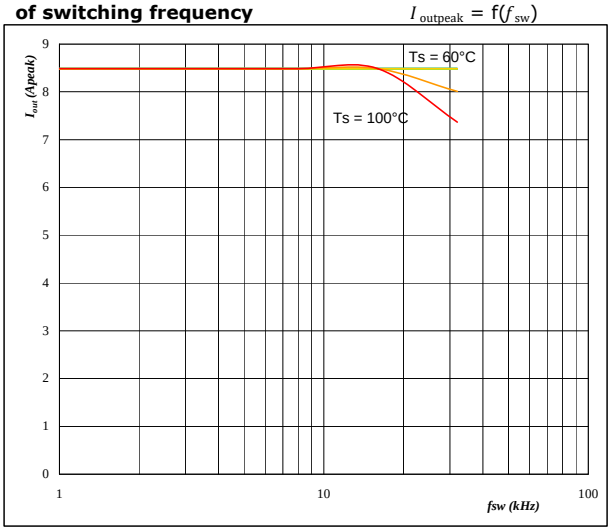


At

T_j =	125	°C
DC-link =	320	V
T_s =	80	°C

Figure 8 Phase

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

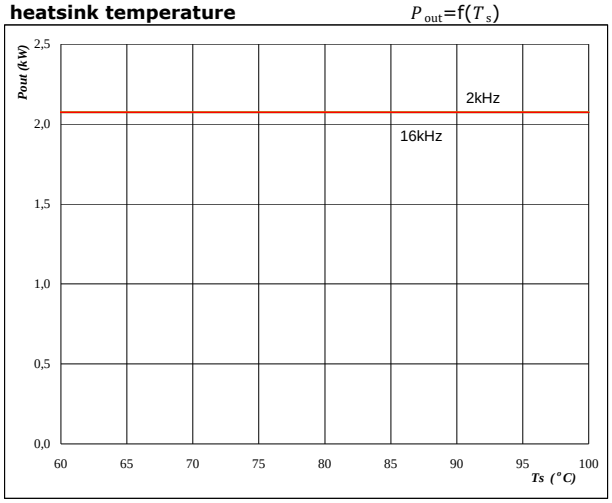


At

T_j =	125	°C
DC-link =	320	V
T_s 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 $P_{out}=f(T_s)$

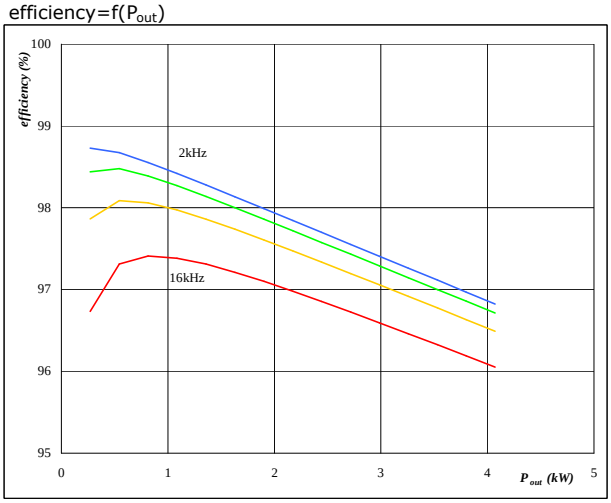


At

T_j =	125	°C
DC-link =	320	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})

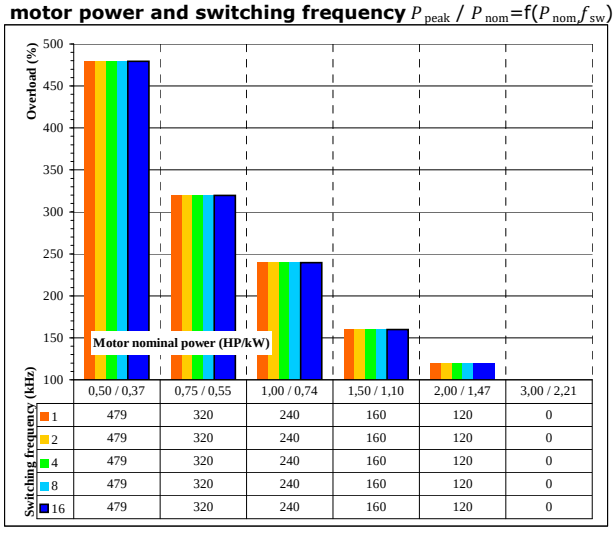


At

T_j =	125	°C
DC-link =	320	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)	0,50 / 0,37	0,75 / 0,55	1,00 / 0,74	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21
1	479	320	240	160	120	0
2	479	320	240	160	120	0
4	479	320	240	160	120	0
8	479	320	240	160	120	0
16	479	320	240	160	120	0

At

T_j =	125	°C
DC-link =	320	V
Mi =	1	
cos φ=	0,8	
f_{sw} from	1 kHz to 16kHz in steps of factor 2	
T_s =	80	°C
Motor eff =	0,85	