

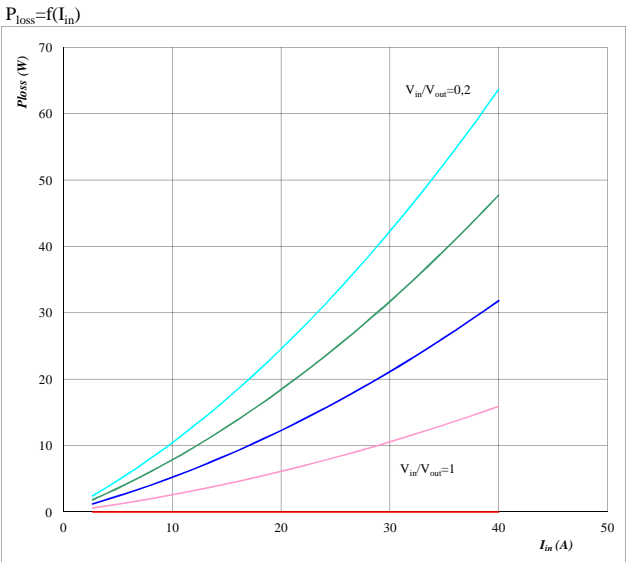
flowSOL 1 BI **DC Boost Application** 600V/50A

General conditions

BOOST	
V_{GEon}	= 15 V
V_{GEoff}	= -15 V
R_{gon}	= 4 Ω
R_{goff}	= 4 Ω

Figure 1. IGBT

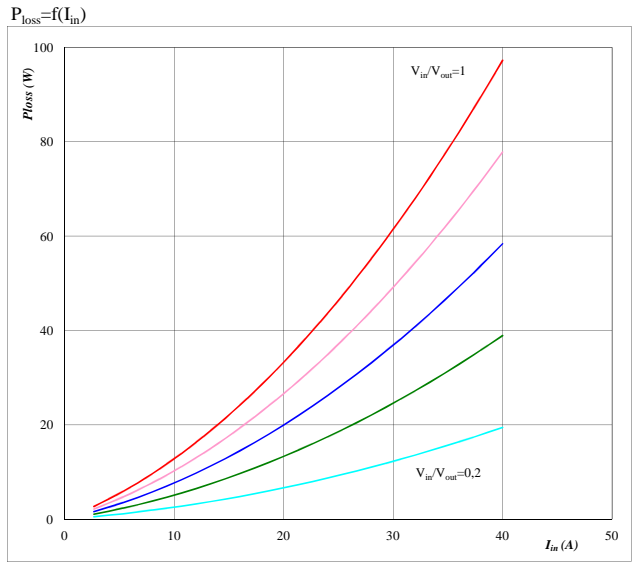
Typical average static loss as a function of input current I_{RMS}



Conditions: $T_j = 125$ °C
Ratio of input DC voltage to output DC voltage parameter: V_{in}/V_{out} from 0,2 to 1,0 in 0,2 steps

Figure 2. FWD

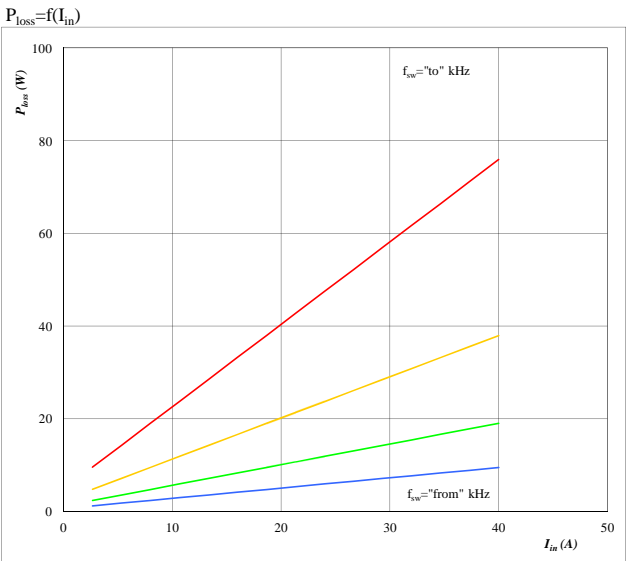
Typical average static loss as a function of input current I_{RMS}



Conditions: $T_j = 125$ °C
Ratio of input DC voltage to output DC voltage parameter: V_{in}/V_{out} from 0,2 to 1,0 in 0,2 steps

Figure 3. IGBT

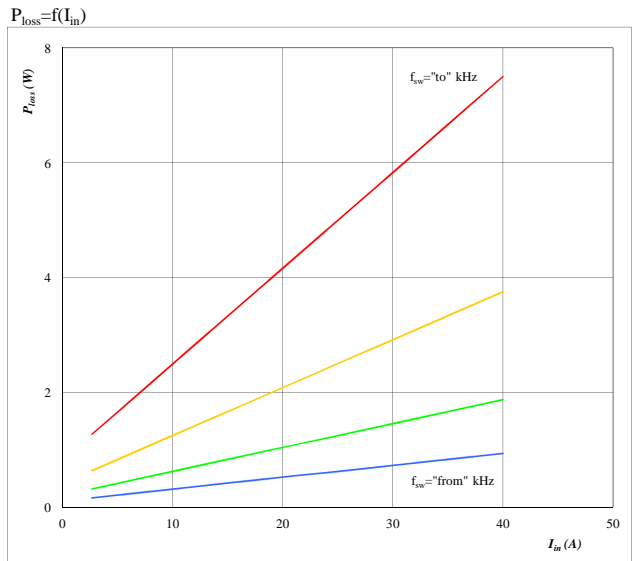
Typical average switching loss as a function of input current



Conditions: $T_j = 125$ °C
 $V_{out} = 350$ V
Sw. freq. f_{sw} from 8 kHz to 64 kHz in steps of factor 2

Figure 4. FWD

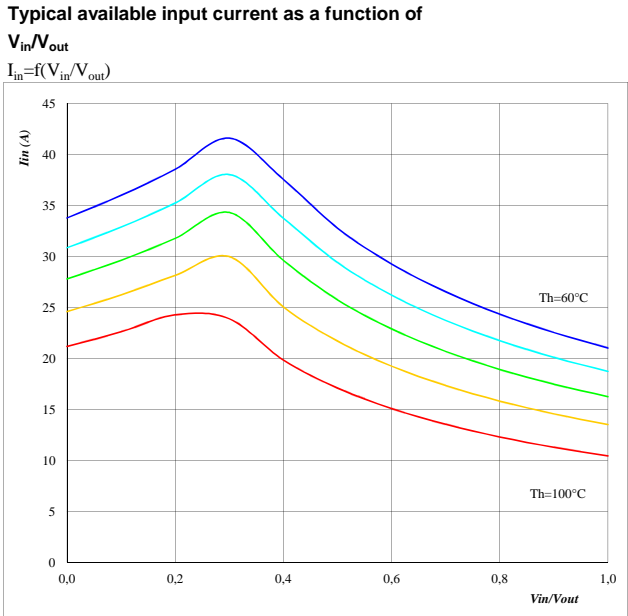
Typical average switching loss as a function of input current



Conditions: $T_j = 125$ °C
 $V_{out} = 350$ V
Sw. freq. f_{sw} from 8 kHz to 64 kHz in steps of factor 2

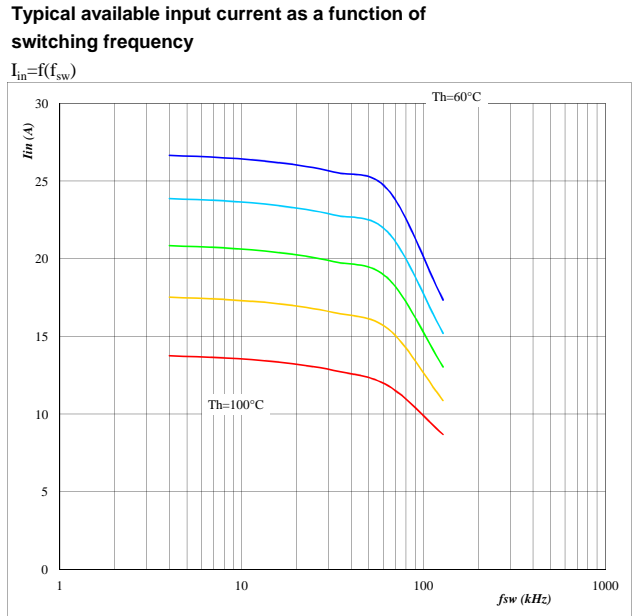
flowSOL 1 BI DC Boost Application 600V/50A

Figure 5. per PHASE



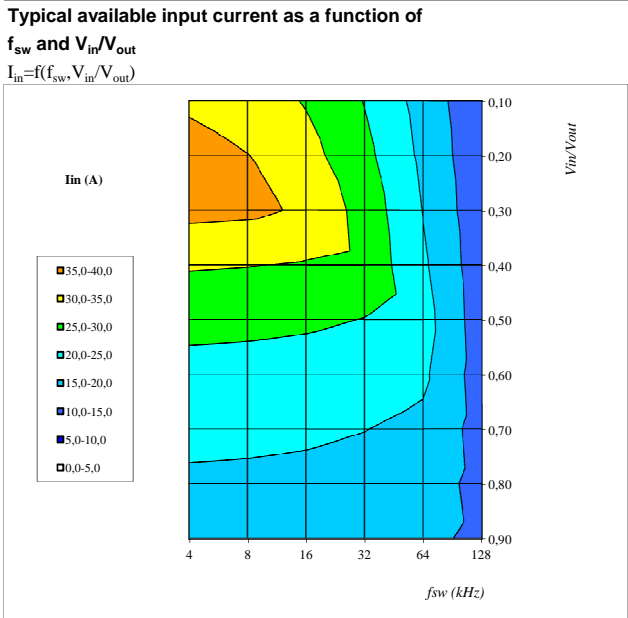
Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V $f_{sw} = 16$ kHz
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 6. per PHASE



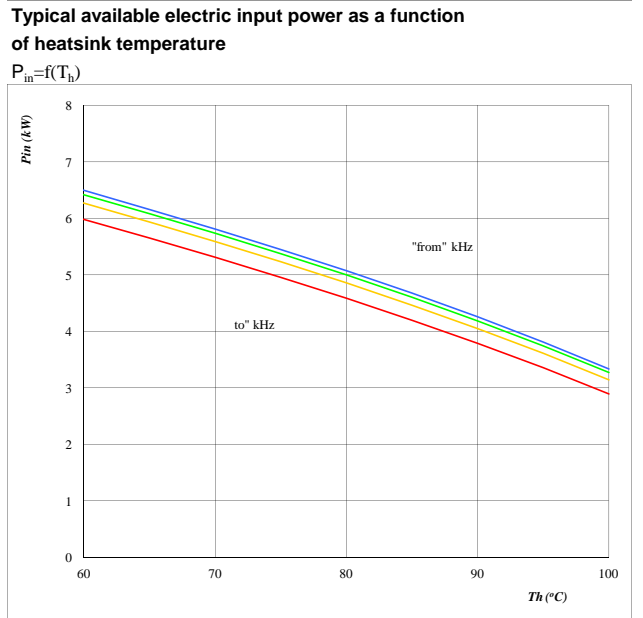
Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V $V_{in} = 250$ V
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 7. per PHASE



Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V
 Th= 80 °C

Figure 8. per PHASE

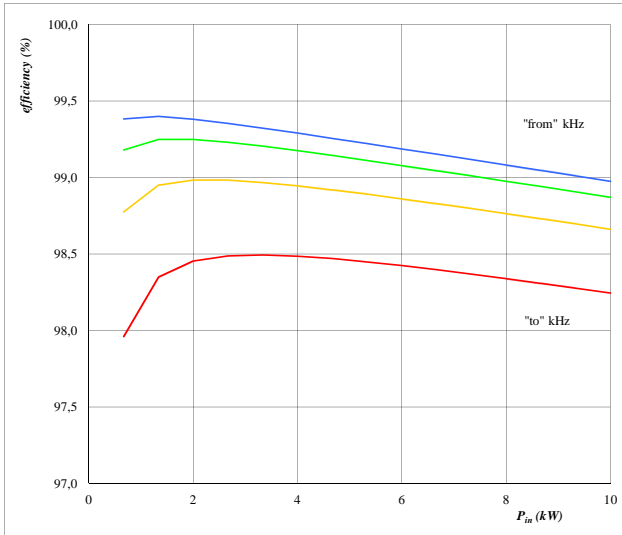


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 $V_{in} = 250$ V DC link= 350 V
 Sw. freq. f_{sw} from 8 kHz to 64 kHz

Figure 9. per PHASE

Typical efficiency as a function of input power

$$\eta = f(P_{in})$$



Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 V_{in} 250 V DC link= 350 V
 parameter:
 Sw. freq. fsw from 8 kHz to 64 kHz

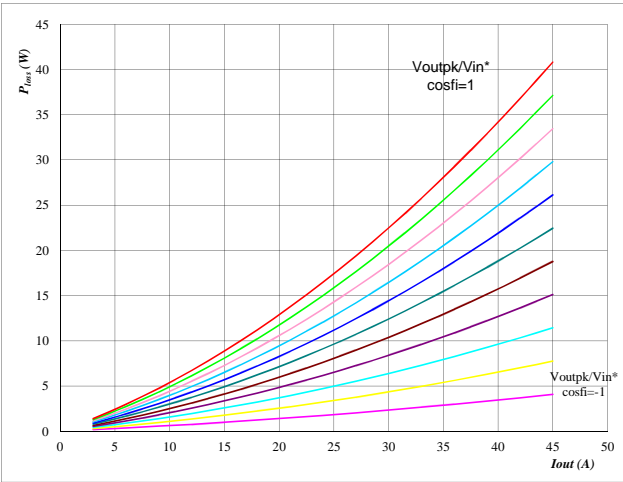
flowSOL 1 BI H-Bridge Application 600V/50A

General conditions

H Bridge SPWM	
V_{GEon}	= 15 V
V_{GEoff}	= 0 V
R_{gon}	= 4 Ω
R_{goff}	= 4 Ω

Figure 1 IGBT

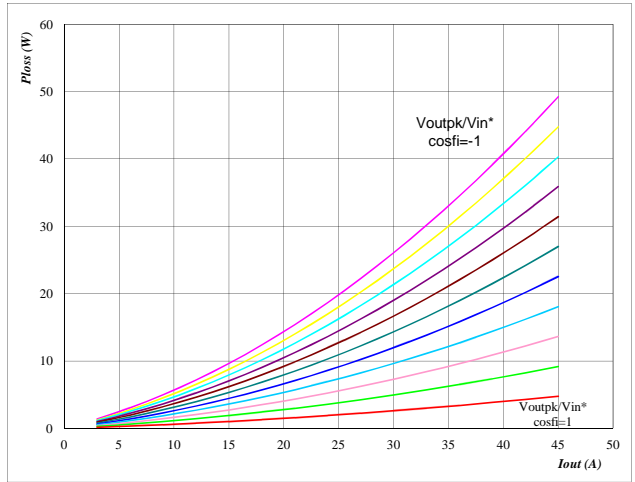
Typical average static loss as a function of output current
 $P_{loss} = f(I_{out})$



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

Figure 2 FWD

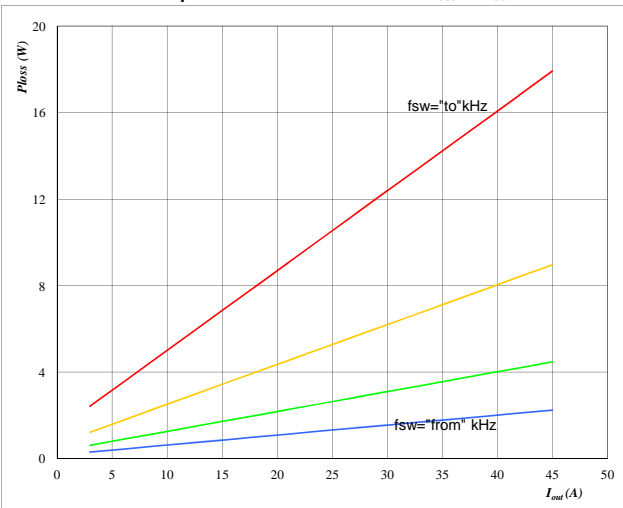
Typical average static loss as a function of output current
 $P_{loss} = f(I_{out})$



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

Figure 3 IGBT

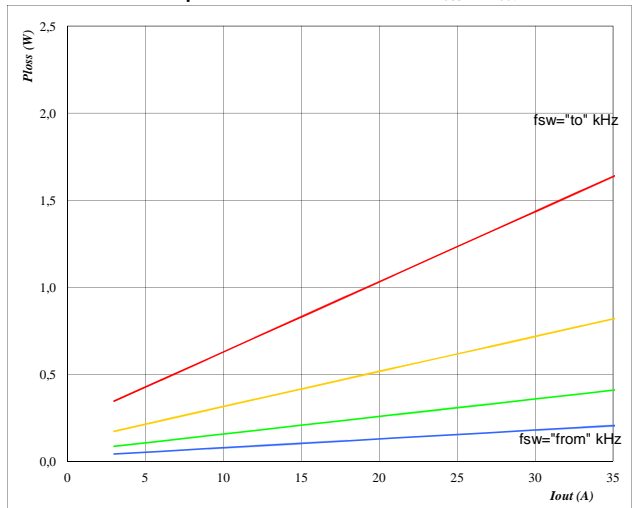
Typical average switching loss as a function of output current
 $P_{loss} = f(I_{out})$



At
 $T_j = 125 \text{ }^\circ\text{C}$
DC link = 350 V
fsw from 4 kHz to 32 kHz in steps of factor 2

Figure 4 FWD

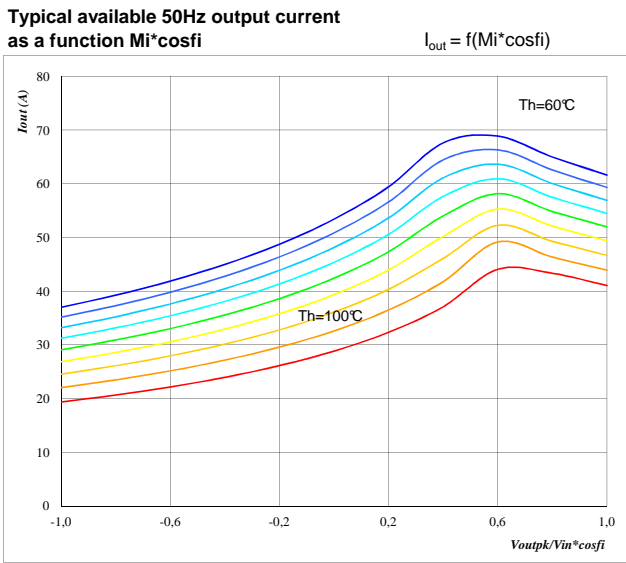
Typical average switching loss as a function of output current
 $P_{loss} = f(I_{out})$



At
 $T_j = 125 \text{ }^\circ\text{C}$
DC link = 350 V
fsw from 4 kHz to 32 kHz in steps of factor 2

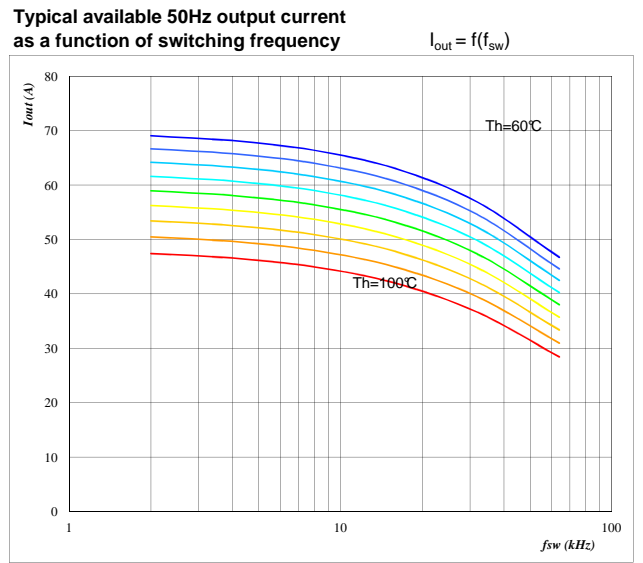
flowSOL 1 BI Output Inverter Application 600V/50A

Figure 5 Phase



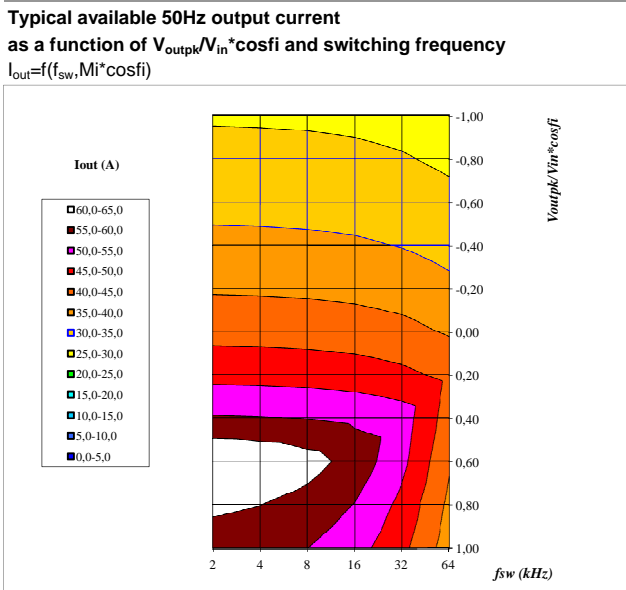
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $f_{sw} = 16 \text{ kHz}$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase



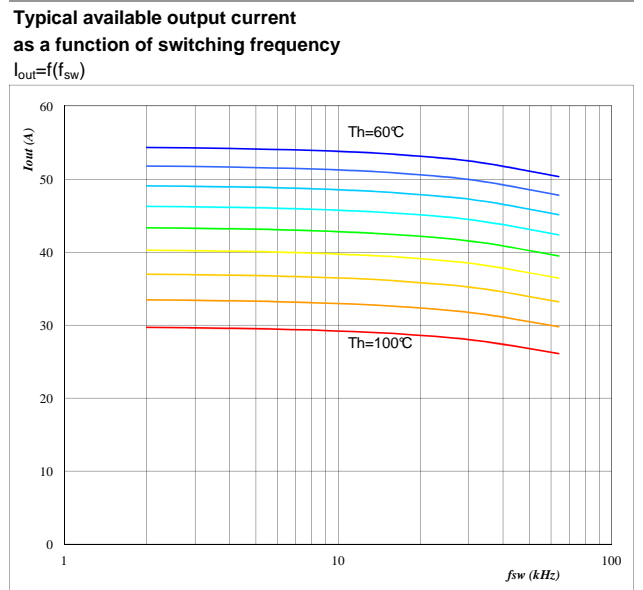
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $Mi \cdot \cos\phi_i = 1$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase



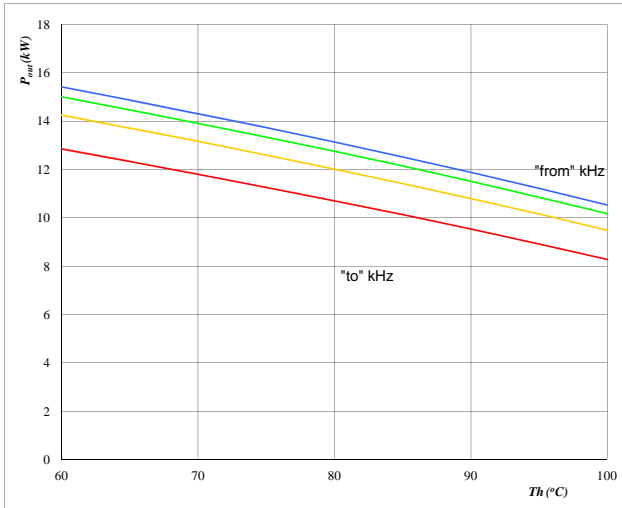
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $T_h = 80 \text{ } ^\circ\text{C}$

Figure 8 Phase



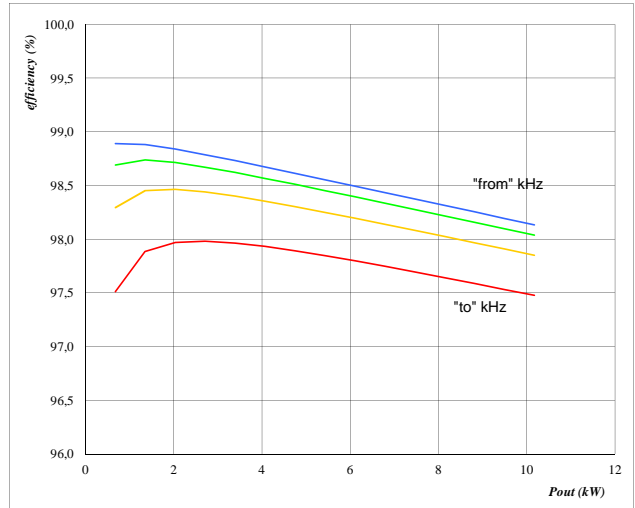
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $Mi \cdot \cos\phi_i = 0$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 9 Inverter

Typical available peak output power as a function of heatsink temperature
 $P_{out}=f(T_h)$


At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 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
 efficiency=f(P_{out})


At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $M_i = 1$
 $\cos\phi_i = 1$
 fsw from 4 kHz to 32 kHz in steps of factor 2

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Datasheet Status	Product Status	Definition
Target	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. The data contained is exclusively intended for technically trained staff.
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Final	Full Production	This datasheet contains final specifications. Vincotech reserves the right to make changes at any time without notice in order to improve design. The data contained is exclusively intended for technically trained staff.

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