

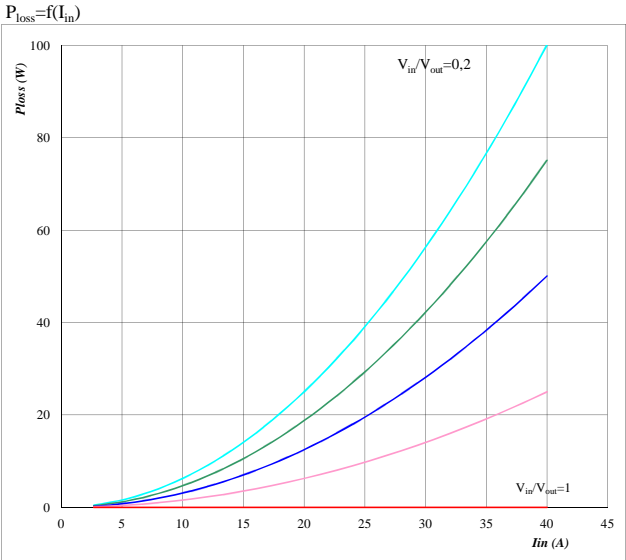
flowSOL 1 BI **DC Boost Application** 650 V/41 mOhm

General conditions

BOOST	
V_{GEon}	= 10 V
V_{GEoff}	= 0 V
R_{gon}	= 2 Ω
R_{goff}	= 2 Ω

Figure 1. MOSFET

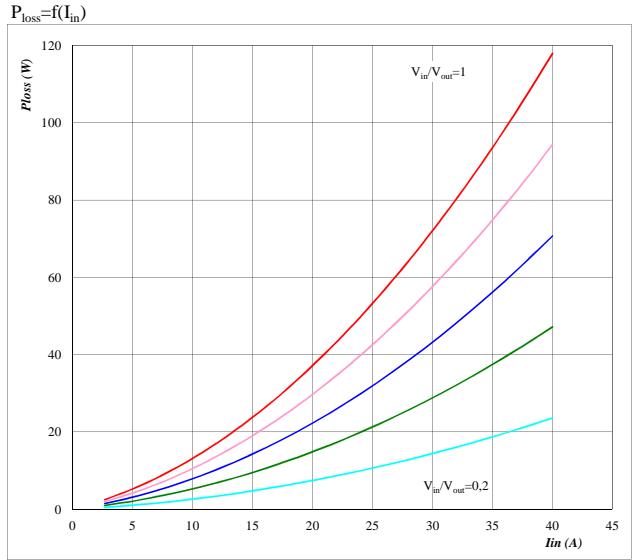
Typical average static loss as a function of input current I_{RMS}



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. FRED

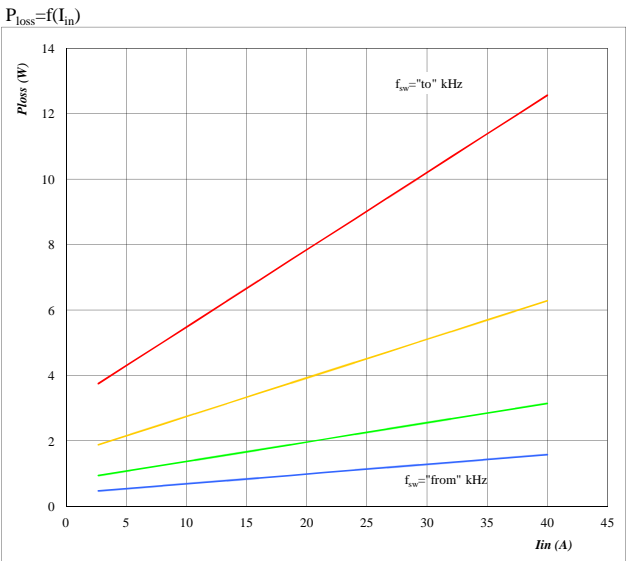
Typical average static loss as a function of input current I_{RMS}



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. MOSFET

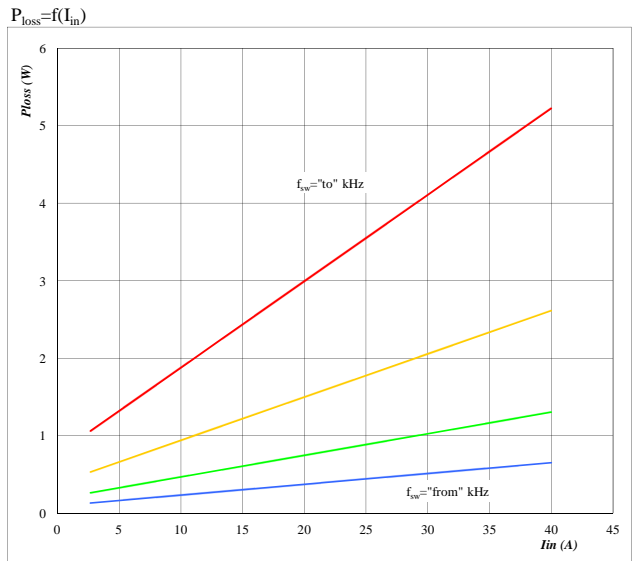
Typical average switching loss as a function of input current



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. FRED

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

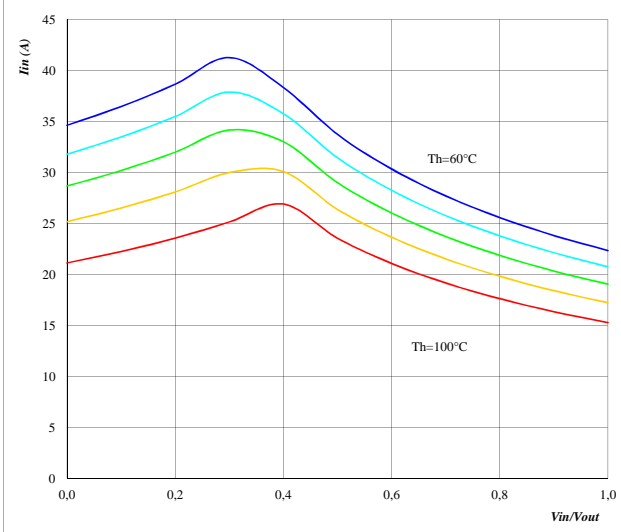
flowSOL 1 BI DC Boost Application 650 V/41 mOhm

Figure 5. per PHASE

Typical available input current as a function of

V_{in}/V_{out}

$I_{in}=f(V_{in}/V_{out})$

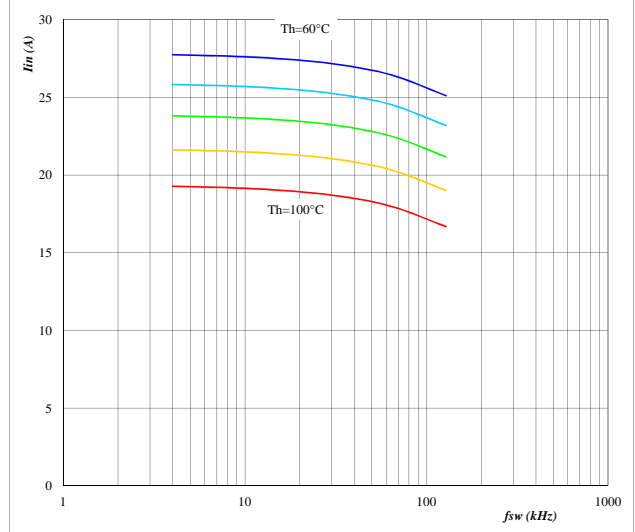


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V $f_{sw} = 20$ kHz
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 6. per PHASE

Typical available input current as a function of switching frequency

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



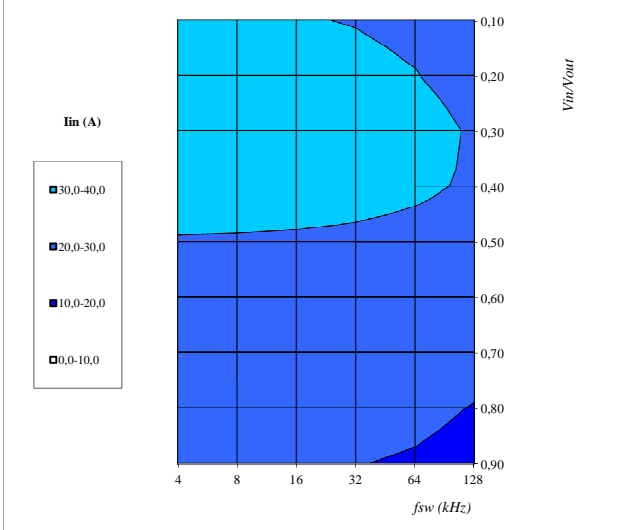
Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V $V_{in} = 250$ V
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 7. per PHASE

Typical available input current as a function of

f_{sw} and V_{in}/V_{out}

$I_{in}=f(f_{sw}, V_{in}/V_{out})$

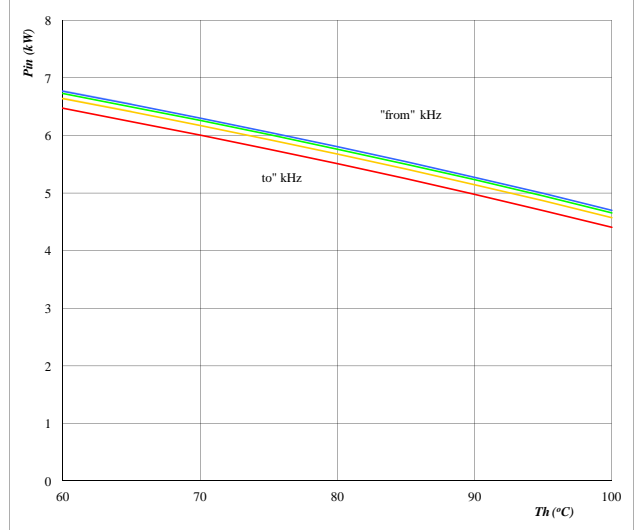


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 350 V
 Th= 80 °C

Figure 8. per PHASE

Typical available electric input power as a function of heatsink temperature

$P_{in}=f(T_h)$

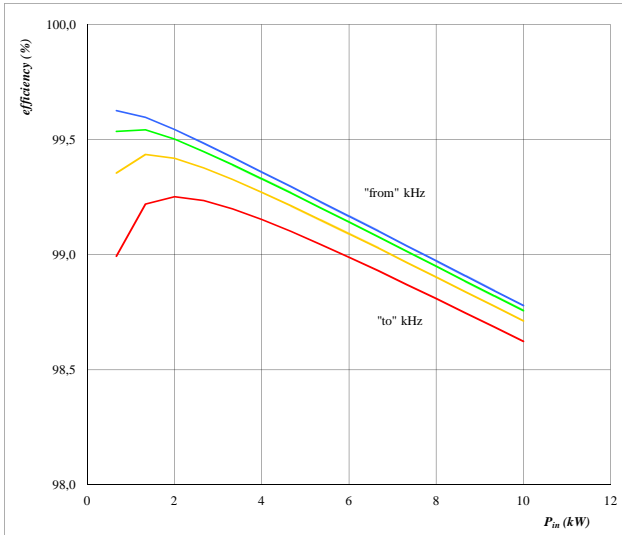


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 $V_{in} = 250$ V DC link= 350 V
 Sw. freq. f_{sw} from 8 kHz to 64 kHz

Figure 9. per PHASE

Typical efficiency as a function of input power

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



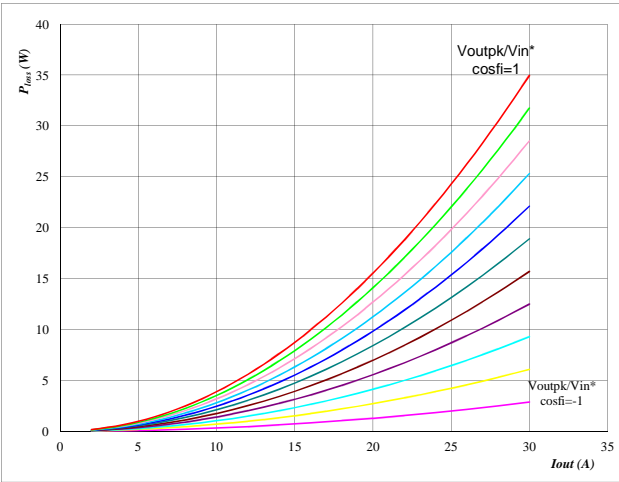
Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 $V_{in} = 250\text{ V}$ DC link = 350 V
 parameter:
 Sw. freq. fsw from 8 kHz to 64 kHz

flowSOL 1 BI H-Bridge Application 650 V/41 mOhm

General conditions
H Bridge SPWM
 $V_{GEon} = 10\text{ V}$
 $V_{GEoff} = 0\text{ V}$
 $R_{gon} = 2\ \Omega$
 $R_{goff} = 2\ \Omega$

Figure 1 MOSFET

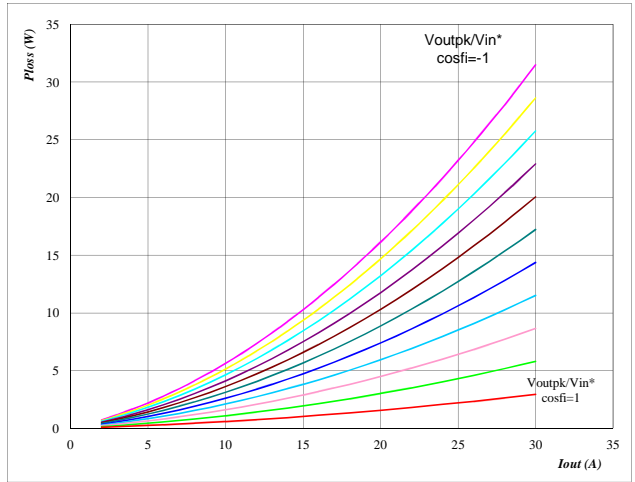
Typical average static loss as a function of output current
 $P_{loss} = f(I_{out})$



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

Figure 2 FWD

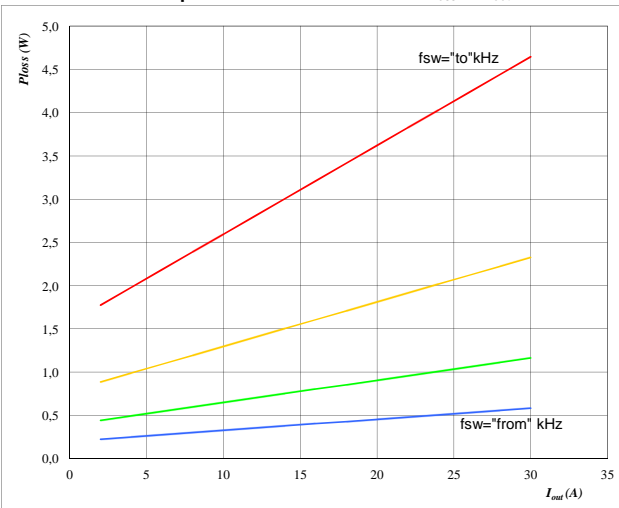
Typical average static loss as a function of output current
 $P_{loss} = f(I_{out})$



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

Figure 3 MOSFET

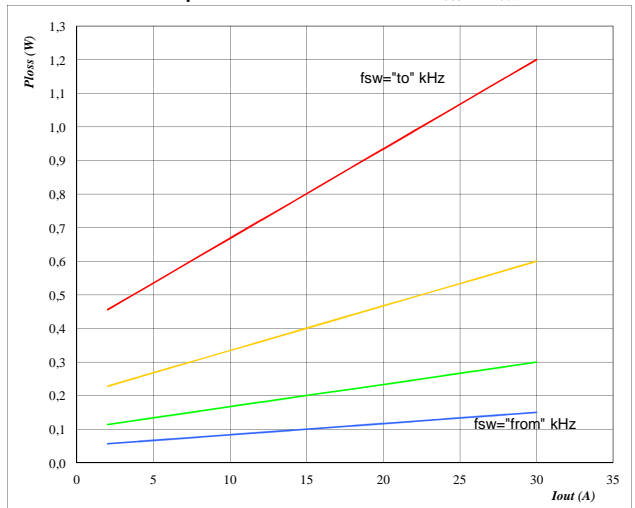
Typical average switching loss as a function of output current
 $P_{loss} = f(I_{out})$



At
 $T_j = 125\ \text{C}$
DC link = 350 V
fsw from 8 kHz to 64 kHz in steps of factor 2

Figure 4 FWD

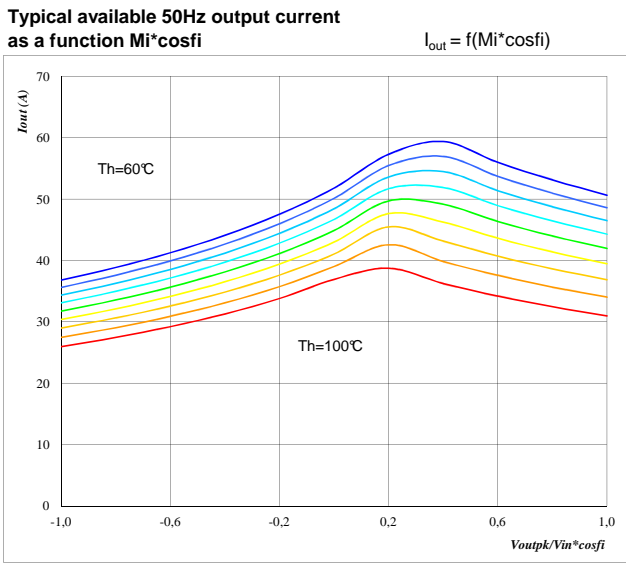
Typical average switching loss as a function of output current
 $P_{loss} = f(I_{out})$



At
 $T_j = 125\ \text{C}$
DC link = 350 V
fsw from 8 kHz to 64 kHz in steps of factor 2

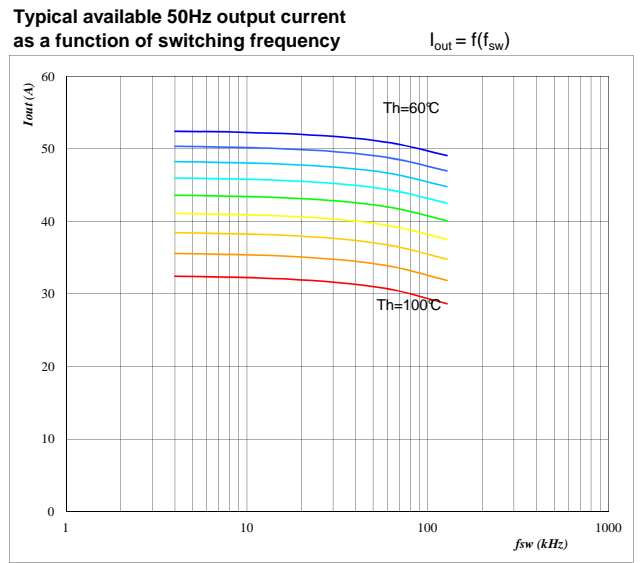
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Figure 5 Phase



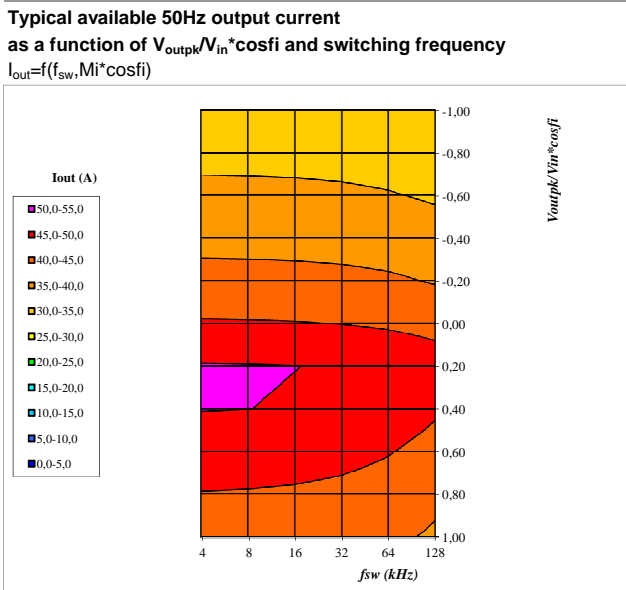
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $f_{sw} = 32 \text{ kHz}$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 6 Phase



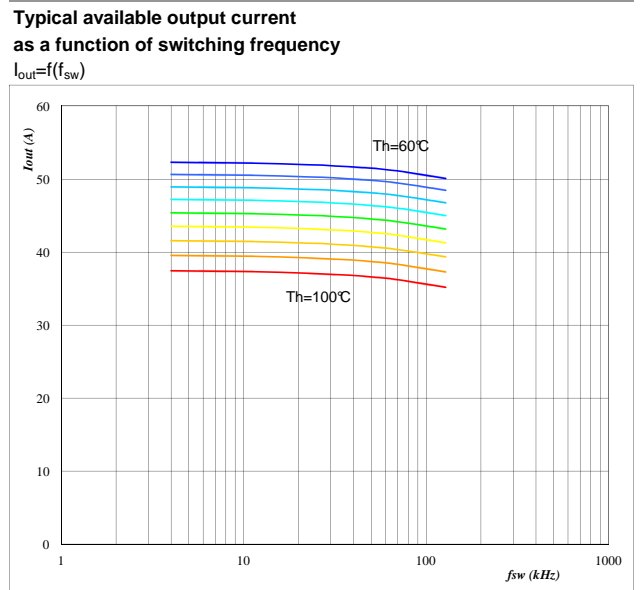
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $M_i \cdot \cos\phi_i = 1$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 7 Phase



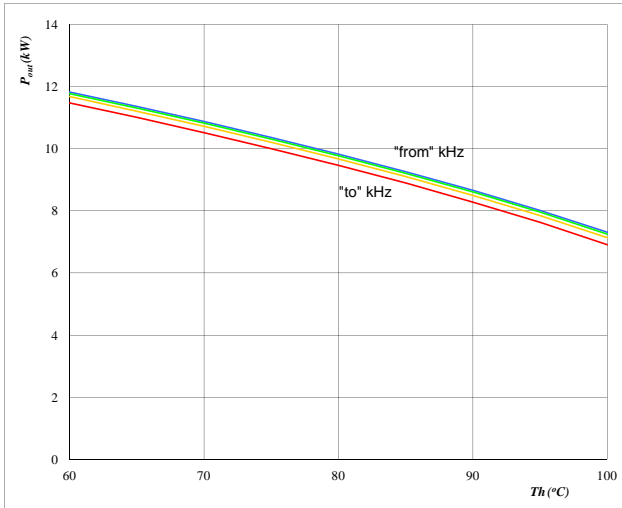
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $T_h = 80 \text{ } ^\circ\text{C}$

Figure 8 Phase



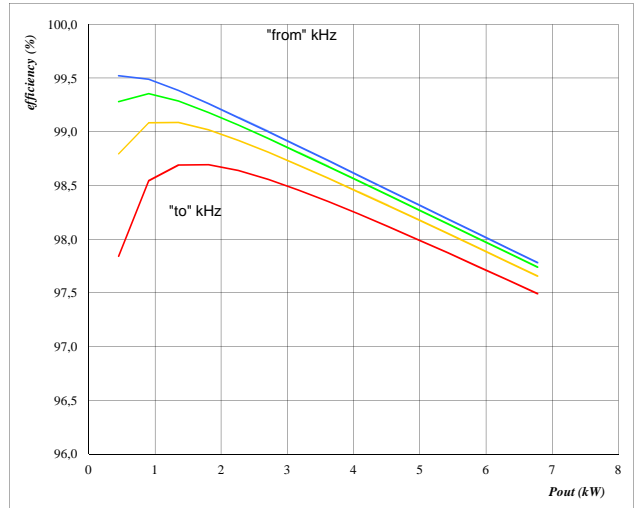
At
 $T_j = 125 \text{ } ^\circ\text{C}$
 DC link = 350 V
 $M_i \cdot \cos\phi_i = 0$
 Th from 60 °C to 100 °C in steps of 5 °C

Figure 9 H-Bridge

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 8 kHz to 64 kHz in steps of factor 2

Figure 10 H-Bridge

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 8 kHz to 64 kHz in steps of factor 2