



General conditions

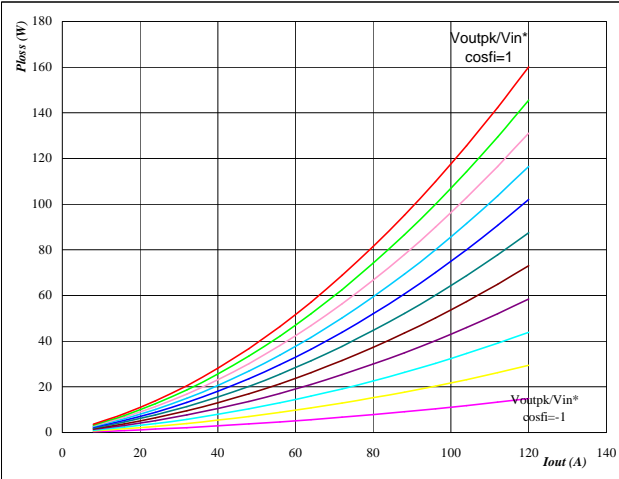
H Bridge SPWM

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

Figure 1 IGBT

Typical average static loss as a function of output current

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

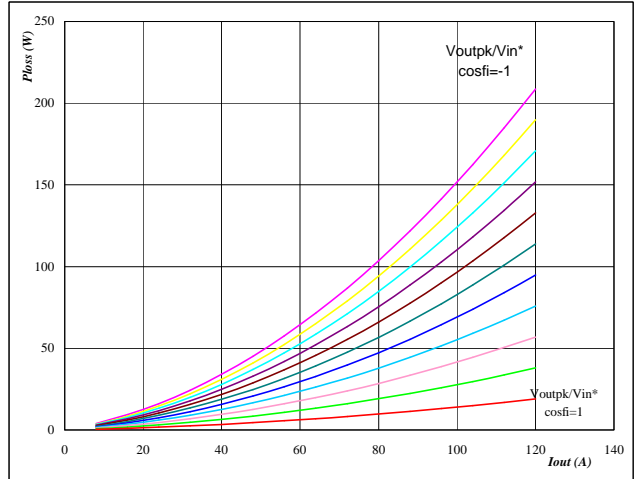


At
 $T_j = 125 \text{ }^\circ\text{C}$
 Mi*cosfi from -1 to 1 in steps of 0,2

Figure 2 FWD

Typical average static loss as a function of output current

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

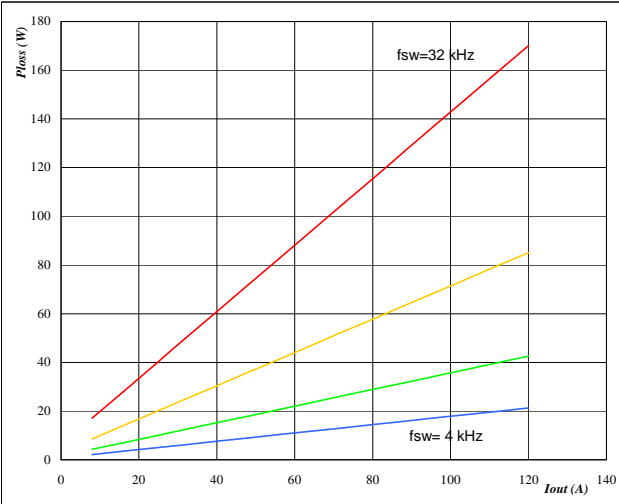


At
 $T_j = 125 \text{ }^\circ\text{C}$
 Mi*cosfi from -1 to 1 in steps of 0,2

Figure 3 IGBT

Typical average switching loss as a function of output current

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

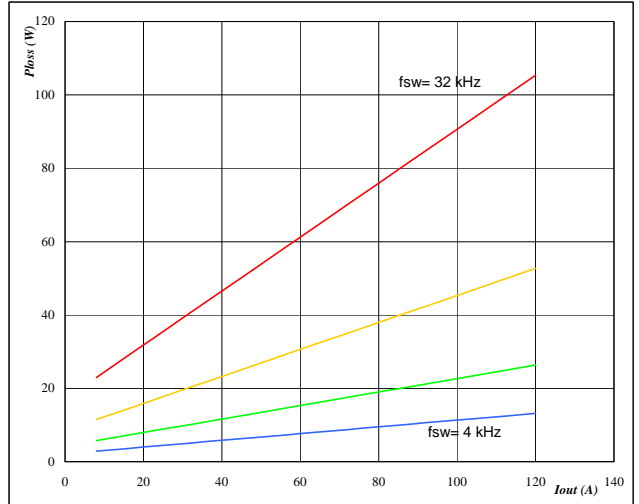


At
 $T_j = 125 \text{ }^\circ\text{C}$
 DC link = 600 V
 fsw from 4 kHz to 32 kHz in steps of factor 2

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 = 600 V
 fsw from 4 kHz to 32 kHz in steps of factor 2



fastPACK 1 H

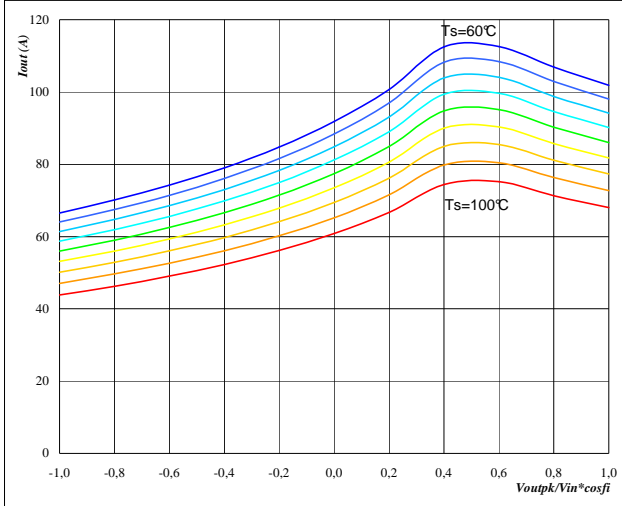
Output Inverter Application

1200 V / 80 A

Figure 5 Phase

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

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

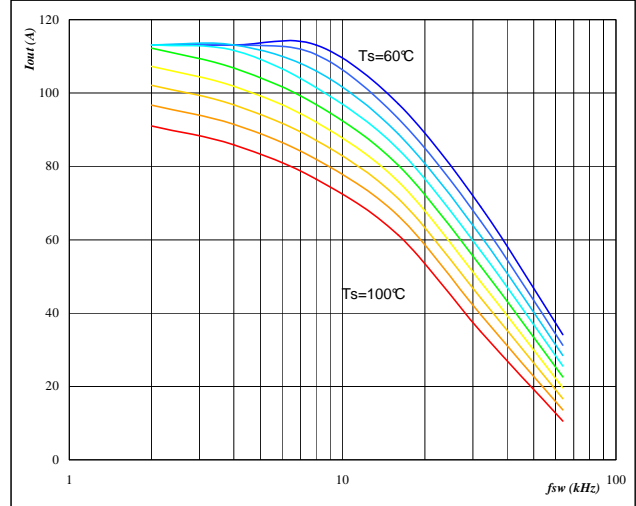


At
 $T_j = 125 \text{ } ^\circ\text{C}$
DC link = 600 V
 $f_{sw} = 8 \text{ kHz}$
Ts from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase

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

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

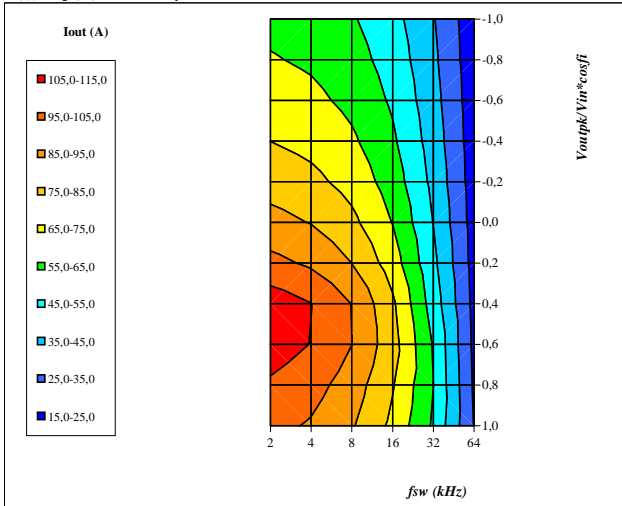


At
 $T_j = 125 \text{ } ^\circ\text{C}$
DC link = 600 V
 $Mi \cdot \cos\phi_i = 1$
Ts from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase

Typical available 50Hz output current as a function of $V_{outpk}/V_{in} \cdot \cos\phi_i$ and switching frequency

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

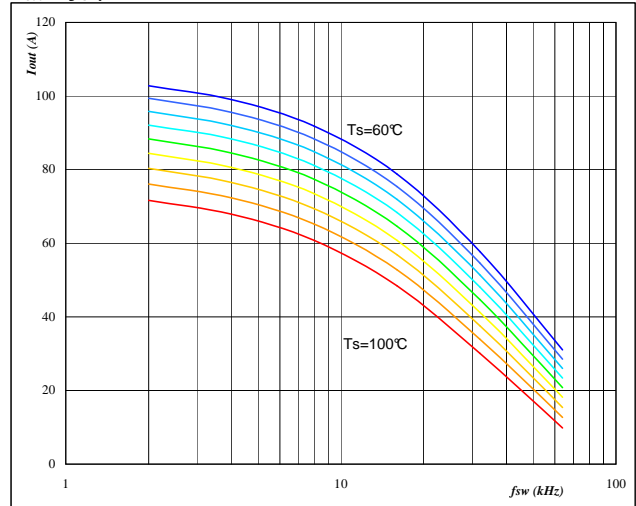


At
 $T_j = 125 \text{ } ^\circ\text{C}$
DC link = 600 V
 $T_s = 80 \text{ } ^\circ\text{C}$

Figure 8 Phase

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

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



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

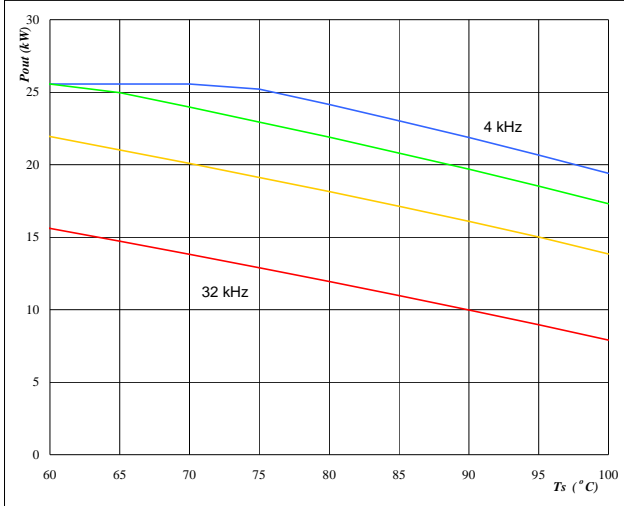


fastPACK 1 H Output Inverter Application 1200 V / 80 A

Figure 9 Inverter

Typical available peak output power as a function of heatsink temperature

$$P_{out} = f(T_s)$$

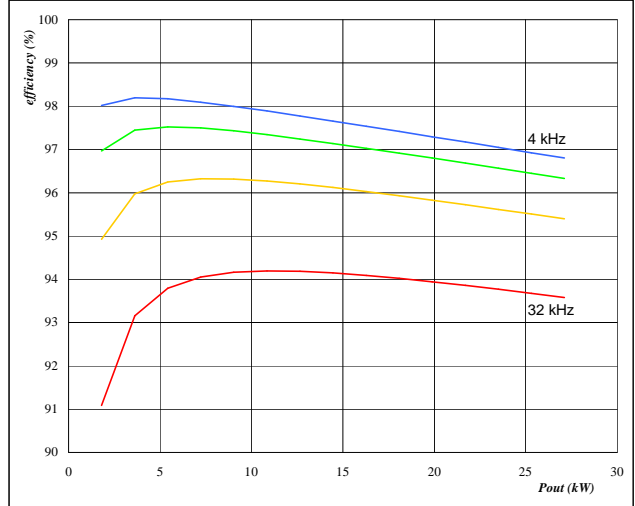


At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 600 V
 $M_i = 1$
 $\cos\phi_i = 1$
 fsw from 4 kHz to 32 kHz in steps of factor 2

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 = 600 V
 $M_i = 1$
 $\cos\phi_i = 1$
 fsw from 4 kHz to 32 kHz in steps of factor 2