

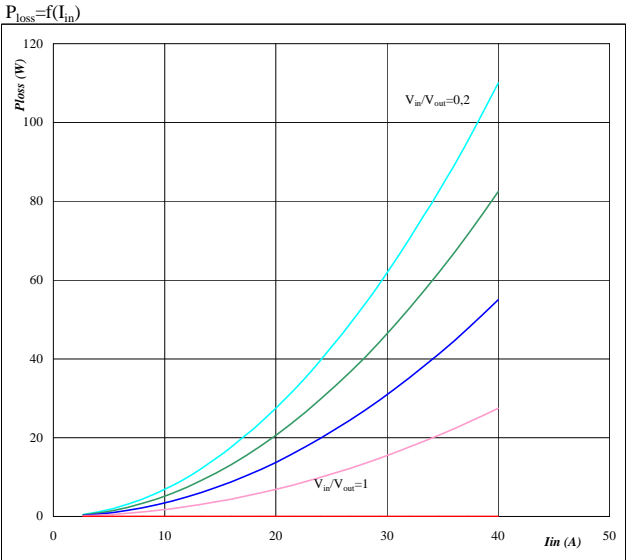
flowSOL 0 BI **DC Boost Application** 600V / 41mOhm

**General conditions**

BOOST	
$V_{GEon}$	= 10 V
$V_{GEoff}$	= 0 V
$R_{gon}$	= 8 $\Omega$
$R_{goff}$	= 8 $\Omega$

**Figure 1. MOSFET**

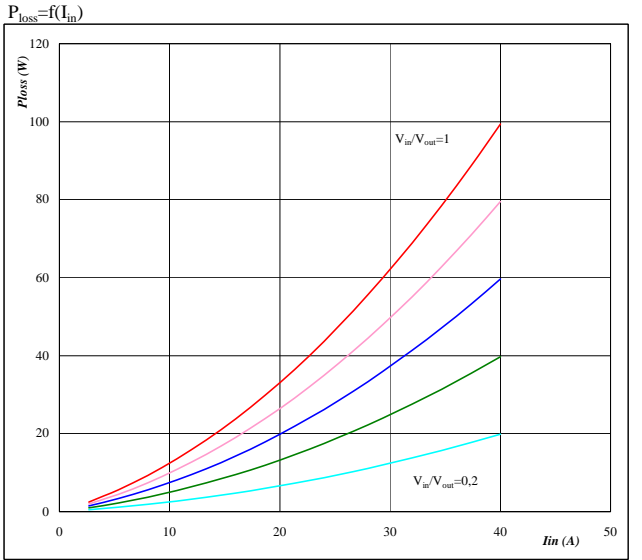
Typical average static loss as a function of input current  $I_{RMS}$



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. FWD**

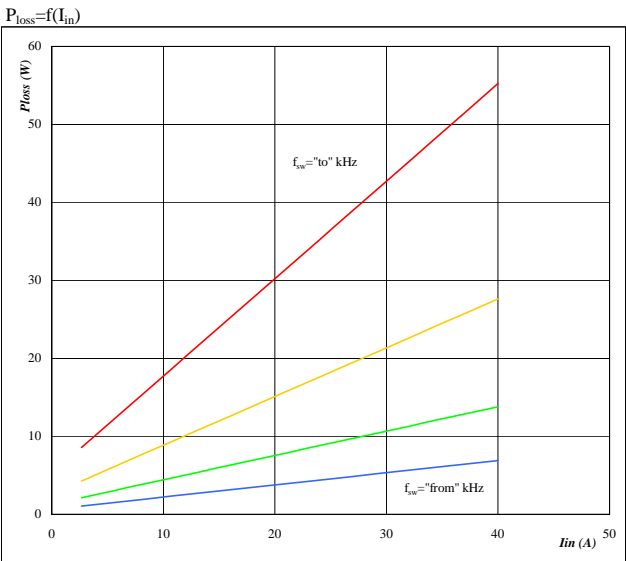
Typical average static loss as a function of input current  $I_{RMS}$



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. MOSFET**

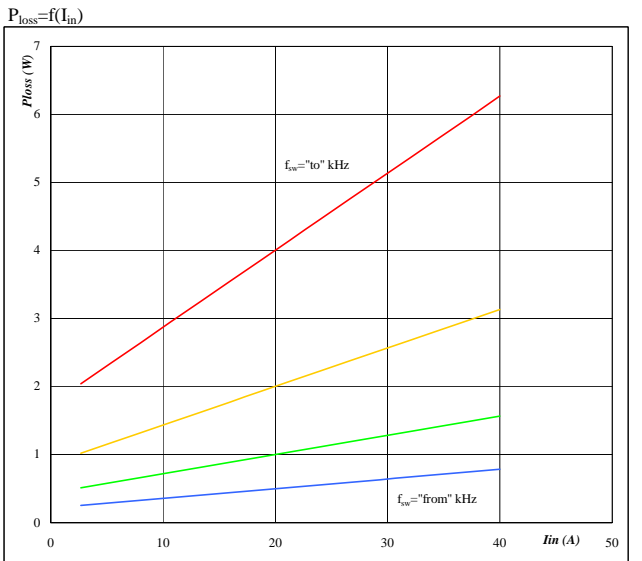
Typical average switching loss as a function of input current



Conditions:  $T_j = 125$  °C  
 $V_{out} = 350$  V  
Sw. freq. fsw from 16 kHz to 128 kHz  
in steps of factor 2

**Figure 4. FWD**

Typical average switching loss as a function of input current



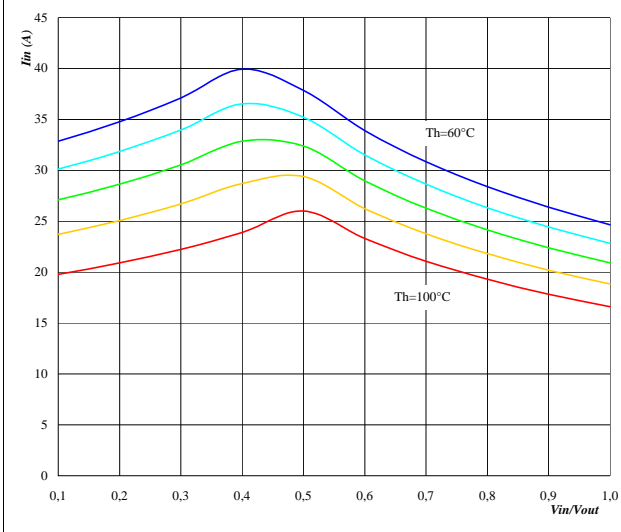
Conditions:  $T_j = 125$  °C  
 $V_{out} = 350$  V  
Sw. freq. fsw from 16 kHz to 128 kHz  
in steps of factor 2

Figure 5. per PHASE

Typical available input current as a function of

$V_{in}/V_{out}$

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

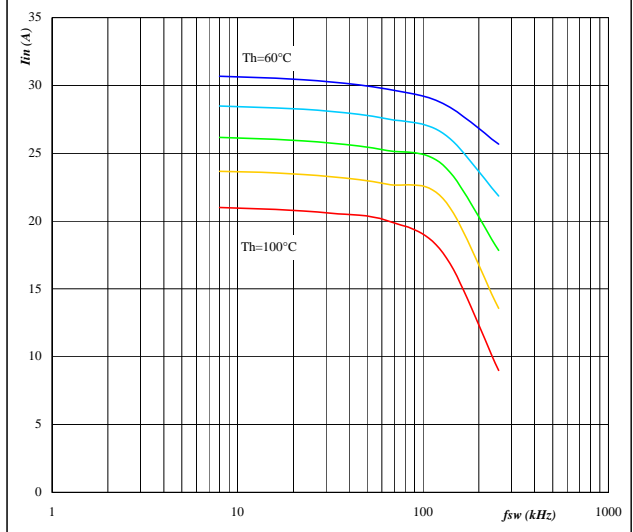


Conditions:  $T_j = T_{jmax} - 25^\circ C$   
 DC link= 350 V  $f_{sw} = 20$  kHz  
 parameter: Heatsink temp.  
 Th from 60 °C to 100 °C  
 in 10 °C steps

Figure 6. per PHASE

Typical available input current as a function of  
switching frequency

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



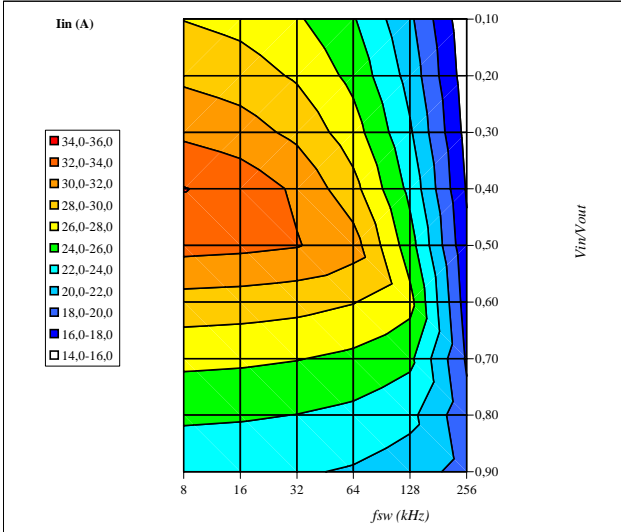
Conditions:  $T_j = T_{jmax} - 25^\circ C$   
 DC link= 350 V  $V_{in} = 250$  V  
 parameter: Heatsink temp.  
 Th from 60 °C to 100 °C  
 in 10 °C steps

Figure 7. per PHASE

Typical available input current as a function of

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

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

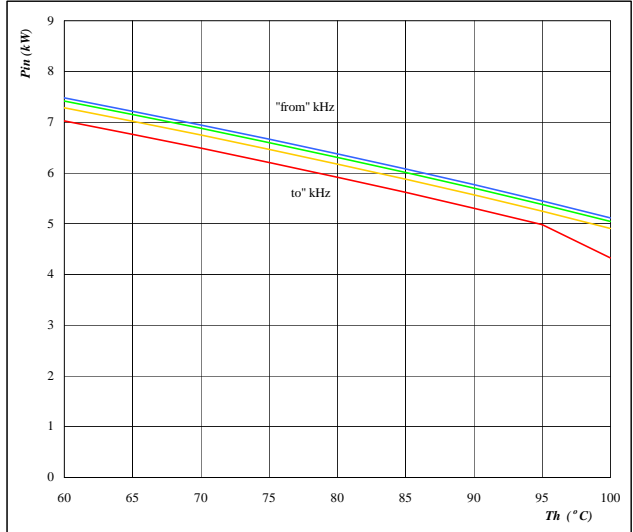


Conditions:  $T_j = T_{jmax} - 25^\circ C$   
 DC link= 350 V  
 Th= 80 °C

Figure 8. per PHASE

Typical available electric input power as a function  
of heatsink temperature

$P_{in}=f(T_h)$

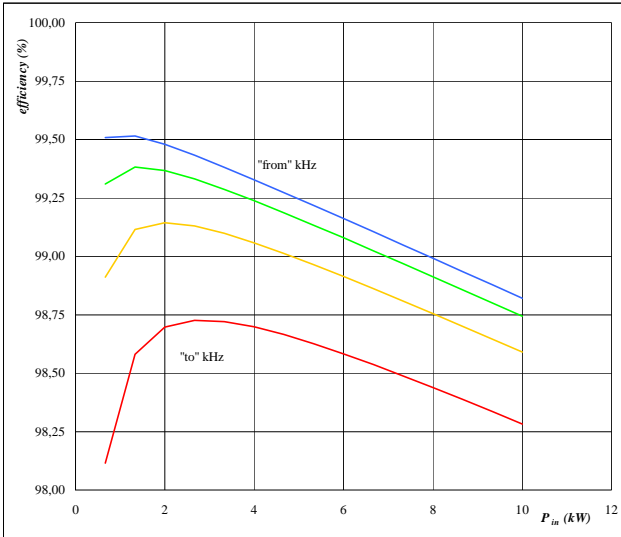


Conditions:  $T_j = T_{jmax} - 25^\circ C$   
 $V_{in} = 250$  V DC link= 350 V  
 Sw. freq.  $f_{sw}$  from 16 kHz to 128 kHz

**Figure 9.** per PHASE

**Typical efficiency as a function of input power**

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



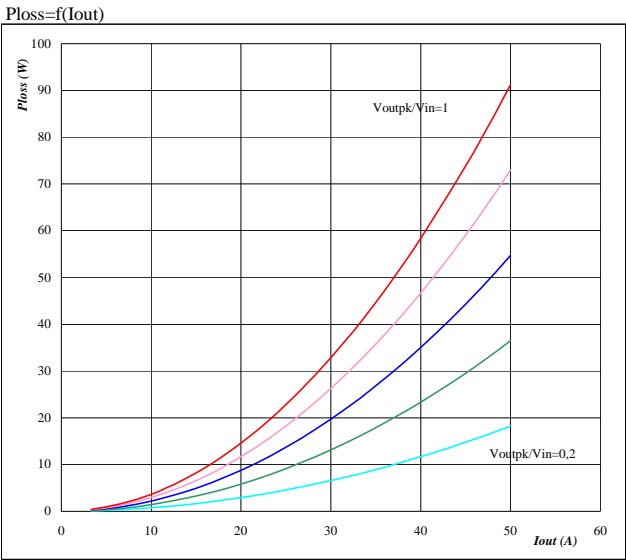
Conditions:  $T_j = T_{jmax} - 25^\circ\text{C}$   
 Vin = 250 V      DC link = 350 V  
 parameter:  
 Sw. freq.      fsw from 16 kHz to 128 kHz

flowSOL 0 BI **H bridge application** 600V / 41mOhm

**General conditions**  
**Buck halfwave conduction**  
 $V_{GEon} = 10\text{ V}$   
 $V_{GEoff} = 0\text{ V}$   
 $R_{gon} = 8\ \Omega$   
 $R_{goff} = 8\ \Omega$   
 $\cos\phi_i = 1$

Figure 1. MOSFET

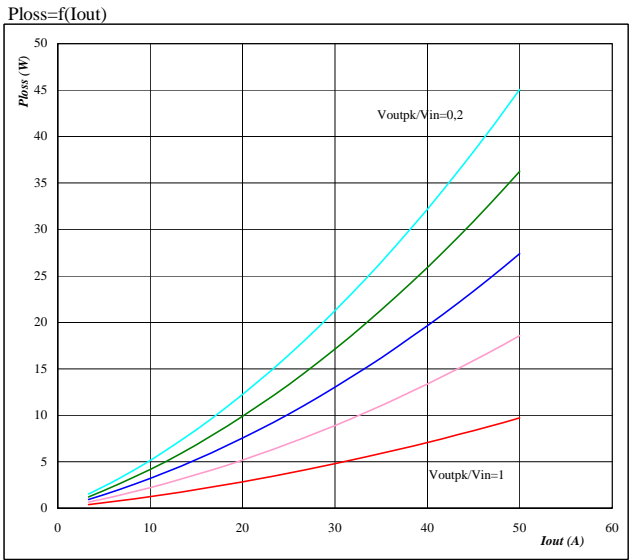
**Typical average static loss as a function of output current**



Conditions:  $T_{jmax} = 125\text{ }^\circ\text{C}$   
 Ratio of output peak to input DC voltage parameter  $V_{outpk}/V_{in}$  from 0,2 to 1,0 in 0,2 steps

Figure 2. FWD

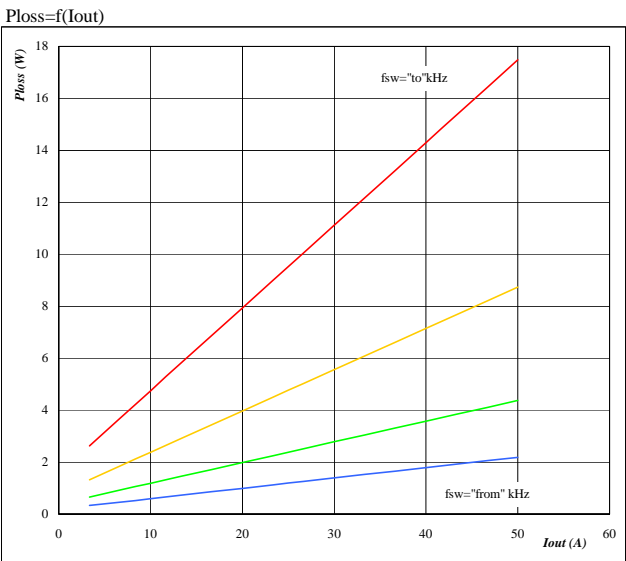
**Typical average static loss as a function of output current**



Conditions:  $T_{jmax} = 150\text{ }^\circ\text{C}$   
 Ratio of output peak to input DC voltage parameter  $V_{outpk}/V_{in}$  from 0,2 to 1,0 in 0,2 steps

Figure 3. MOSFET

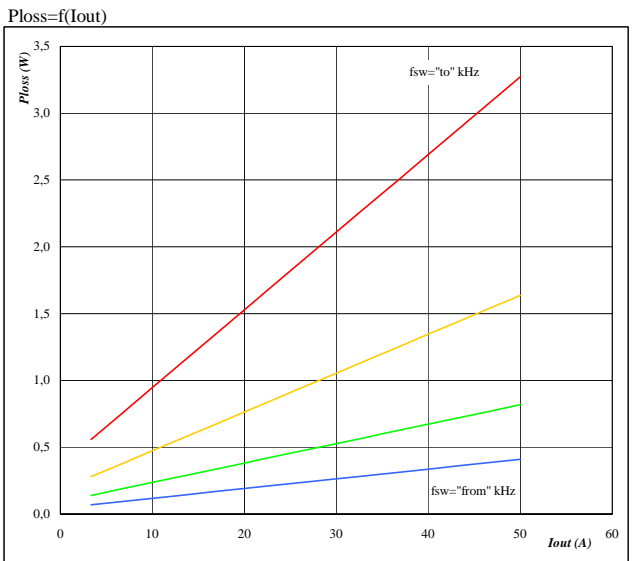
**Typical average switching loss as a function of output current**



Conditions:  $T_{jmax} = 125\text{ }^\circ\text{C}$   
 DC link= 400 V  
 Switching freq. parameter fsw from in 4 kHz to 32 kHz \* 2 steps

Figure 4. FWD

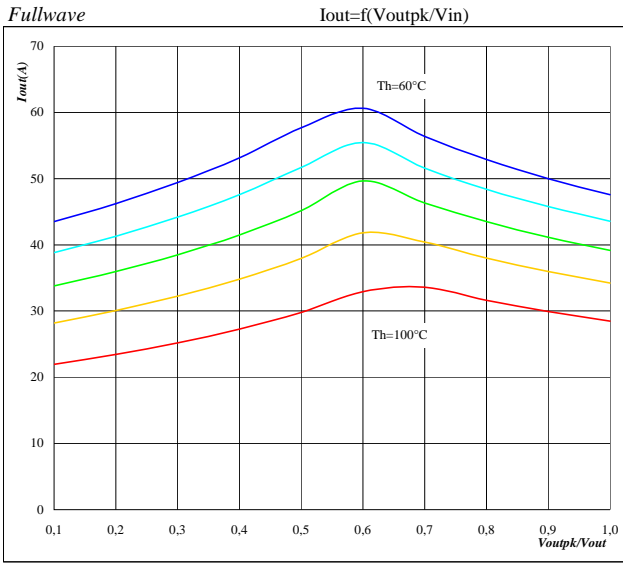
**Typical average switching loss as a function of output current**



Conditions:  $T_{jmax} = 150\text{ }^\circ\text{C}$   
 DC link= 400 V  
 Switching freq. parameter fsw from in 4 kHz to 32 kHz \* 2 steps

Figure 5. per PHASE

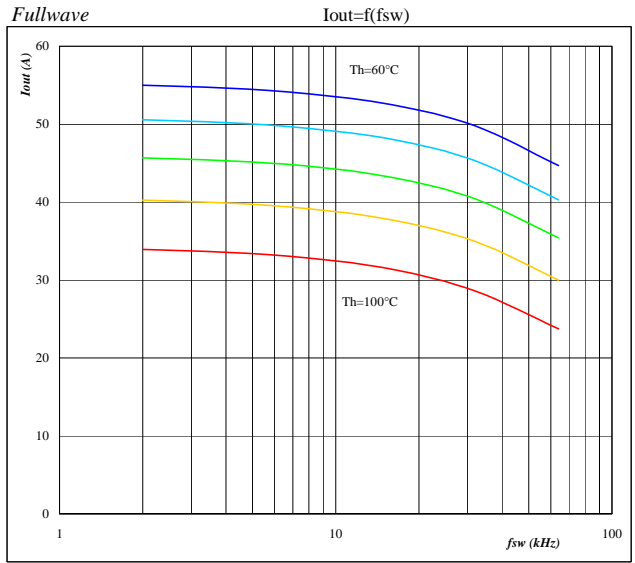
Typical available output current as a function of  $V_{outpk}/V_{in}$



Conditions:  $T_j = T_{jmax}$   
 fsw = 16 kHz DC link = 400 V  
 Heatsink temp. parameter Th from in 60 °C to 100 °C  
 10 °C steps

Figure 6. per PHASE

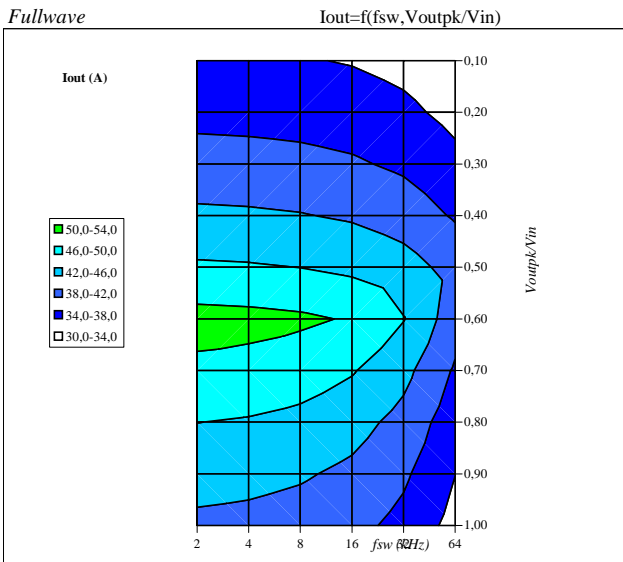
Typical available output current as a function of switching frequency



Conditions:  $T_j = T_{jmax}$   
 Vout = 230 V DC link = 400 V  
 Heatsink temp. parameter Th from in 60 °C to 100 °C  
 10 °C steps

Figure 7. per PHASE

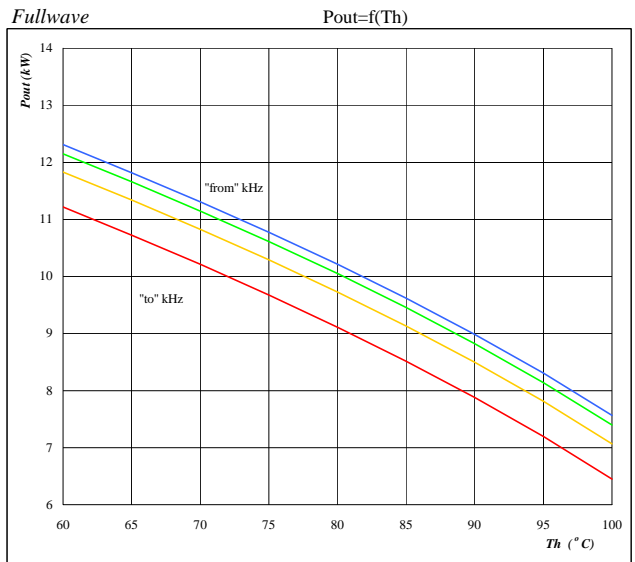
Typical available output current as a function of  $f_{sw}$  and  $V_{outpk}/V_{in}$



Conditions:  $T_j = T_{jmax}$   
 DC link = 400 V  
 Th = 80 °C

Figure 8. per PHASE

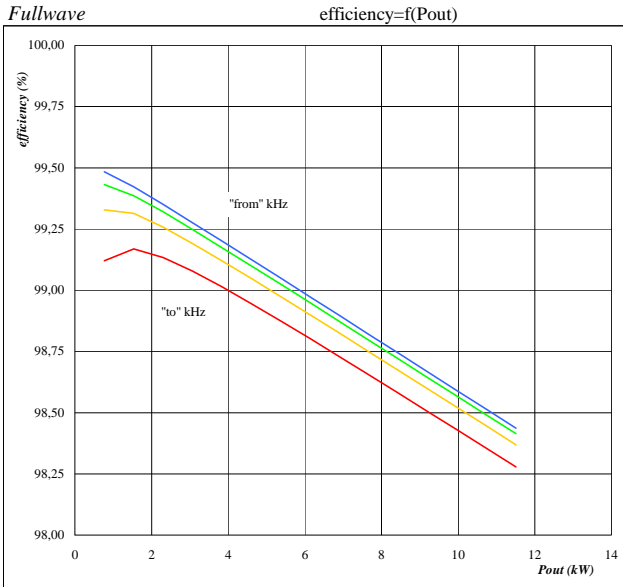
Typical available electric output power as a function of heatsink temperature



Conditions:  $T_j = T_{jmax}$   
 Vout = 230 V DC link = 400 V  
 Switching freq. parameter fsw from in 4 kHz to 32 kHz  
 \* 2 steps

Figure 9. per PHASE

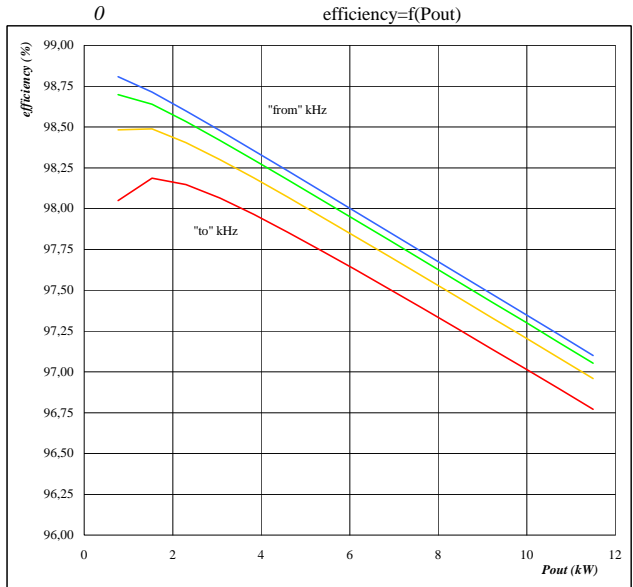
**Typical efficiency as a function of output power**



Conditions:  $T_j = T_{jmax}$   
 Vout 230 V DC link= 400 V  
 Switching freq. fsw from 4 kHz to 32 kHz  
 parameter in \* 2 steps

Figure 10. per PHASE

**Typical efficiency as a function of output power**



Conditions:  $T_j = T_{jmax}$   
 Vout 110 V DC link= 400 V  
 Switching freq. fsw from 4 kHz to 32 kHz  
 parameter in \* 2 steps

