flowBOOST 0 — DC Boost Application — 650V/50A

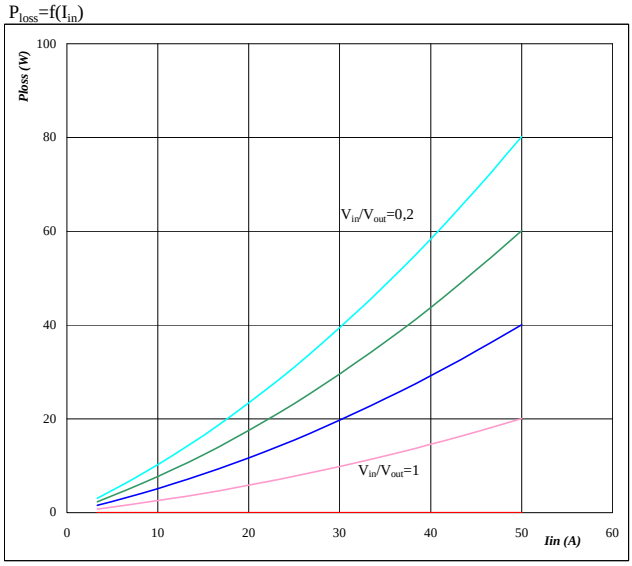
General conditions

BOOST		
V_{GEon}	=	400 V
V_{GEoff}	=	0 V
R_{gon}	=	8 Ω
R_{goff}	=	8 Ω

Figure 1. Boost 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

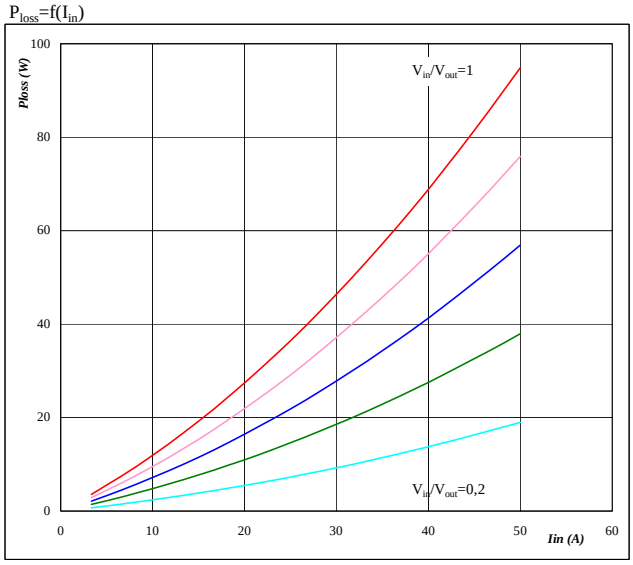
parameter: V_{in}/V_{out} from 0,2 to 1,0

in 0,2 steps

Figure 2. Boost FWD

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

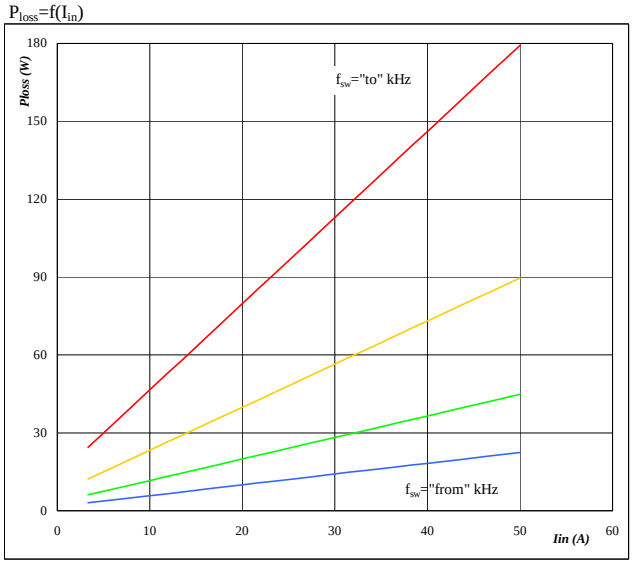
parameter: V_{in}/V_{out} from 0,2 to 1,0

in 0,2 steps

Figure 3. Boost IGBT

Typical average switching loss as a function of input current

$P_{loss}=f(I_{in})$



Conditions: Tj= 150 °C

V_{out} = 400 V

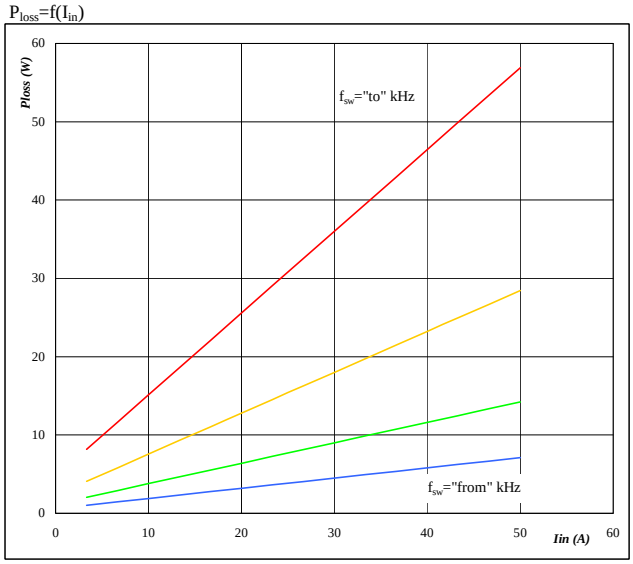
Sw. freq. fsw from 16 kHz to 128 kHz

in steps of factor 2

Figure 4. Boost FWD

Typical average switching loss as a function of input current

$P_{loss}=f(I_{in})$



Conditions: Tj= 150 °C

V_{out} = 400 V

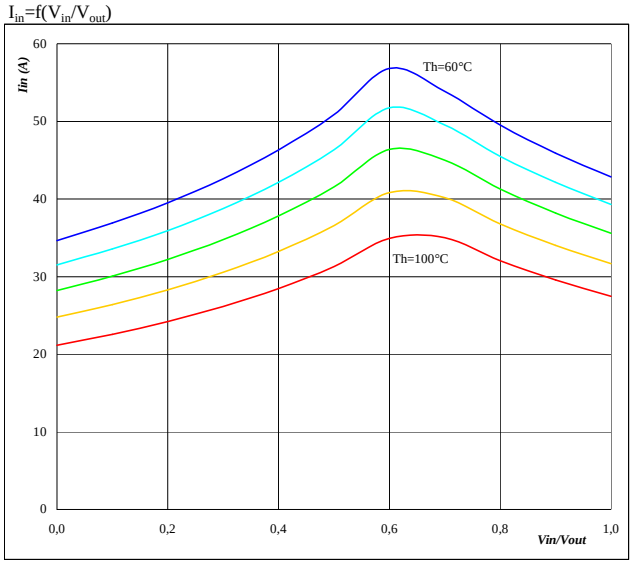
Sw. freq. fsw from 16 kHz to 128 kHz

in steps of factor 2

Figure 5. per Leg

Typical available input current as a function of V_{in}/V_{out}

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

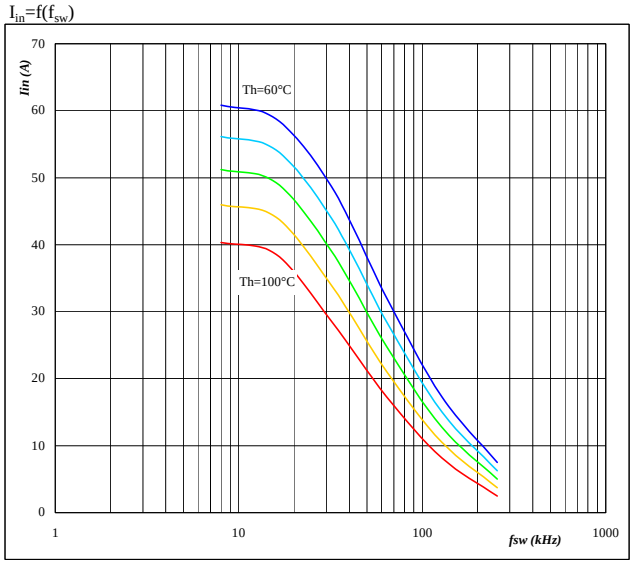


Conditions: T_j= T_{jmax}-25°C
DC link= 400 V f_{sw}= 20 kHz
parameter: Heatsink temp.
Th from 60 °C to 100 °C
in 10 °C steps

Figure 6. per Leg

Typical available input current as a function of switching frequency

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

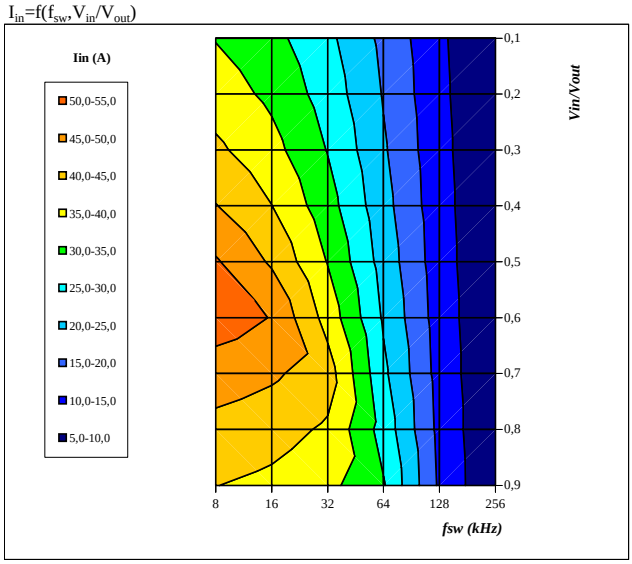


Conditions: T_j= T_{jmax}-25°C
DC link= 400 V Vin 250 V
parameter: Heatsink temp.
Th from 60 °C to 100 °C
in 10 °C steps

Figure 7. per Leg

Typical available input current as a function of f_{sw} and V_{in}/V_{out}

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

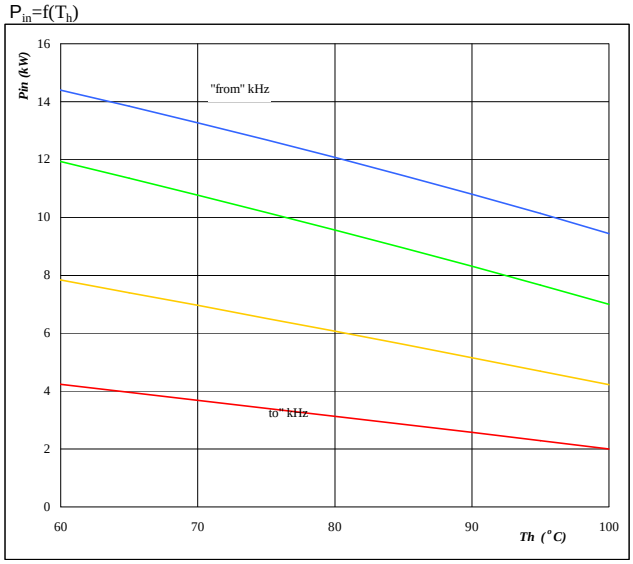


Conditions: Tj= T_{jmax}-25°C
DC link= 400 V
Th= 80 °C

Figure 8. per Leg

Typical available electric input power as a function of heatsink temperature

$P_{in}=f(T_h)$

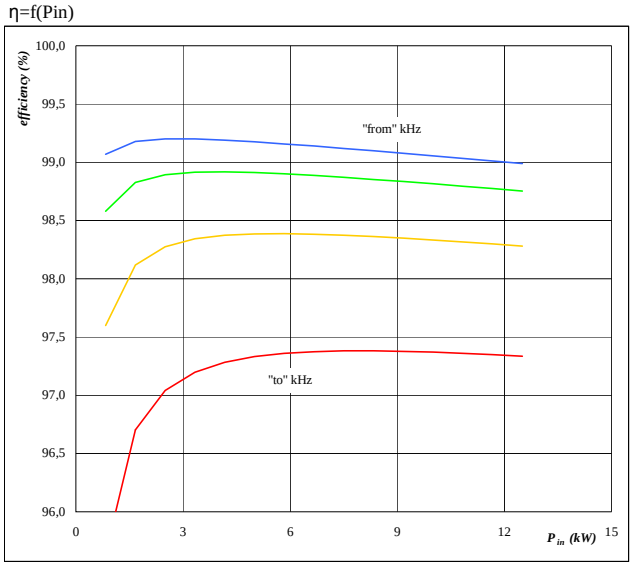


Conditions: Tj= T_{jmax}-25°C
Vin 250 V DC link= 400 V
Sw. freq. fsw from 16 kHz to 128 kHz

Figure 9. **per Leg**

Typical efficiency as a function of input power

η=f(Pin)



Conditions: Tj= T_{jmax}-25°C

Vin 250 V DC link= 400 V

parameter:

Sw. freq. fsw from 16 kHz to 128 kHz