

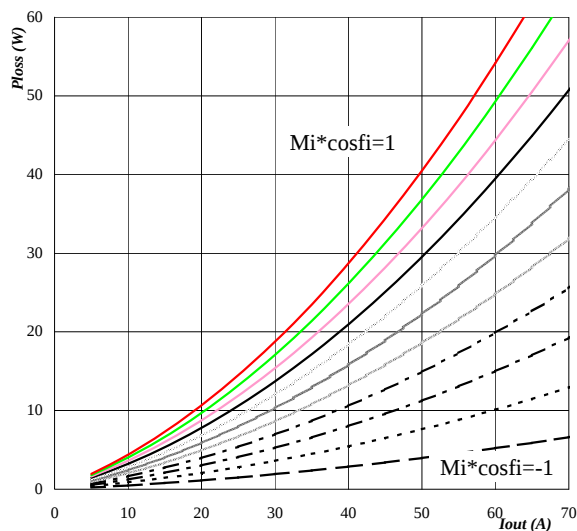
Output inverter application

General conditions: 3 phase SPWM, $V_{geon} = 15\text{ V}$
 $V_{geoff} = -15\text{ V}$

$R_{gon} = 18\text{ Ohm}$

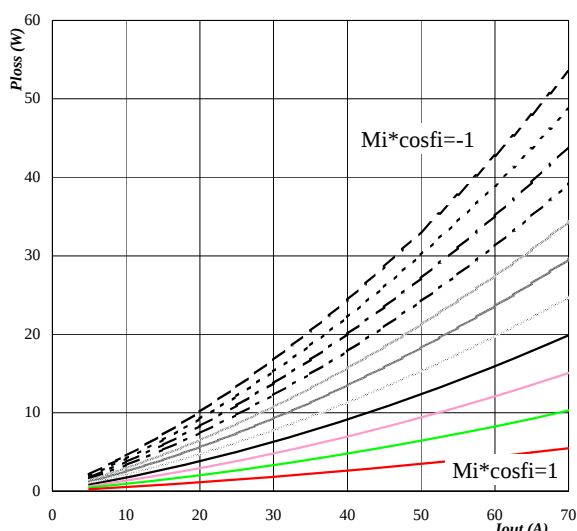
$R_{goff} = 18\text{ Ohm}$

Figure 1. Typical average static loss as a function of output current
IGBT $P_{loss} = f(I_{out})$



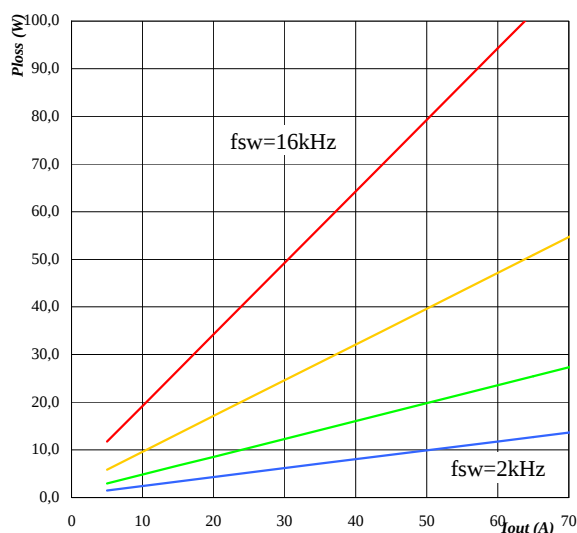
Conditions: $T_j = 125^\circ\text{C}$
Modulation index * $\cos\phi_i$
parameter $M_i \cdot \cos\phi_i$ from -1,00 to 1,00
in 0,20 steps

Figure 2. Typical average static loss as a function of output current
FRED $P_{loss} = f(I_{out})$



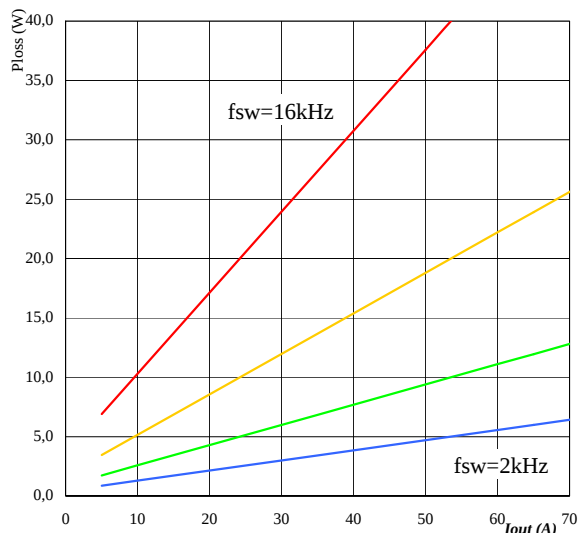
Conditions: $T_j = 125^\circ\text{C}$
Modulation index * $\cos\phi_i$
parameter $M_i \cdot \cos\phi_i$ from -1,00 to 1,00
in 0,20 steps

Figure 3. Typical average switching loss as a function of output current
IGBT $P_{loss} = f(I_{out})$



Conditions: $T_j = 125^\circ\text{C}$
DC link = 600 V
Switching freq. f_{sw} from 2 kHz to 16 kHz
parameter f_{sw} in * 2 steps

Figure 4. Typical average switching loss as a function of output current
FRED $P_{loss} = f(I_{out})$



Conditions: $T_j = 125^\circ\text{C}$
DC link = 600 V
Switching freq. f_{sw} from 2 kHz to 16 kHz
parameter f_{sw} in * 2 steps

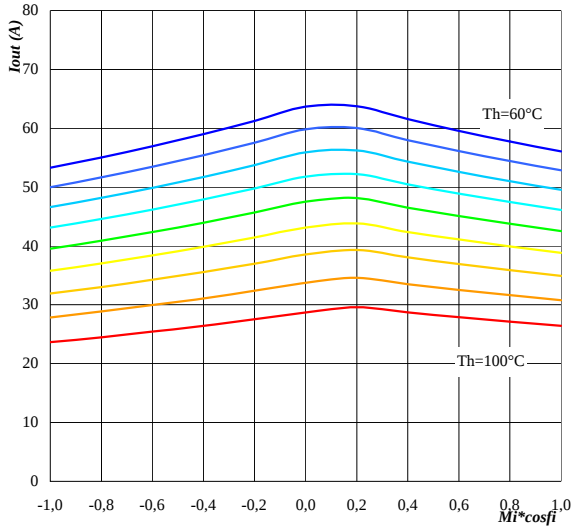
Output inverter application

General conditions: 3 phase SPWM, $V_{geon} = 15\text{ V}$
 $V_{geoff} = -15\text{ V}$

$R_{gon} = 18\text{ Ohm}$ $R_{goff} = 18\text{ Ohm}$

Figure 5. Typical available 50Hz output current as a function of $Mi \cdot \cos\phi_i$

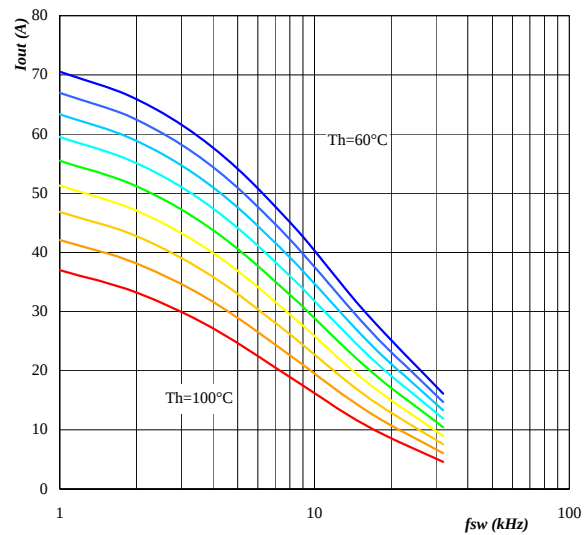
Phase $I_{out} = f(Mi \cdot \cos\phi_i)$



Conditions: $T_j = 125^\circ\text{C}$
DC link = 600 V
 $f_{sw} = 4\text{ kHz}$
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 6. Typical available 50Hz output current as a function of switching frequency

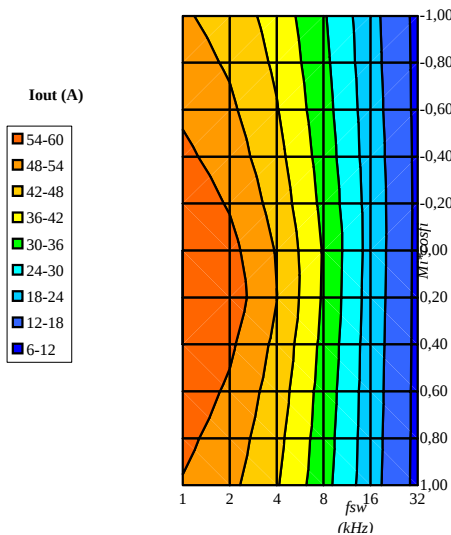
Phase $I_{out} = f(f_{sw})$



Conditions: $T_j = 125^\circ\text{C}$
DC link = 600 V
 $Mi \cdot \cos\phi_i = 0,8$
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Figure 7. Typical available 50Hz output current as a function of $Mi \cdot \cos\phi_i$ and f_{sw}

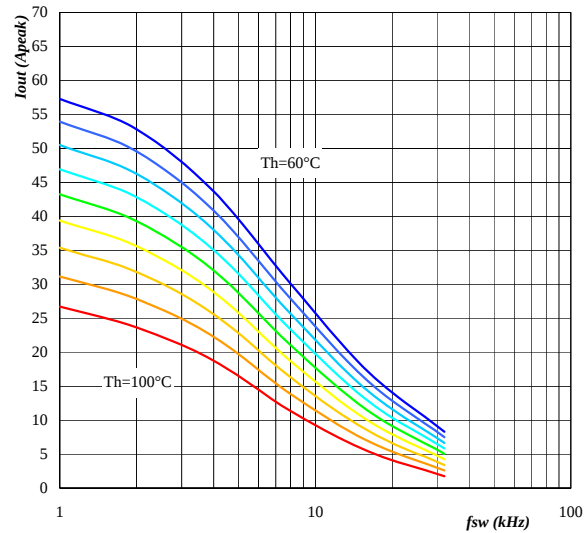
Phase $I_{out} = f(f_{sw}, Mi \cdot \cos\phi_i)$



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

Figure 8. Typical available 0Hz output current as a function of switching frequency

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



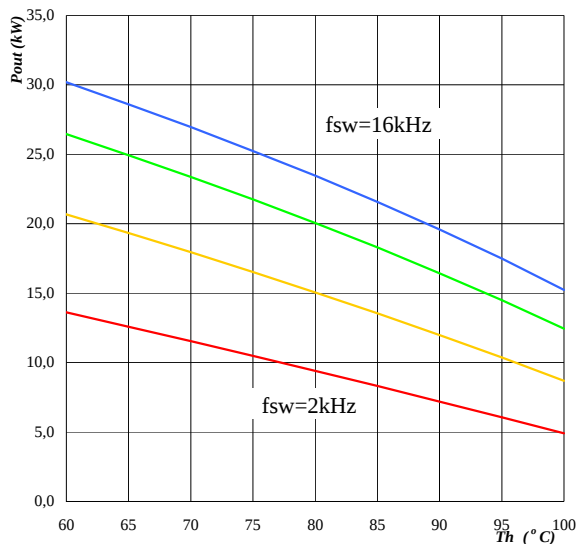
Conditions: $T_j = 125^\circ\text{C}$
DC link = 600 V
Heatsink temp. Th from 60 °C to 100 °C
parameter in 5 °C steps

Output inverter application

General conditions: 3 phase SPWM, $V_{geon}= 15\text{ V}$
 $V_{geoff}= -15\text{ V}$

Figure 9. Typical available electric peak output power as a function of heatsink temperature

Inverter $P_{out}=f(T_h)$



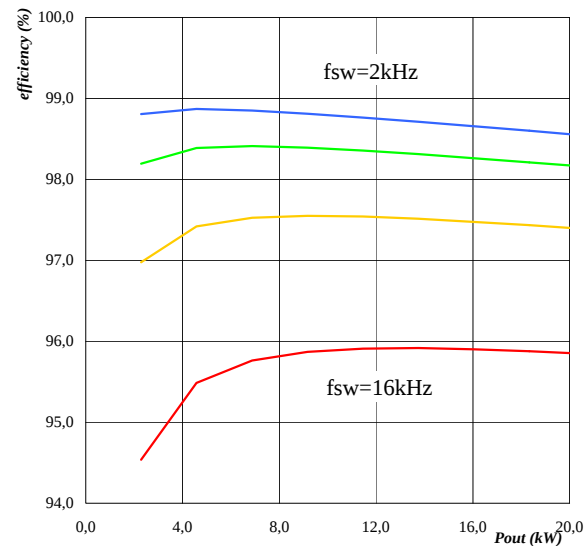
Conditions: $T_j=125^\circ\text{C}$
DC link= 600 V
Modulation index $M_i= 1$
 $\cos\phi_i= 0,80$
Switching freq. parameter f_{sw} from 2 kHz to 16 kHz in * 2 steps

$R_{gon}= 18\text{ Ohm}$ $R_{goff}= 18\text{ Ohm}$

Figure 10. Typical efficiency as a function of output power

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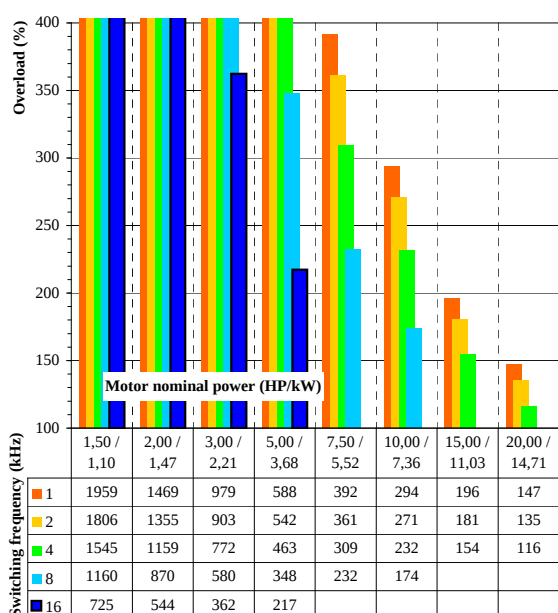
Inverter efficiency= $f(P_{out})$



Conditions: $T_j=125^\circ\text{C}$
DC link= 600 V
Modulation index $M_i= 1$
 $\cos\phi_i= 0,80$
Switching freq. parameter f_{sw} from 2 kHz to 16 kHz in * 2 steps

Figure 11. Typical available overload factor as a function of motor power and switching frequency

Inverter $P_{peak}/P_{nom}=f(P_{nom},f_{sw})$



Conditions: $T_j=125^\circ\text{C}$
DC link= 600 V
Modulation index $M_i= 1$
 $\cos\phi_i= 0,8$
Switching freq. parameter f_{sw} from 1 kHz to 16 kHz in * 2 steps
Heatsink temperature= 80 °C
Motor efficiency= 0,85