flowBOOST 4w	DC Boost Application	600V/400A

General conditions

BOOST		
V_{GEon}	=	15 V
V_{GEoff}	=	-8 V
R_{gon}	=	1 Ω
R_{goff}	=	1 Ω

Figure 1.   IGBT

Typical average static loss as a function of input current Ii$_{RMS}$
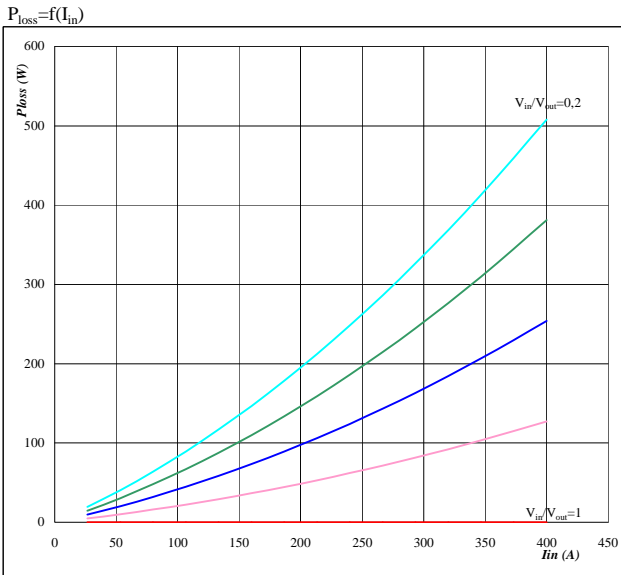
$P_{loss}=f(I_{in})$

Conditions: T_j=   150   °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 Ii$_{RMS}$
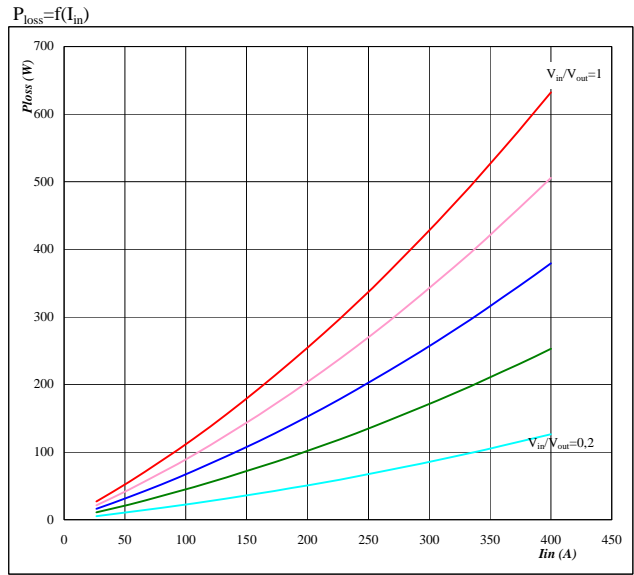
$P_{loss}=f(I_{in})$

Conditions: T_j=   150   °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

$P_{loss}=f(I_{in})$
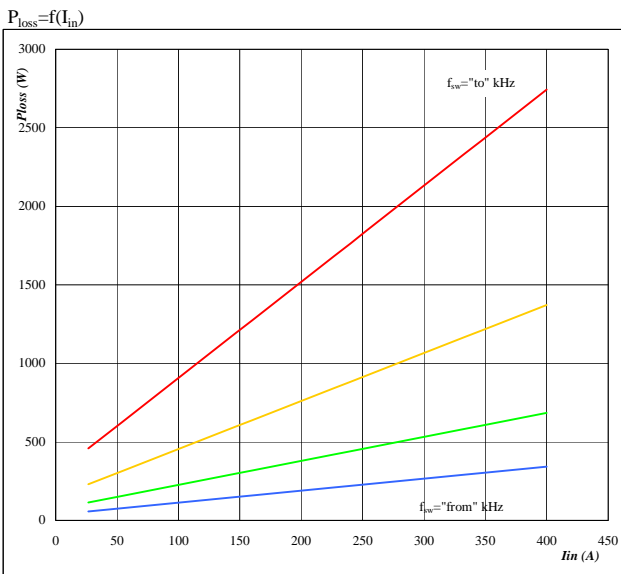
Conditions: Tj=   150   °C

     V_{out} =   350   V

Sw. freq.   fsw from   16   kHz to   128   kHz   in steps of factor 2

Figure 4.   FRED

Typical average switching loss as a function of input current

$P_{loss}=f(I_{in})$
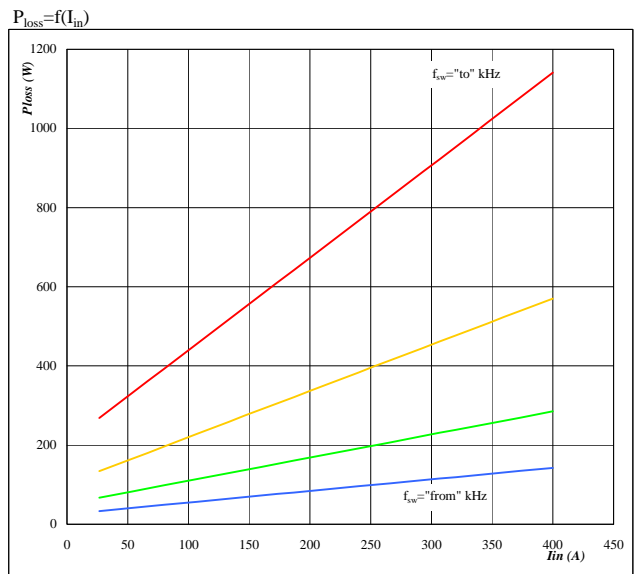
Conditions: Tj=   150   °C

     V_{out} =   350   V

Sw. freq.   fsw from   16   kHz to   128   kHz   in steps of factor 2

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Figure 5. per PHASE

Typical available input current as a function of

V_{in}/V_{out}

$I_{in}=f(V_{in}/V_{out})$
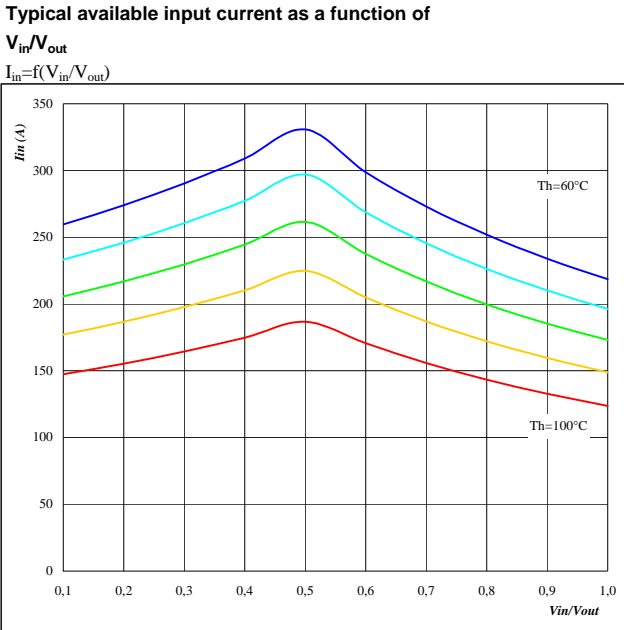
Conditions: $T_j = T_{jmax} - 25°C$

DC link= 350 V f_{sw}= 20 kHz

parameter: Heatsink temp.

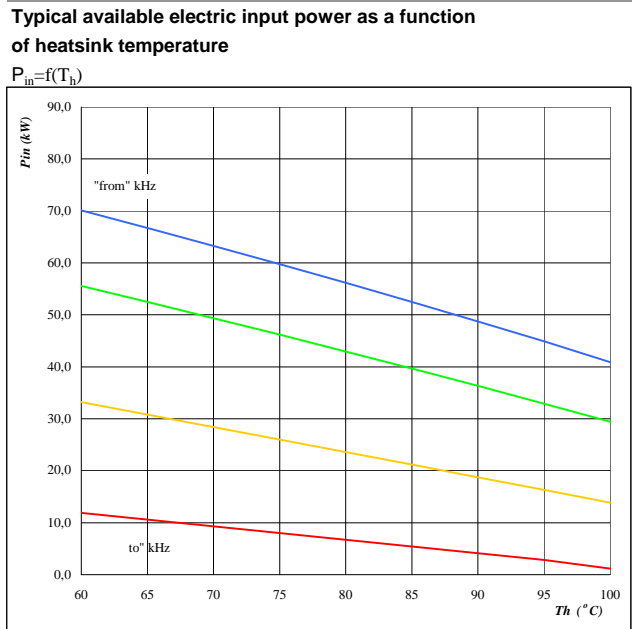Th from 60 °C to 100 °C

in 10 °C steps

Figure 6. per PHASE

Typical available input current as a function of

switching frequency

$I_{in}=f(f_{sw})$
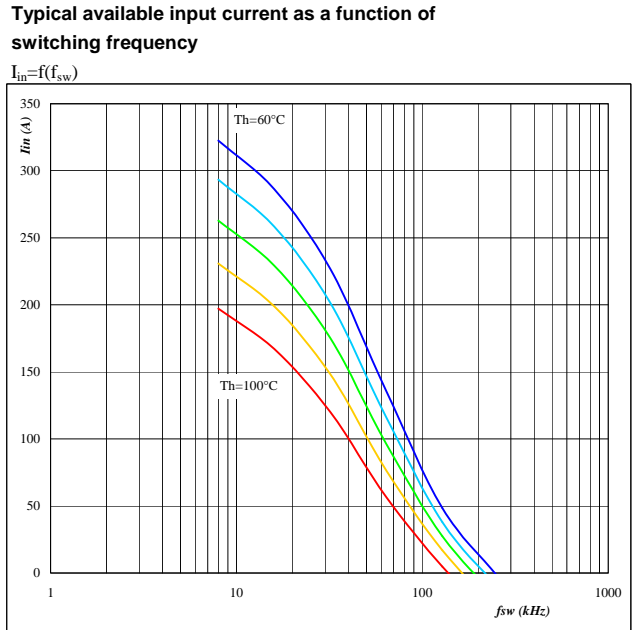
Conditions: $T_j = T_{jmax} - 25°C$

DC link= 350 V   Vin 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}

$I_{in}=f(f_{sw}, V_{in}/V_{out})$
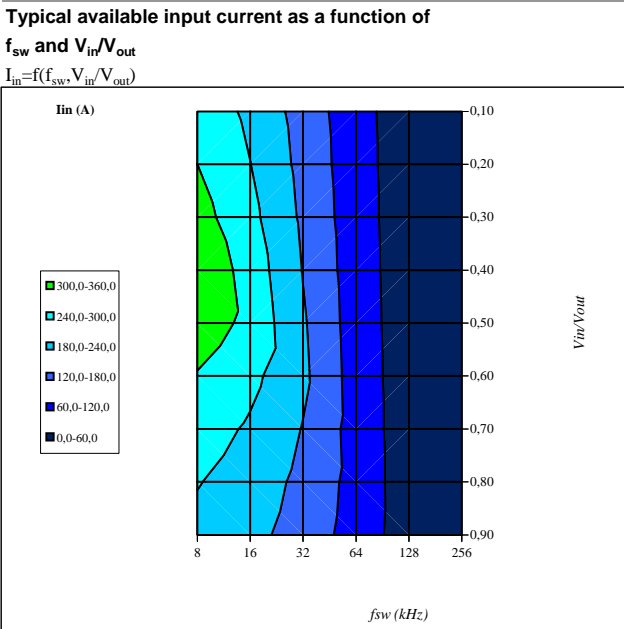
Conditions: $Tj = T_{jmax} - 25°C$

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: $Tj = T_{jmax} - 25°C$

Vin 250 V   DC link= 350 V

Sw. freq. fsw from 16 kHz to 128 kHz

flowBOOST 4w **DC Boost Application** *600V/400A*

Figure 9.   **per PHASE**

Typical efficiency as a function of
input power

η=f(Pin)
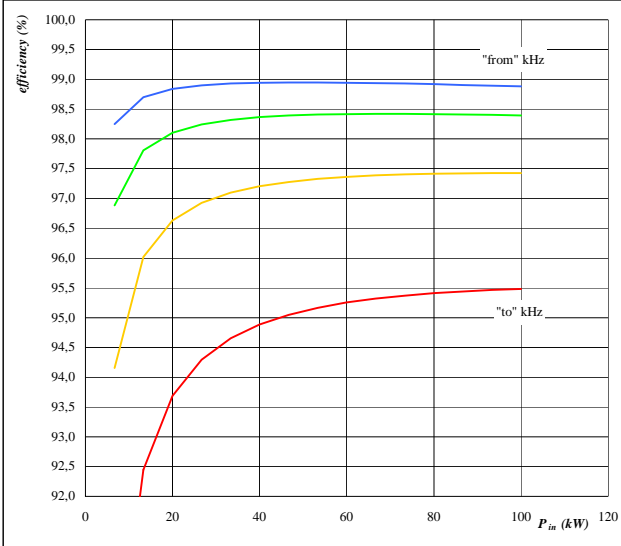
Conditions: Tj= T_{jmax}-25°C

          Vin   250 V   DC link=   350 V
parameter:

Sw. freq.   fsw from   16   kHz to   128 kHz