



General conditions

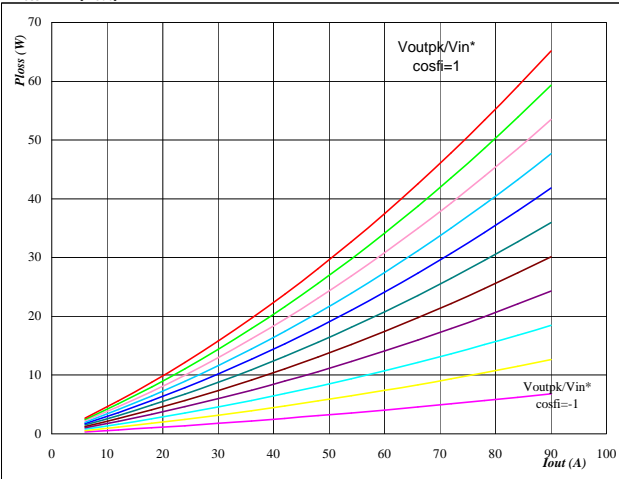
H Bridge SPWM

- $V_{GEon} = 15\text{ V}$
- $V_{GEoff} = -5\text{ V}$
- $R_{gon} = 4\ \Omega$
- $R_{goff} = 4\ \Omega$

Figure 1 IGBT

Typical average static loss as a function of output current

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

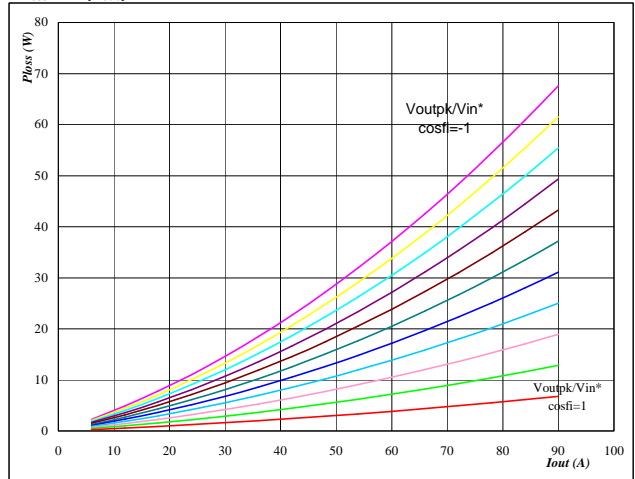


At
 $T_j = 125\text{ }^\circ\text{C}$
 Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2 FWD

Typical average static loss as a function of output current

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

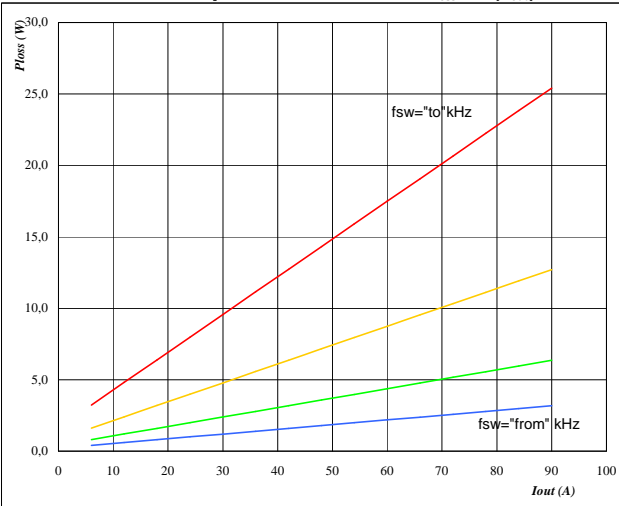


At
 $T_j = 125\text{ }^\circ\text{C}$
 Mi*cosfi from -1 to 1 in steps of 0,2

Figure 3 IGBT

Typical average switching loss as a function of output current

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

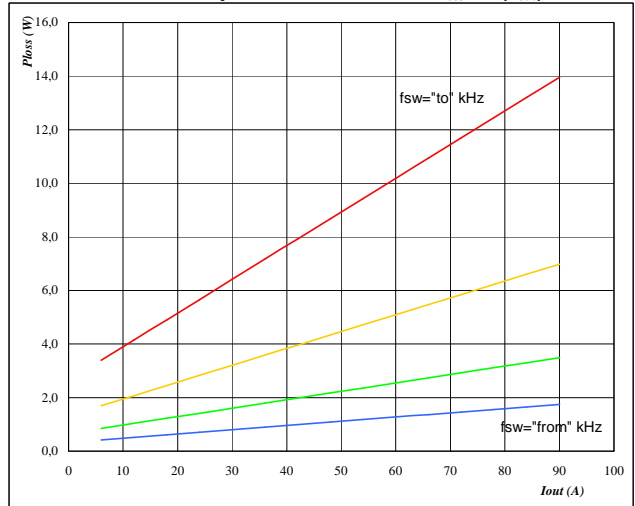


At
 $T_j = 125\text{ }^\circ\text{C}$
 DC-link = 320 V
 fsw from 4 kHz to 32 kHz in steps of factor 2

Figure 4 FWD

Typical average switching loss as a function of output current

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

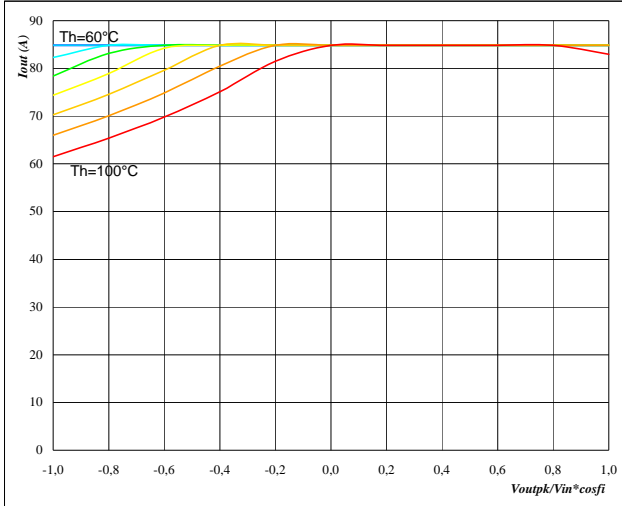


At
 $T_j = 125\text{ }^\circ\text{C}$
 DC-link = 320 V
 fsw from 4 kHz to 32 kHz in steps of factor 2



Figure 5 Phase

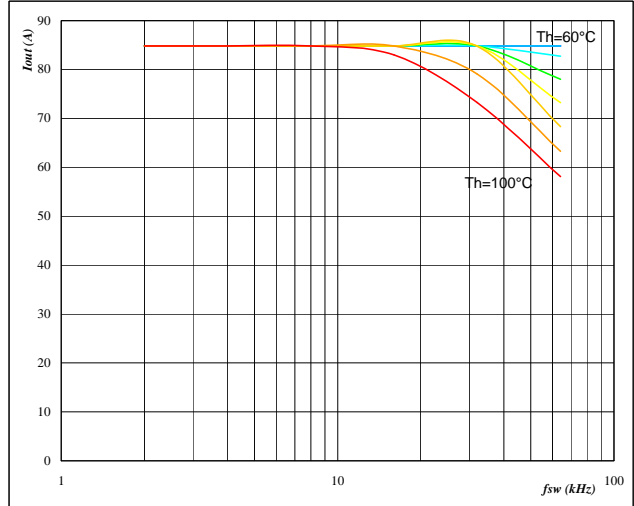
Typical available 50Hz output current as a function $Mi \cdot \cos\phi$ $I_{out} = f(Mi \cdot \cos\phi)$



At
 $T_j = 125$ °C
 DC-link = 320 V
 $f_{sw} = 16$ kHz
 T_h from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase

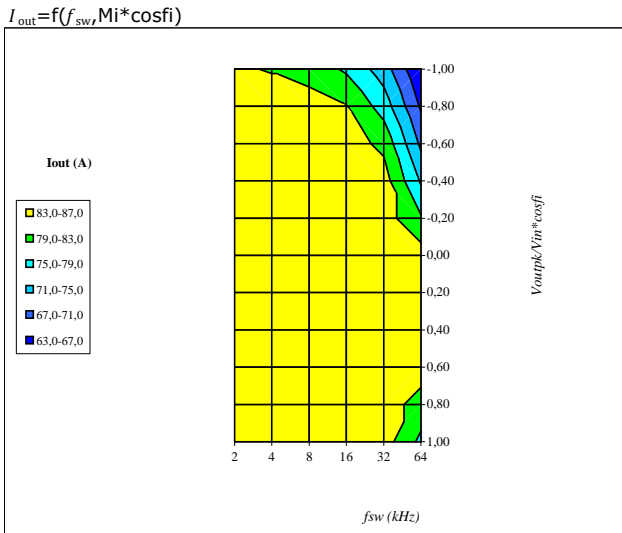
Typical available 50Hz output current as a function of switching frequency $I_{out} = f(f_{sw})$



At
 $T_j = 125$ °C
 DC-link = 320 V
 $Mi \cdot \cos\phi = 1$
 T_h from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase

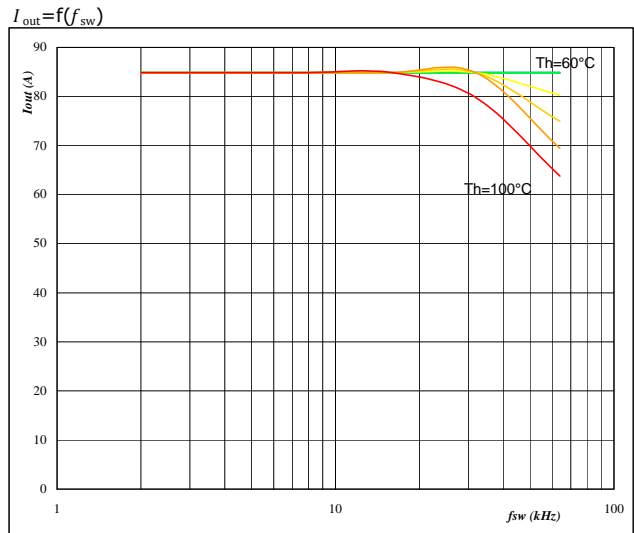
Typical available 50Hz output current as a function of $V_{outpk}/V_{in} \cdot \cos\phi$ and switching frequency $I_{out} = f(f_{sw}, Mi \cdot \cos\phi)$



At
 $T_j = 125$ °C
 DC-link = 320 V
 $T_h = 80$ °C

Figure 8 Phase

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



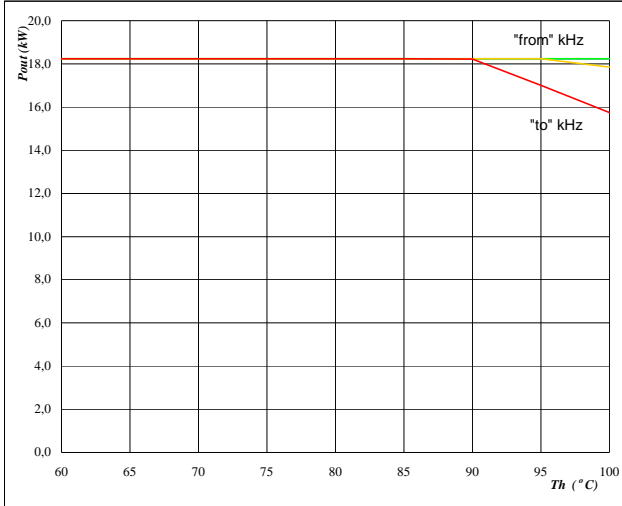
At
 $T_j = 125$ °C
 DC-link = 320 V
 $Mi \cdot \cos\phi = 0$
 T_h from 60 °C to 100 °C in steps of 5 °C



Figure 9 Inverter

Typical available peak output power as a function of heatsink temperature

$$P_{out} = f(T_{th})$$

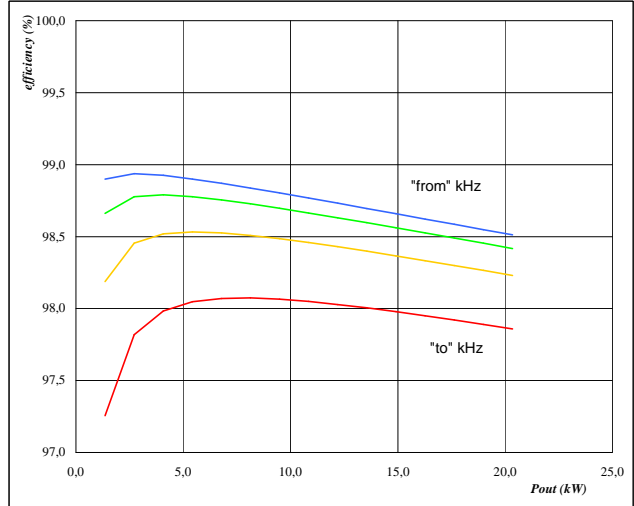


At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC-link = 320 V
 $M_i = 1$
 $\cos\phi_i = 1$
 fsw from 4 kHz to 32 kHz in steps of factor 2

Figure 10 Inverter

Typical efficiency as a function of output power

$$\text{efficiency} = f(P_{out})$$



At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC-link = 320 V
 $M_i = 1$
 $\cos\phi_i = 1$
 fsw from 4 kHz to 32 kHz in steps of factor 2