V23990-P639-A40
preliminary datasheet

flow90PIM 1	Output Inverter Application	1200V/8A

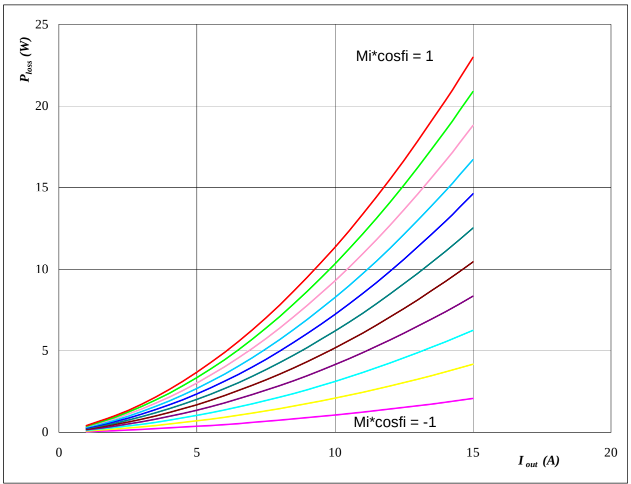
General conditions

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

Figure 1 IGBT

Typical average static loss as a function of output current

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



At

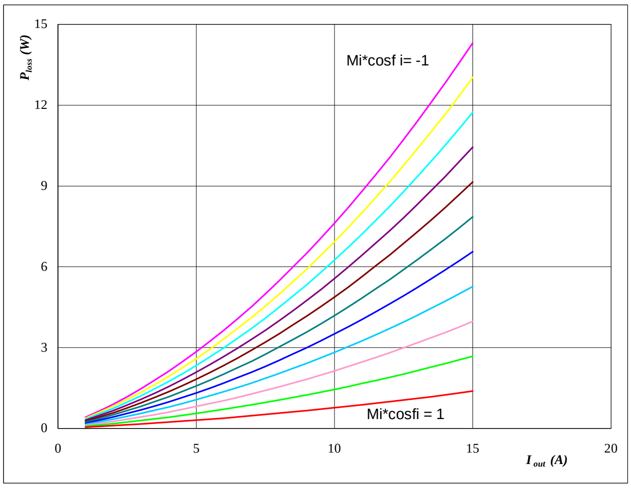
T_j = 150 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2 FWD

Typical average static loss as a function of output current

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



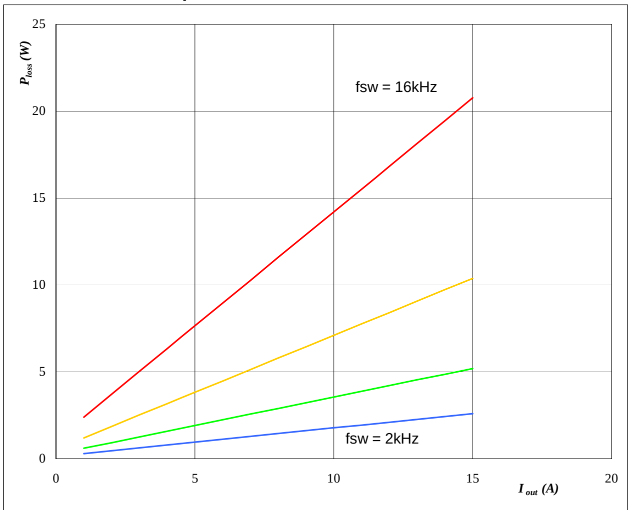
At

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

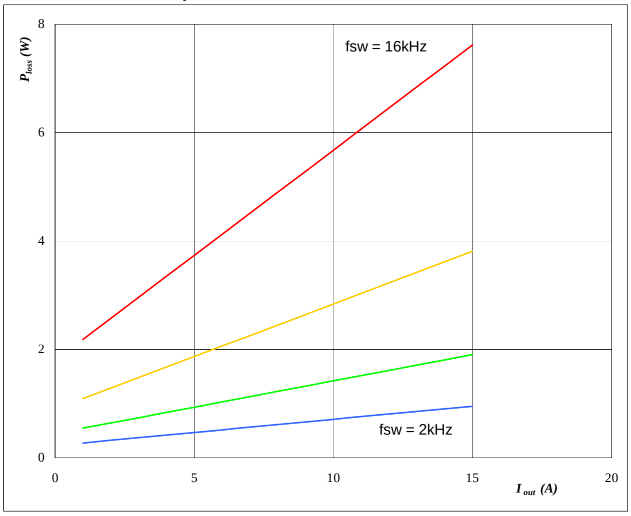
T_j = 150 °C

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

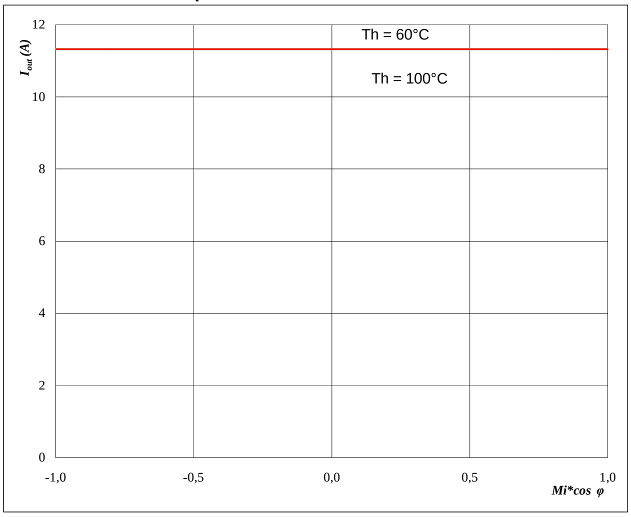
T_j = 150 °C

DC link = 600 V

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

Figure 5 — Phase

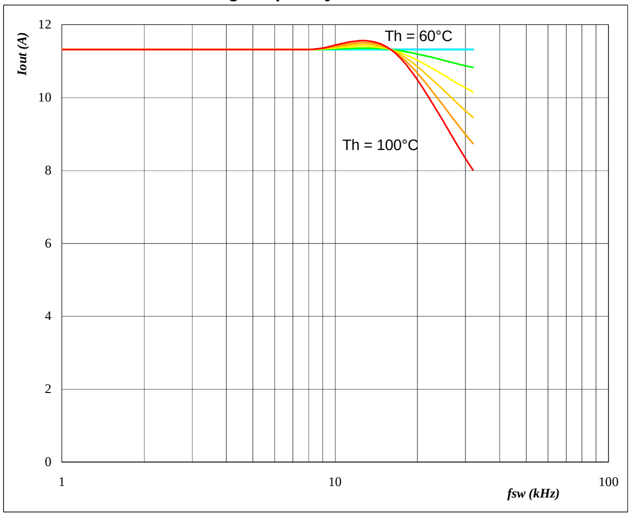
Typical available 50Hz output current as a function Mi*cosφ $I_{out} = f(Mi*\cos\varphi)$



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

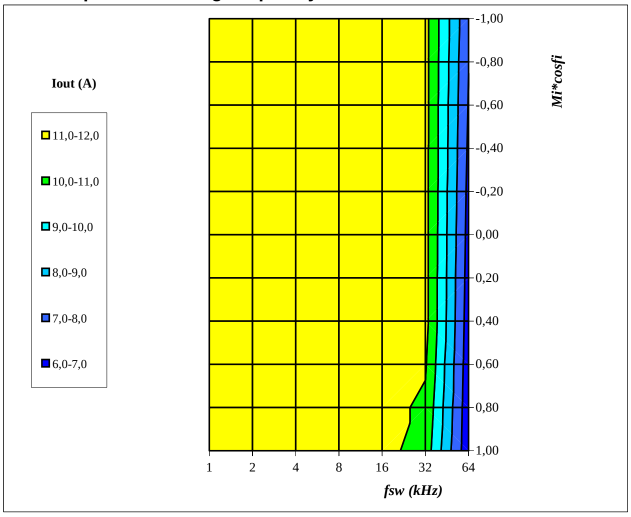
Typical available 50Hz output current as a function of switching frequency $I_{out} = f(f_{sw})$



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

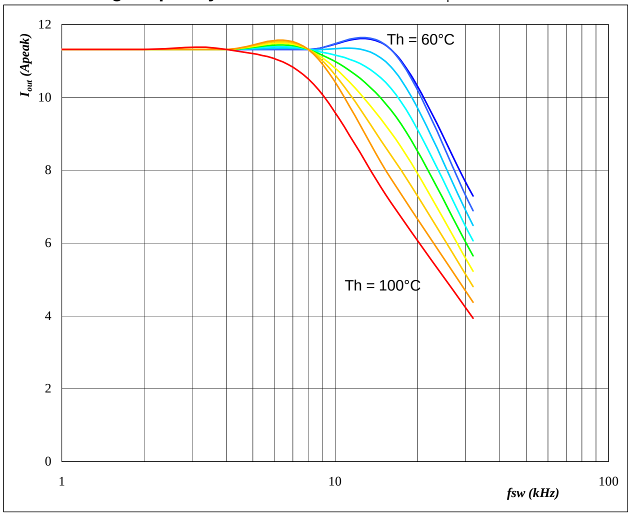
Typical available 50Hz output current as a function of Mi*cos φ and switching frequency $I_{out} = f(f_{sw}, Mi*\cos\varphi)$



At
T_j = 150 °C
DC link = 600 V
T_h = 80 °C

Figure 8 — Phase

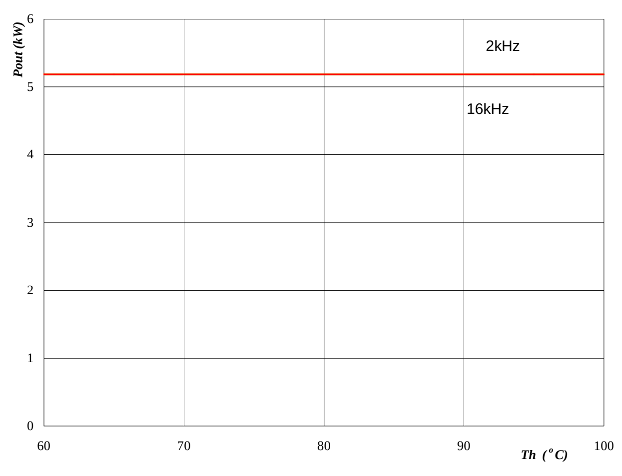
Typical available 0Hz output current as a function of switching frequency $I_{outpeak} = f(f_{sw})$



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 $P_{out}=f(T_h)$

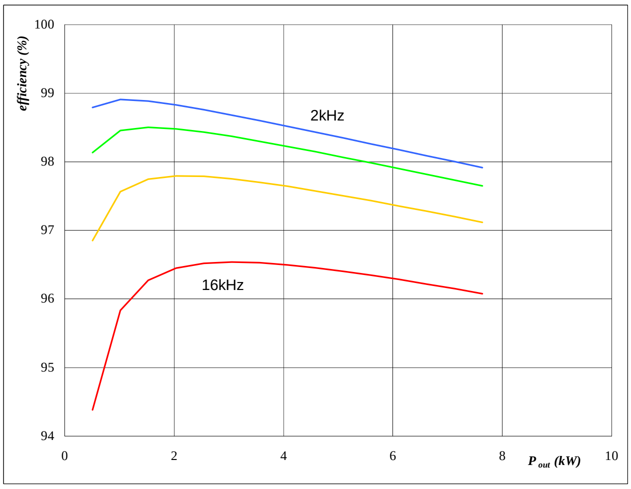


At

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=$f(P_{out})$

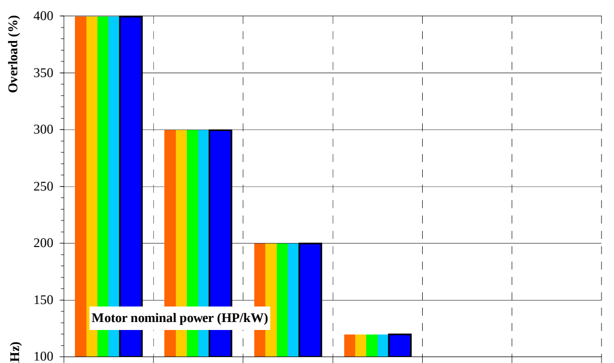


At

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)	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36
1	399	300	200	120	0	0
2	399	300	200	120	0	0
4	399	300	200	120	0	0
8	399	300	200	120	0	0
16	399	300	200	120	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	