

**General conditions****BOOST**

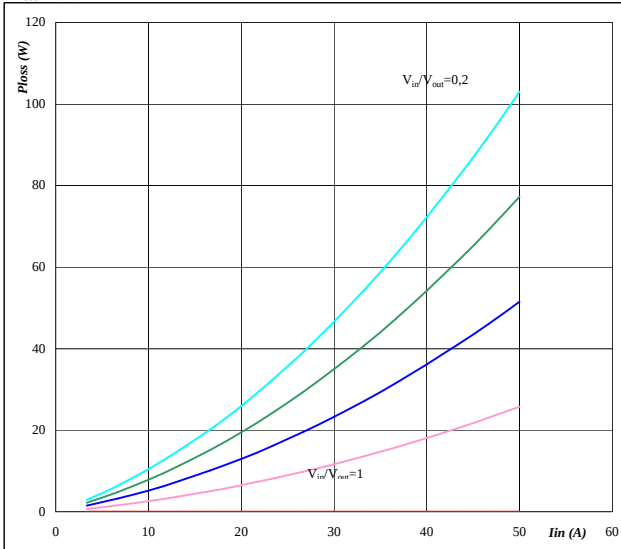
V_{GEon}	=	15 V
V_{GEoff}	=	0 V
R_{gon}	=	4 Ω
R_{goff}	=	4 Ω

Figure 1.

IGBT

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

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



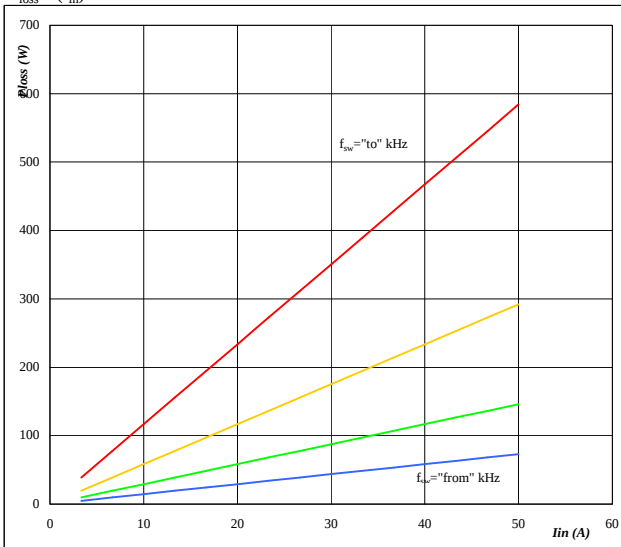
Conditions: $T_j = 150$ °C
 Ratio of input DC voltage to output DC voltage
 parameter: V_{in}/V_{out} from 0,2 to 1,0
 in 0,2 steps

Figure 3.

IGBT

Typical average switching loss as a function of input current

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



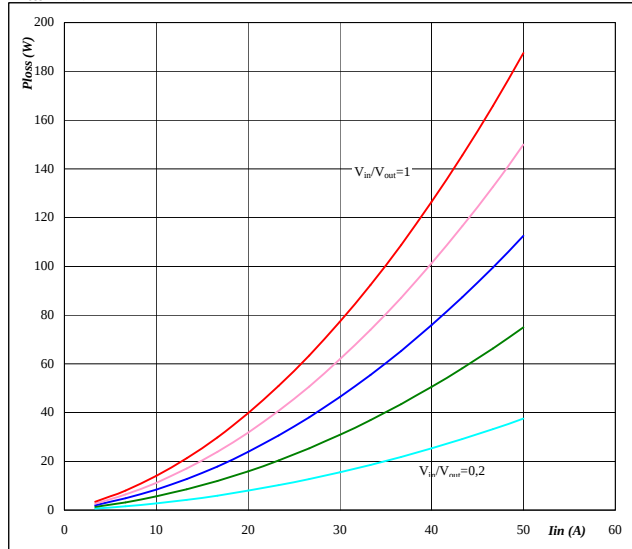
Conditions: $T_j = 150$ °C
 $V_{out} = 700$ V
 Sw. freq. f_{sw} from 16 kHz to 128 kHz
 in steps of factor 2

Figure 2.

FWD

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

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



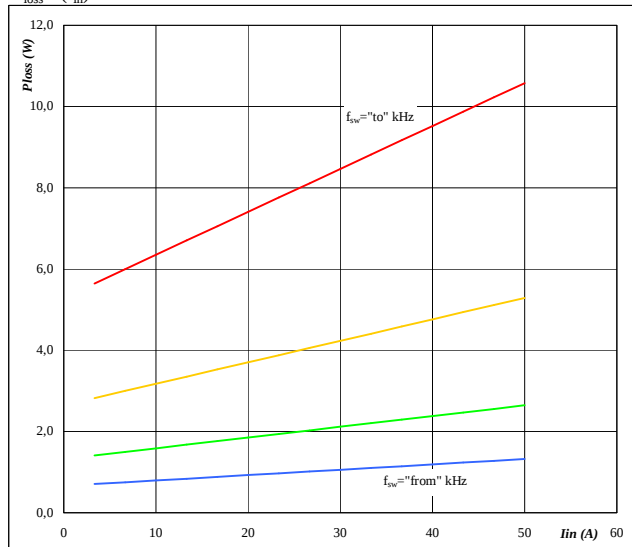
Conditions: $T_j = 150$ °C
 Ratio of input DC voltage to output DC voltage
 parameter: V_{in}/V_{out} from 0,2 to 1,0
 in 0,2 steps

Figure 4.

FWD

Typical average switching loss as a function of input current

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



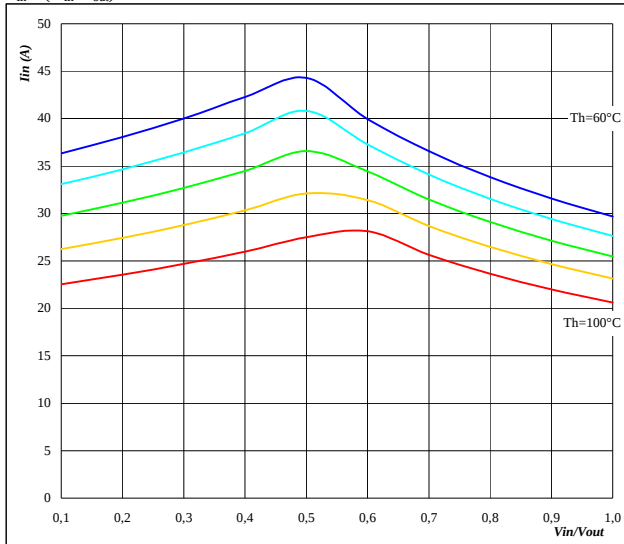
Conditions: $T_j = 150$ °C
 $V_{out} = 700$ V
 Sw. freq. f_{sw} from 16 kHz to 128 kHz
 in steps of factor 2

**Figure 5.** per Leg

Typical available input current as a function of

$$V_{in}/V_{out}$$

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

Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$ DC link= 700 V $f_{sw} = 20$ kHz

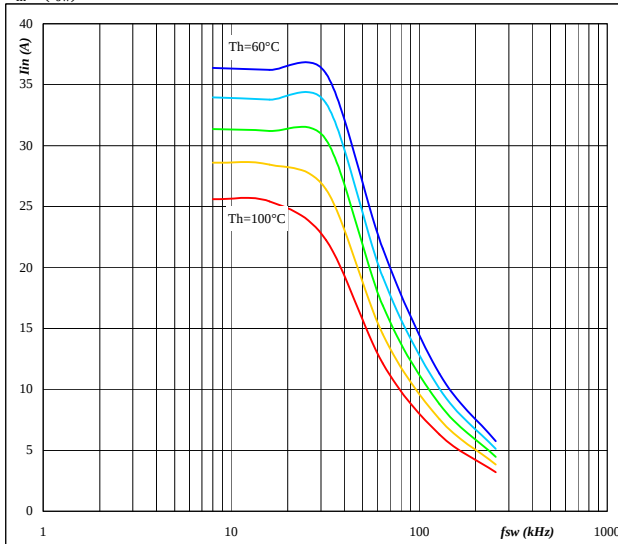
parameter: Heatsink temp.

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

parameter: Heatsink temp.

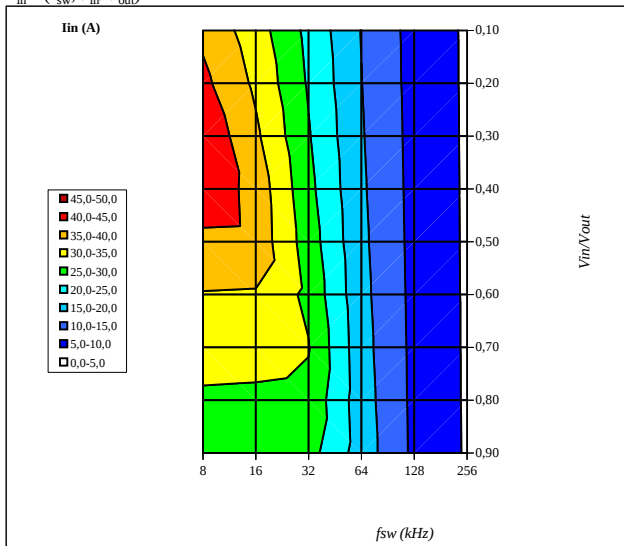
Th from	60	°C to	100	°C
in	10	°C	steps	

Figure 7. per Leg

Typical available input current as a function of

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

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

Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$

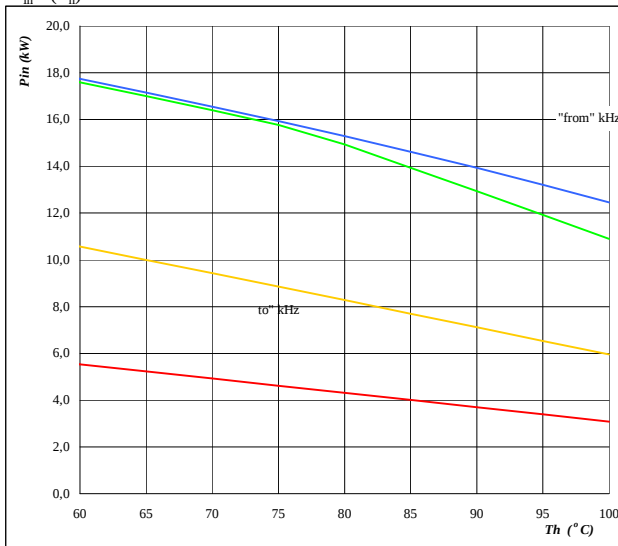
DC link= 700 V

Th= 80 °C

Figure 8. per Leg

Typical available electric input power as a function of heatsink temperature

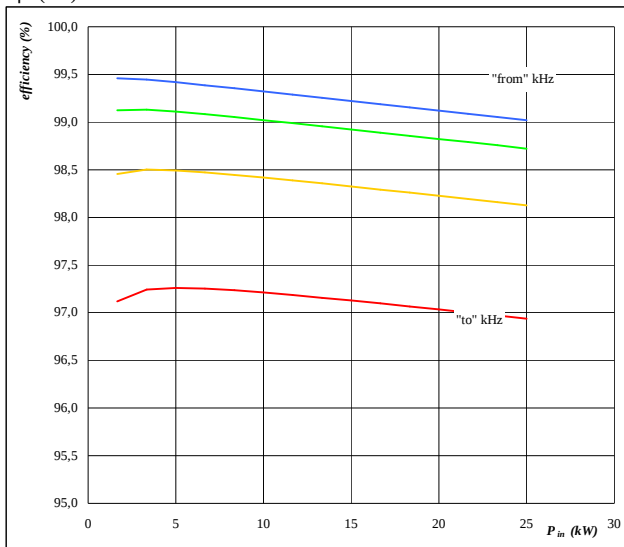
$$P_{in}=f(T_h)$$

Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$ $V_{in} = 500$ V DC link= 700 VSw. freq. f_{sw} from 16 kHz to 128 kHz

**Figure 9.** per Leg

Typical efficiency as a function of
input power

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



Conditions: $T_j = T_{jmax} - 25^\circ\text{C}$

Vin 500 V DC link= 700 V

parameter:

Sw. freq. fsw from 16 kHz to 128 kHz