

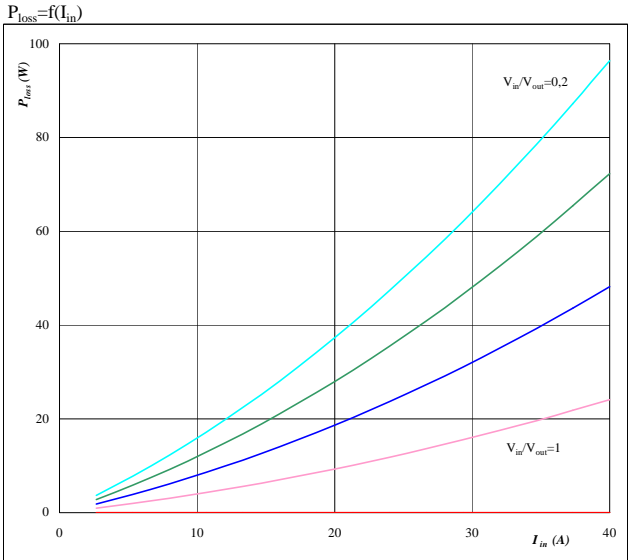
flowBOOST DC Boost Application 1200V/40A

General conditions

BOOST	
V_{GEon}	= 15 V
V_{GEoff}	= 0 V
R_{gon}	= 4 Ω
R_{goff}	= 4 Ω

Figure 1. IGBT

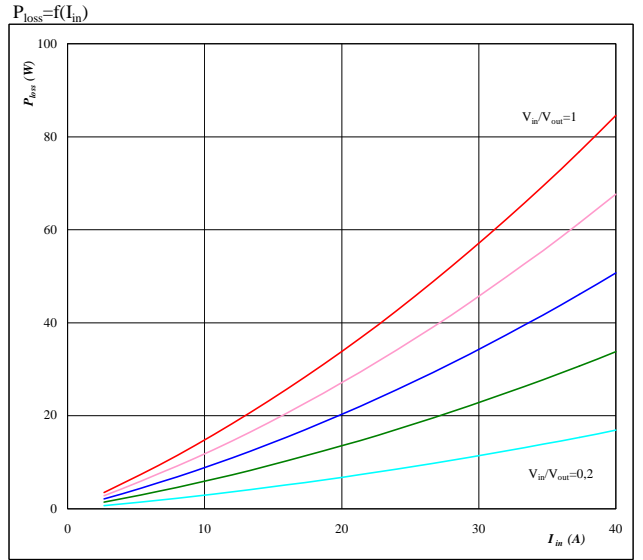
Typical average static loss as a function of input current I_{RMS}



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

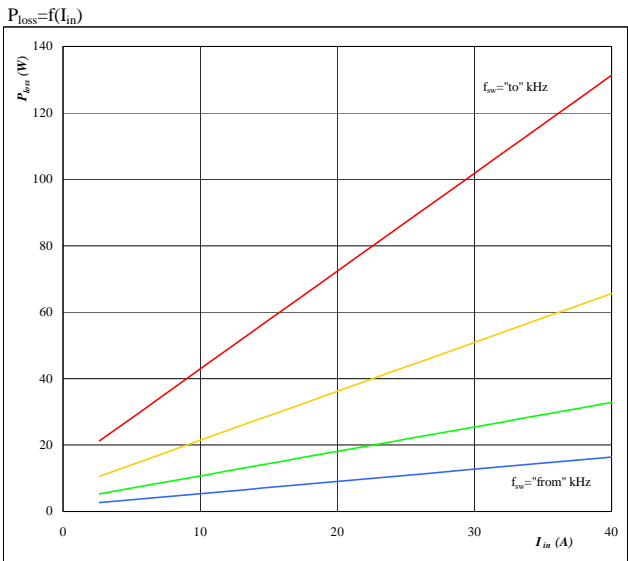
Typical average static loss as a function of input current I_{RMS}



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

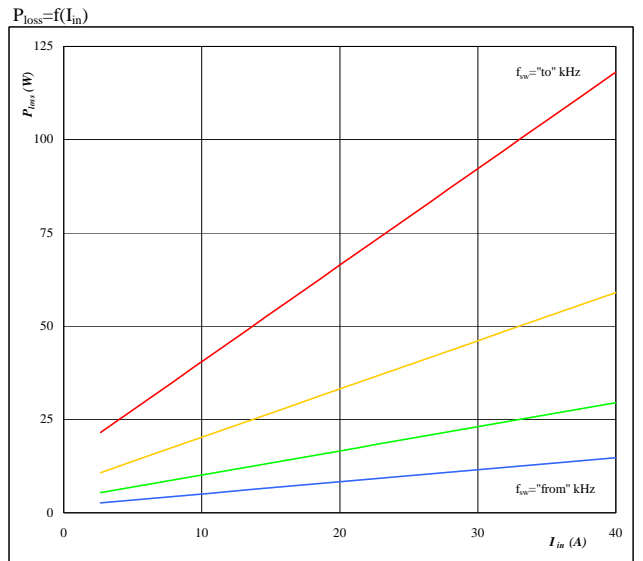
Typical average switching loss as a function of input current



Conditions: $T_j = 125$ °C
 $V_{out} = 700$ V
Sw. freq. fsw from 4 kHz to 32 kHz in steps of factor 2

Figure 4. FWD

Typical average switching loss as a function of input current



Conditions: $T_j = 125$ °C
 $V_{out} = 700$ V
Sw. freq. fsw from 4 kHz to 32 kHz in steps of factor 2

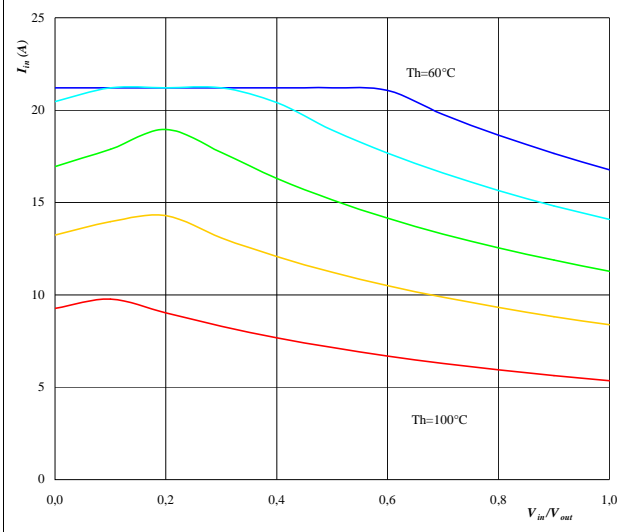
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Figure 5. per PHASE

Typical available input current as a function of

V_{in}/V_{out}

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

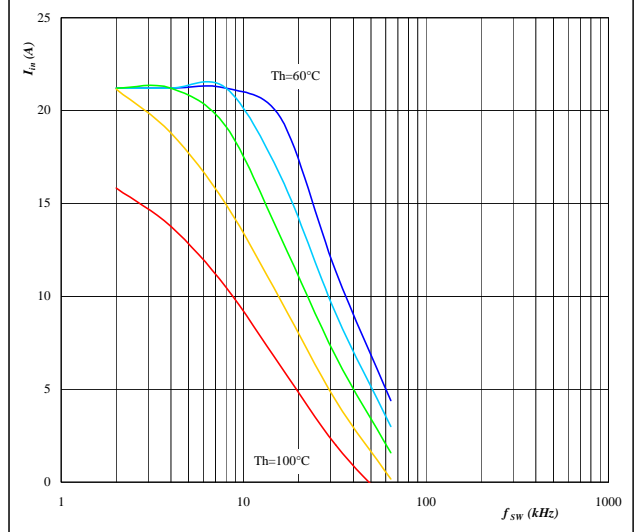


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 700 V $f_{sw} = 16$ kHz
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 6. per PHASE

Typical available input current as a function of switching frequency

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



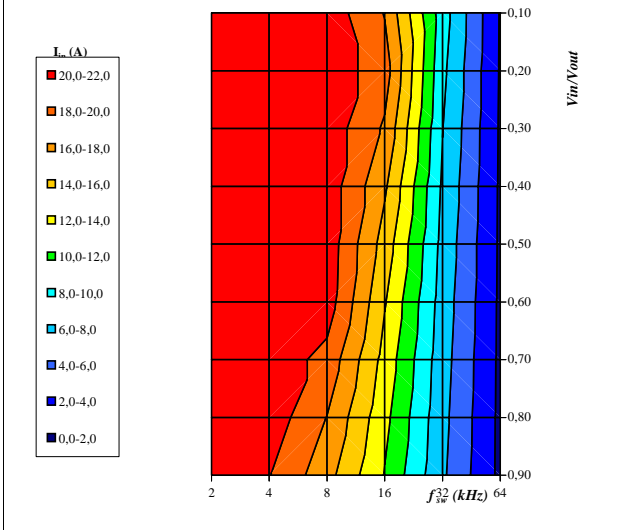
Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 700 V $V_{in} = 500$ V
 parameter: Heatsink temp.
 Th from 60 °C to 100 °C
 in 10 °C steps

Figure 7. per PHASE

Typical available input current as a function of

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

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

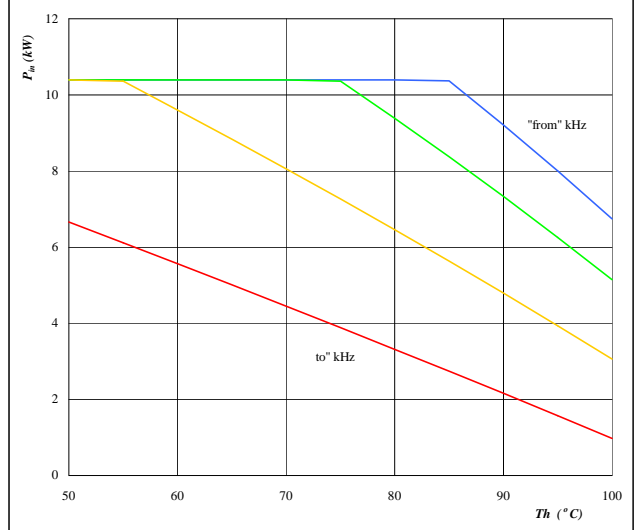


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 DC link= 700 V
 Th= 80 °C

Figure 8. per PHASE

Typical available electric input power as a function of heatsink temperature

$P_{in}=f(T_h)$

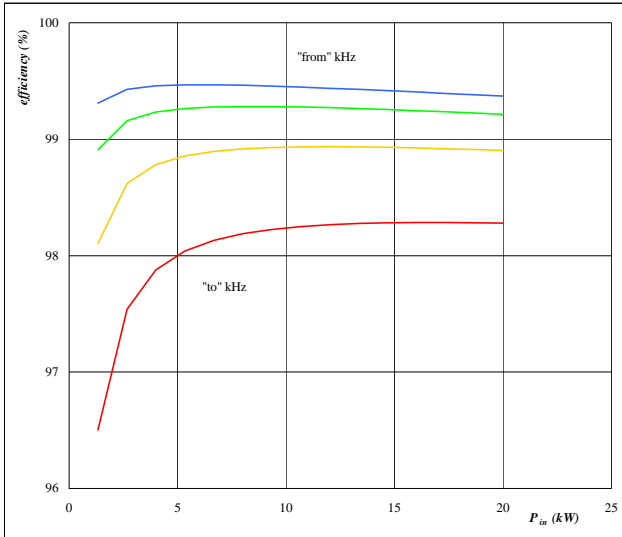


Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 $V_{in} = 500$ V DC link= 700 V
 Sw. freq. f_{sw} from 4 kHz to 32 kHz

Figure 9. per PHASE

Typical efficiency as a function of input power

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


 Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$
 $V_{in} = 500\text{ V}$ DC link = 700 V

parameter:

Sw. freq. fsw from 4 kHz to 32 kHz