



General conditions

3phase SPWM

$V_{GEon} = 15\text{ V}$

$V_{GEoff} = -15\text{ V}$

$R_{gon} = 8\ \Omega$

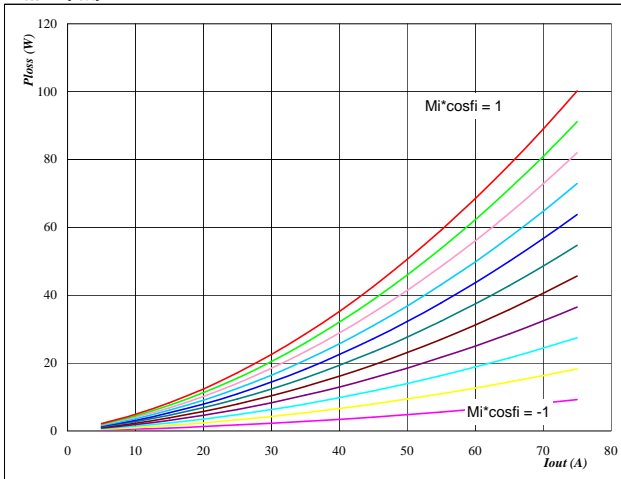
$R_{goff} = 8\ \Omega$

Figure 1

IGBT

Typical average static loss as a function of output current

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



At

$T_j = 150\ \text{°C}$

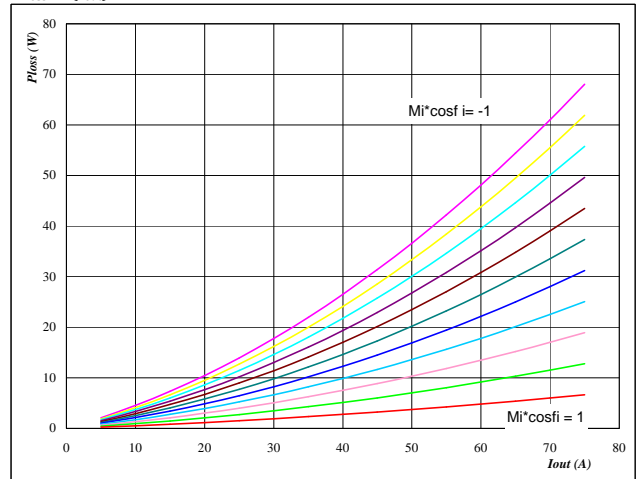
Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2

FWD

Typical average static loss as a function of output current

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



At

$T_j = 150\ \text{°C}$

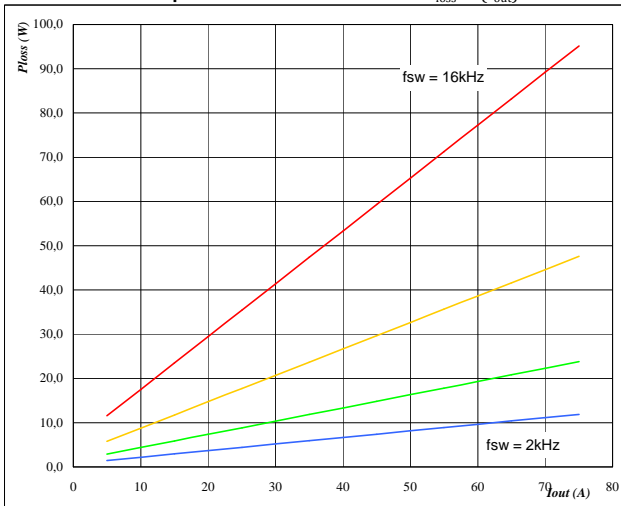
Mi*cosfi from -1 to 1 in steps of 0,2

Figure 3

IGBT

Typical average switching loss as a function of output current

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



At

$T_j = 150\ \text{°C}$

DC link = 600 V

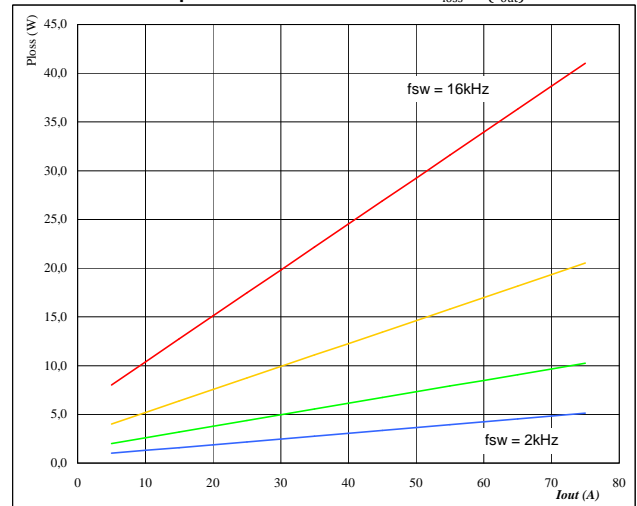
fsw from 2 kHz to 16 kHz in steps of factor 2

Figure 4

FWD

Typical average switching loss as a function of output current

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



At

$T_j = 150\ \text{°C}$

DC link = 600 V

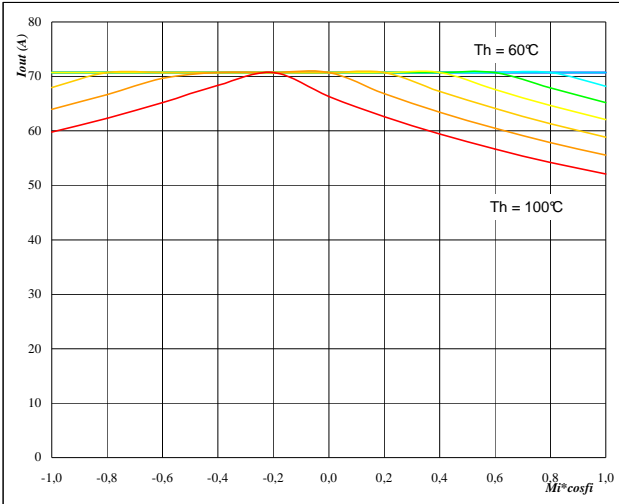
fsw from 2 kHz to 16 kHz in steps of factor 2



Figure 5 Phase

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

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

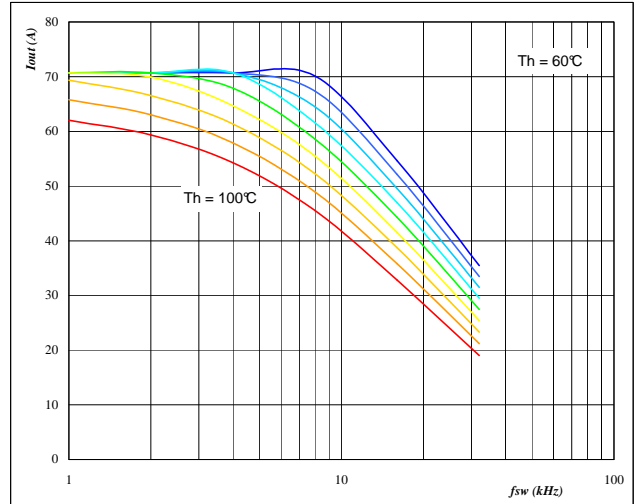


At
 $T_j = 150^\circ\text{C}$
 DC link = 600 V
 $f_{sw} = 4\text{ kHz}$
 T_h from 60°C to 100°C in steps of 5°C

Figure 6 Phase

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

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

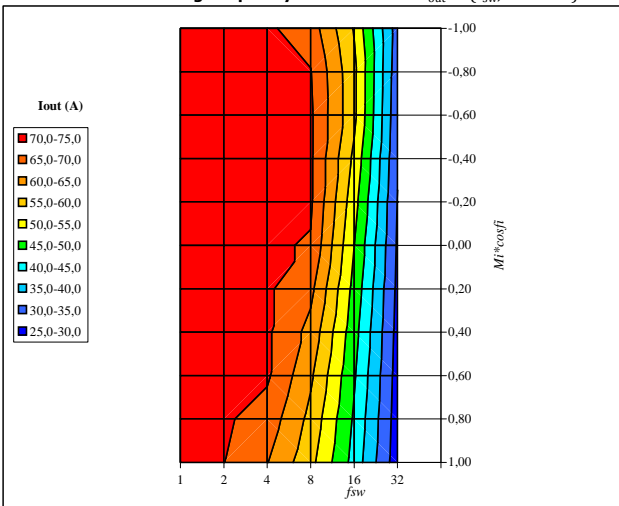


At
 $T_j = 150^\circ\text{C}$
 DC link = 600 V
 $M_i \cdot \cos \phi_i = 0,8$
 T_h from 60°C to 100°C in steps of 5°C

Figure 7 Phase

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

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

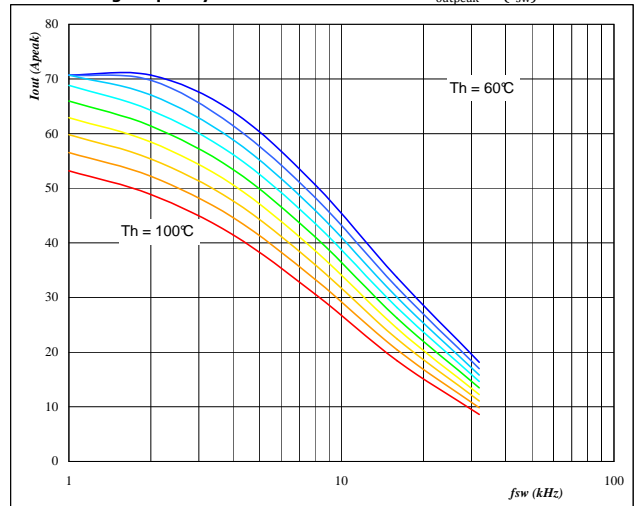


At
 $T_j = 150^\circ\text{C}$
 DC link = 600 V
 $T_h = 80^\circ\text{C}$

Figure 8 Phase

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

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

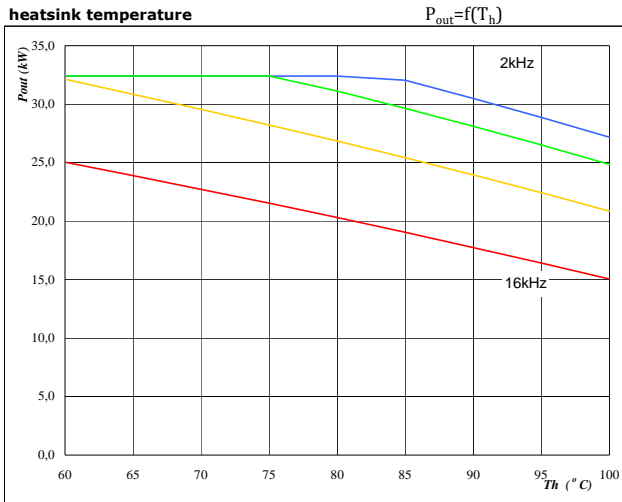


At
 $T_j = 150^\circ\text{C}$
 DC link = 600 V
 T_h from 60°C to 100°C in steps of 5°C



Figure 9 Inverter

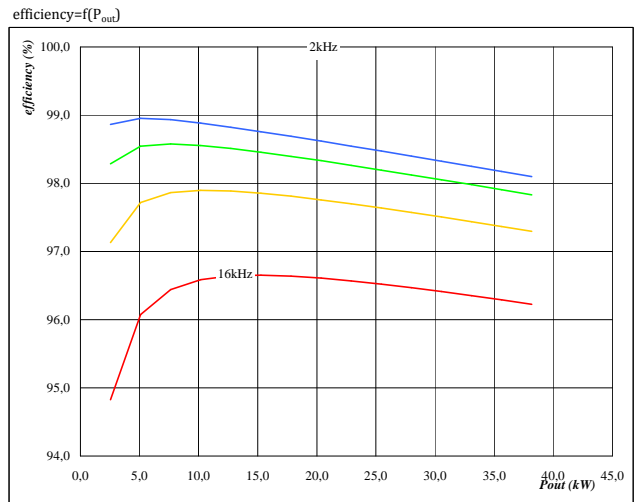
Typical available peak output power as a function of heatsink temperature



At
 $T_j = 150 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,80$
 fsw from 2 kHz to 16 kHz in steps of factor 2

Figure 10 Inverter

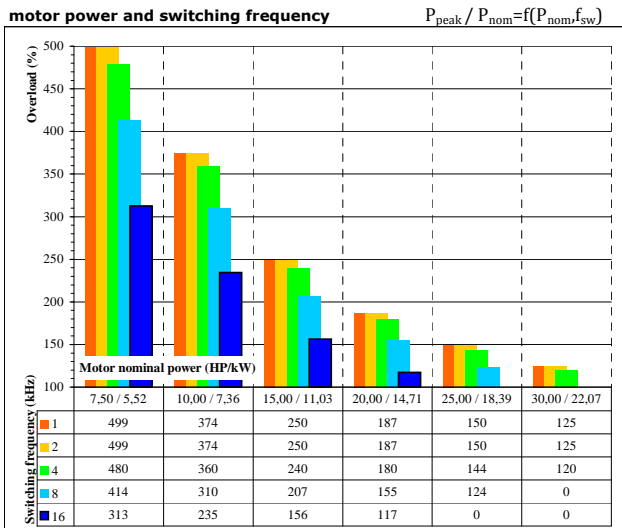
Typical efficiency as a function of output power



At
 $T_j = 150 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,80$
 fsw 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



At
 $T_j = 150 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 0,8$
 fsw from 1 kHz to 16 kHz in 2 steps
 $T_h = 80 \text{ } ^\circ\text{C}$
 Motor eff = 0,85