

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

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

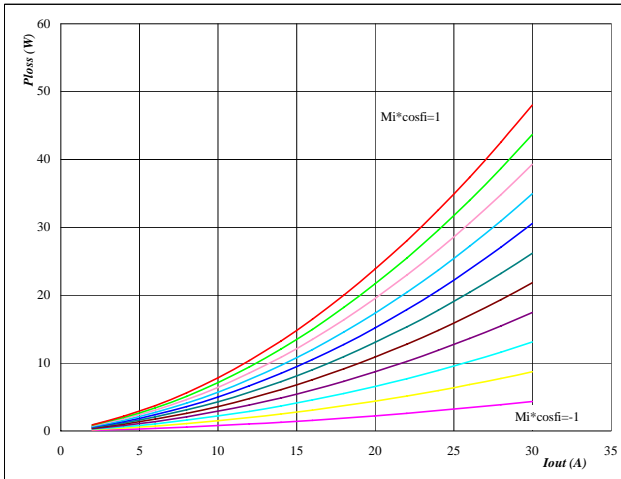

 $T_j = 125^\circ\text{C}$
 $M_i \cdot \cos\phi_i$ from -1 to 1 in steps of 0,2

Figure 2

FRED

Typical average static loss as a function of output current

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

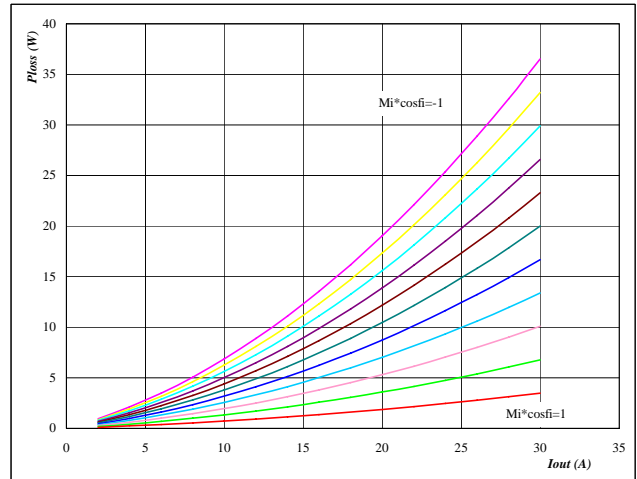
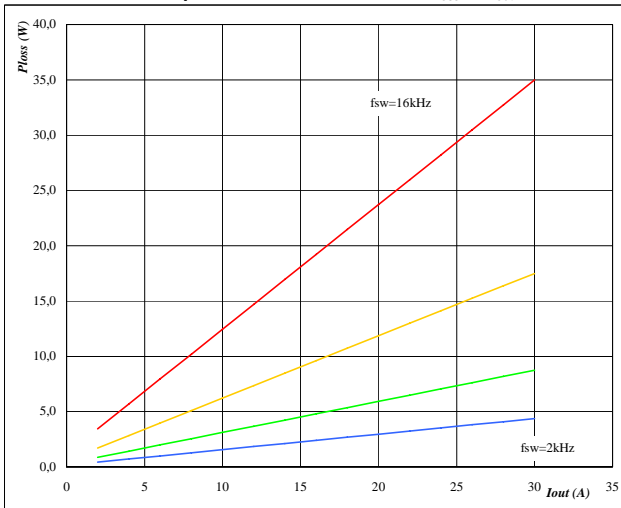

 $T_j = 125^\circ\text{C}$
 $M_i \cdot \cos\phi_i$ from -1 to 1 in steps of -0,2

Figure 3

IGBT

Typical average switching loss as a function of output current

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


 $T_j = 125^\circ\text{C}$

DC link = 600 V

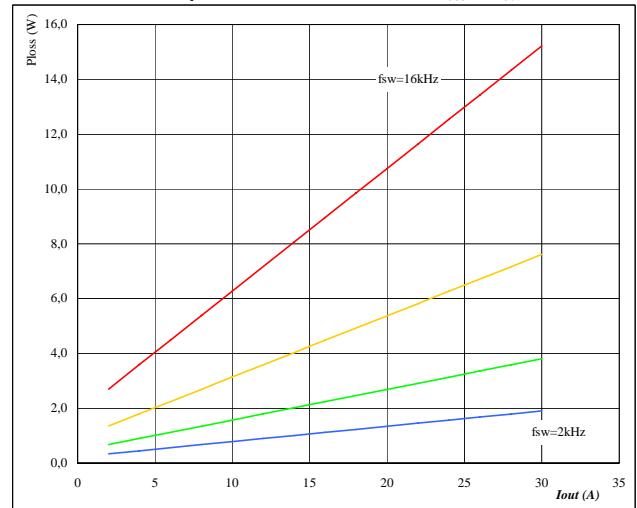
 f_{sw} from 2 kHz to 16 kHz in 2 steps

Figure 4

FRED

Typical average switching loss as a function of output current

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


 $T_j = 125^\circ\text{C}$

DC link = 600 V

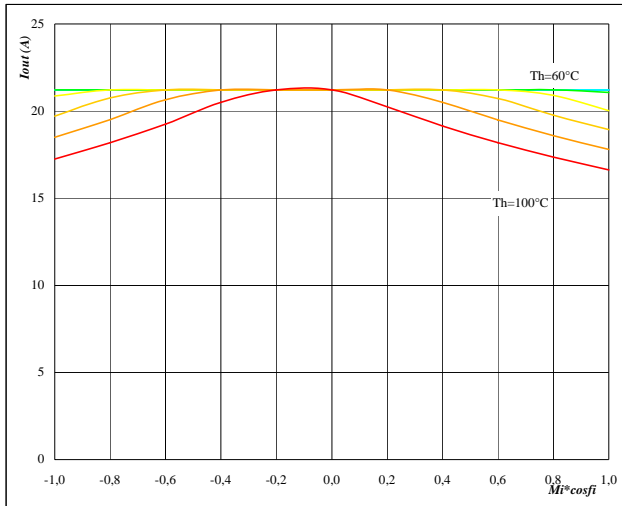
 f_{sw} from 2 kHz to 16 kHz in 2 steps

Output Inverter Application

Figure 5 Phase

Typical available 50Hz output current as a function $M_i \cdot \cos\phi_i$

$$I_{out} = f(M_i \cdot \cos\phi_i)$$

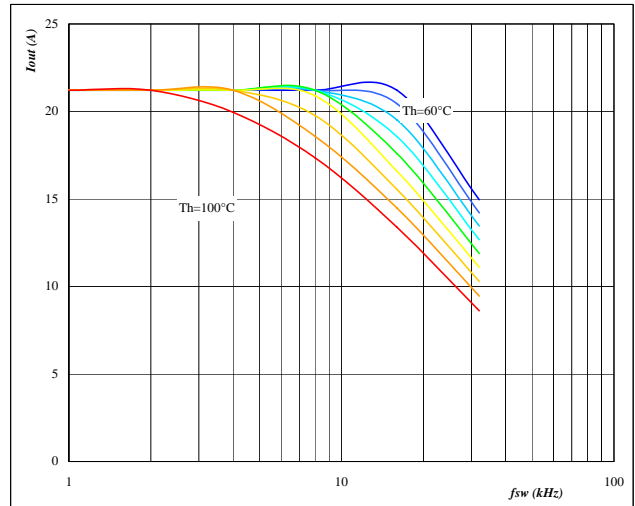


$T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $f_{sw} = 8 \text{ kHz}$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase

Typical available 50Hz output current as a function of switching frequency

$$I_{out} = f(f_{sw})$$

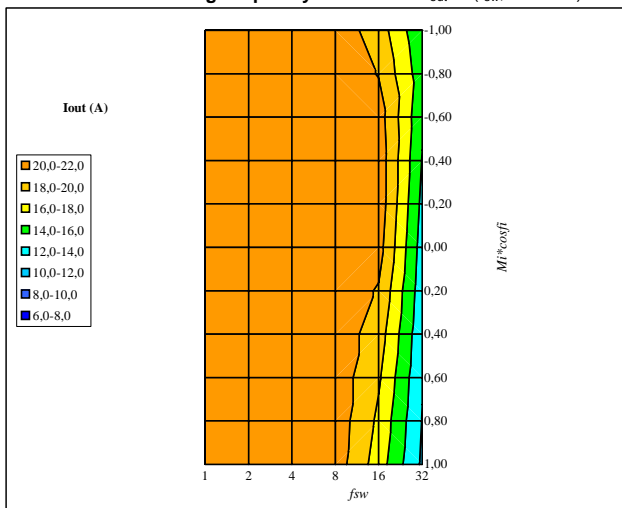


$T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i \cdot \cos\phi_i = 0,8$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase

Typical available 50Hz output current as a function of $M_i \cdot \cos\phi_i$ and switching frequency

$$I_{out} = f(f_{sw}, M_i \cdot \cos\phi_i)$$

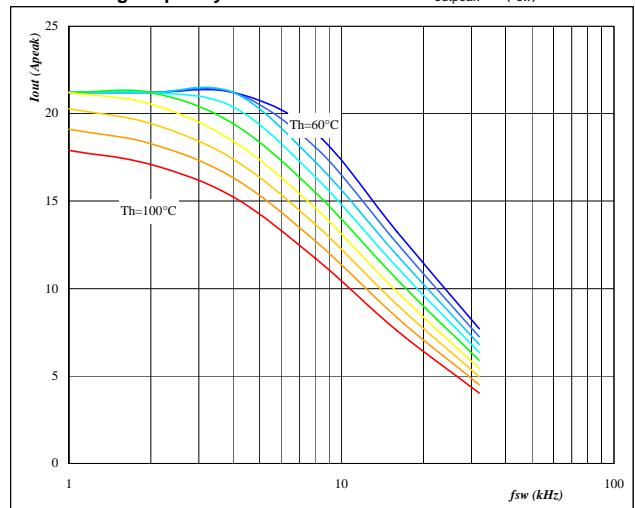


$T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $T_h = 80 \text{ } ^\circ\text{C}$

Figure 8 Phase

Typical available 0Hz output current as a function of switching frequency

$$I_{outpeak} = f(f_{sw})$$



$T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 Th from 60 °C to 100 °C in steps of 5 °C

Output Inverter Application

Figure 9 Inverter

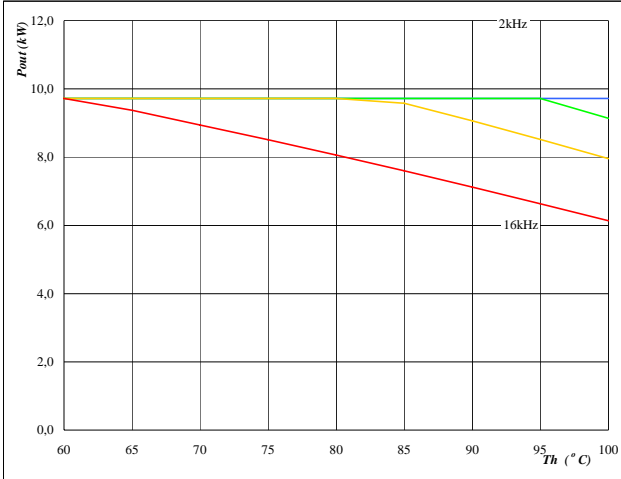
Typical available peak output power as a function of heatsink temperature
 $P_{out}=f(T_h)$

 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,80$
 fsw from 2 kHz to 16 kHz in 2 steps

Figure 10 Inverter

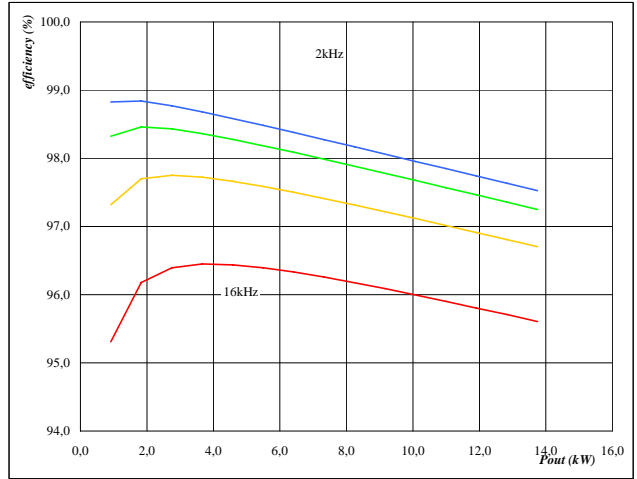
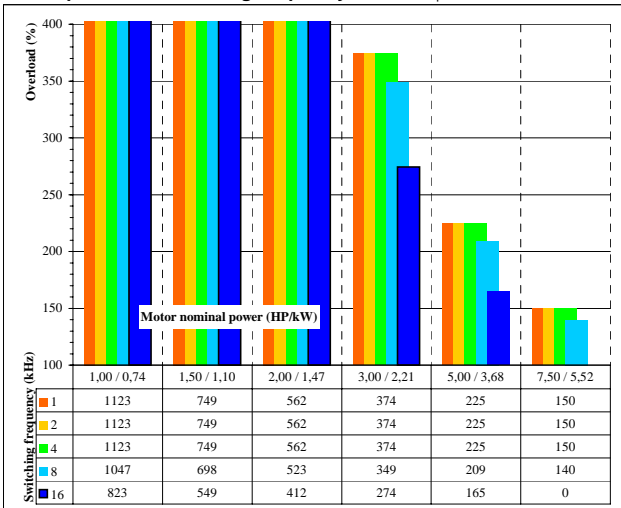
Typical efficiency as a function of output power
 $\text{efficiency}=f(P_{out})$

 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,80$
 fsw from 2 kHz to 16 kHz in 2 steps

Figure 11 Inverter

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

At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,8$
 fsw from 1 kHz to 16 kHz in 2 steps
 $T_h = 90 \text{ } ^\circ\text{C}$
 Motor eff = 0,85

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