

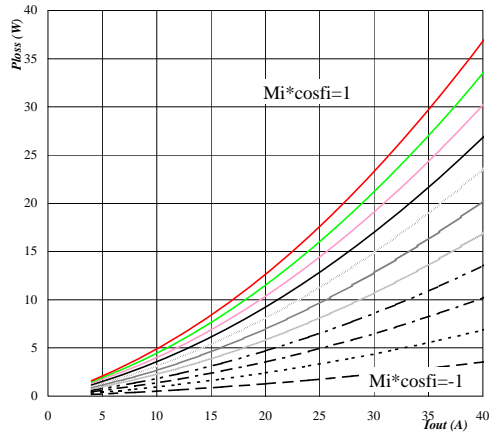
Output inverter application

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

$R_{gon} = 28$ Ohm

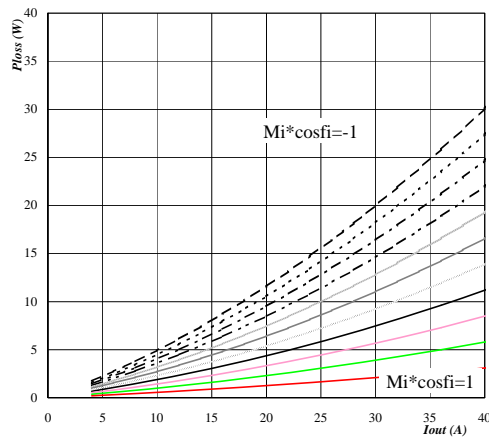
$R_{goff} = 28$ Ohm

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



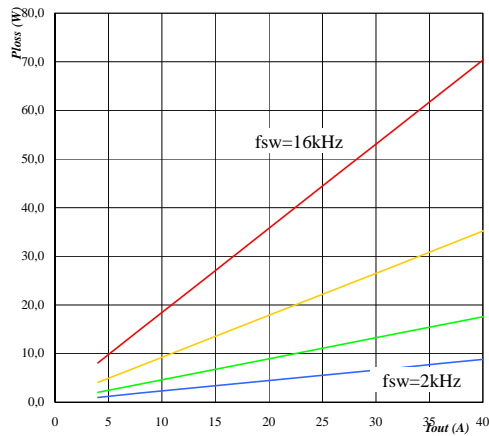
Conditions: $T_j = 125^\circ\text{C}$
Modulation index * $\cos\phi$
parameter $Mi * \cos\phi$ from -1,00 to 1,00
in 0,20 steps

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



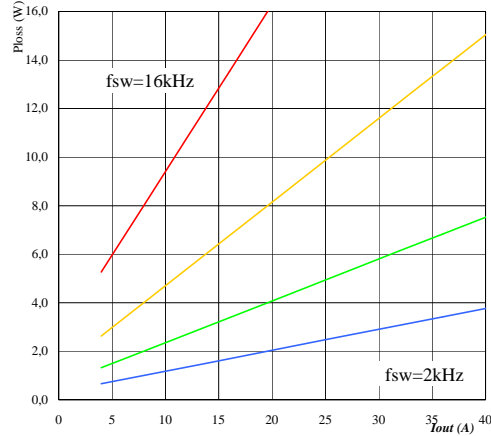
Conditions: $T_j = 125^\circ\text{C}$
Modulation index * $\cos\phi$
parameter $Mi * \cos\phi$ from -1,00 to 1,00
in 0,20 steps

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 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 in * 2 steps

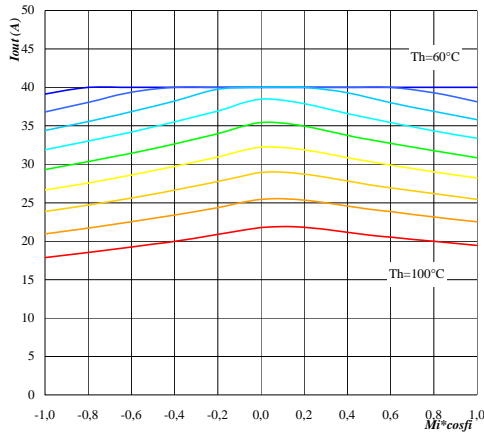
Output inverter application

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

$R_{gon} = 28\text{ Ohm}$ $R_{goff} = 28\text{ Ohm}$

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

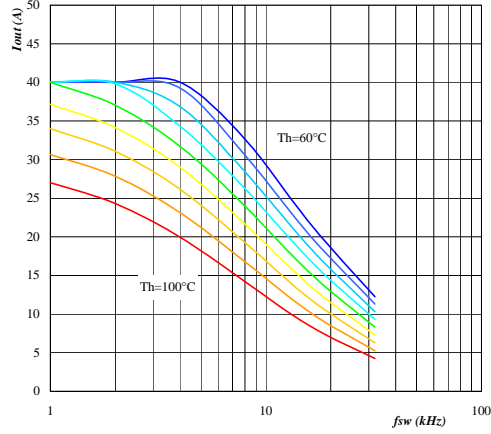
Phase $I_{out} = f(M_i \cdot \cos\phi_i)$



Conditions: $T_j = 125^\circ\text{C}$
DC link= 600 V
fsw= 4 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

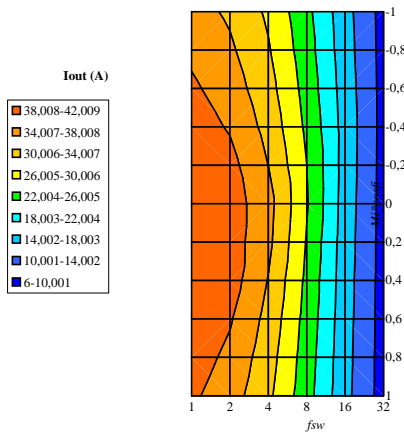
Phase $I_{out} = f(f_{sw})$



Conditions: $T_j = 125^\circ\text{C}$
DC link= 600 V
 $M_i \cdot \cos\phi_i = 0,8$
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 $M_i \cdot \cos\phi_i$ and fsw

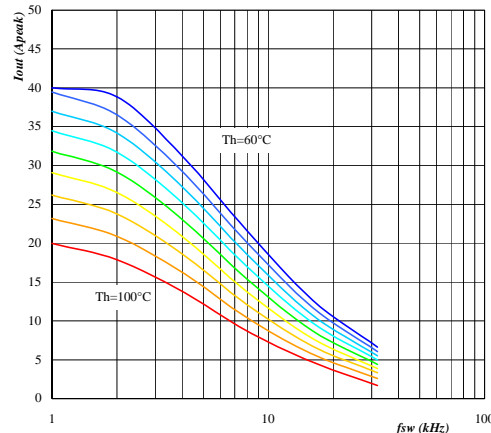
Phase $I_{out} = f(f_{sw}, M_i \cdot \cos\phi_i)$



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

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

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



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

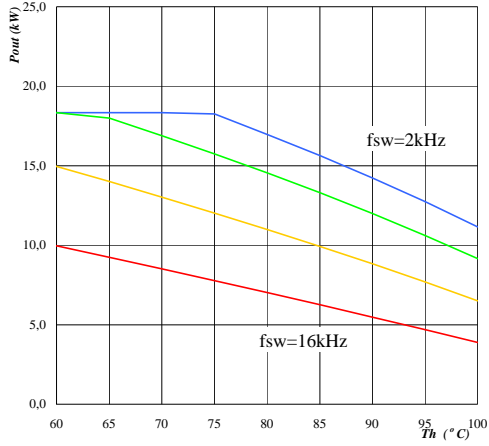
Output inverter application

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

$R_{gon} = 28\text{ Ohm}$ $R_{goff} = 28\text{ Ohm}$

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

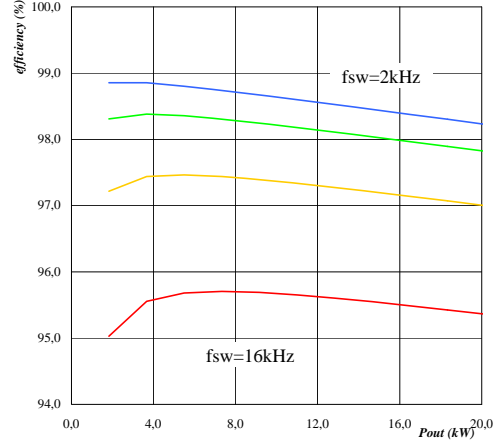
Inverter $P_{out} = f(T_h)$



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

Figure 10. Typical efficiency as a function of output power

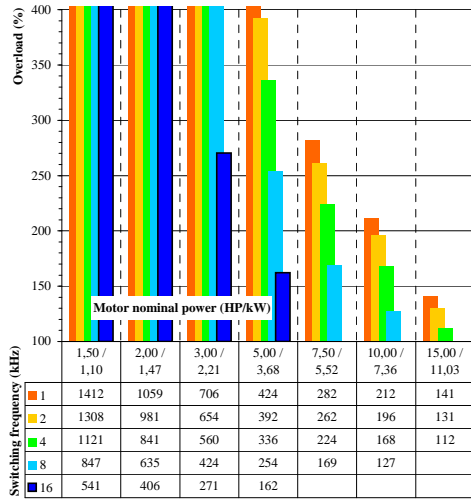
Inverter $\text{efficiency} = f(P_{out})$



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