

flow BOOST 0 DC Boost Application 1200 V / 40 A

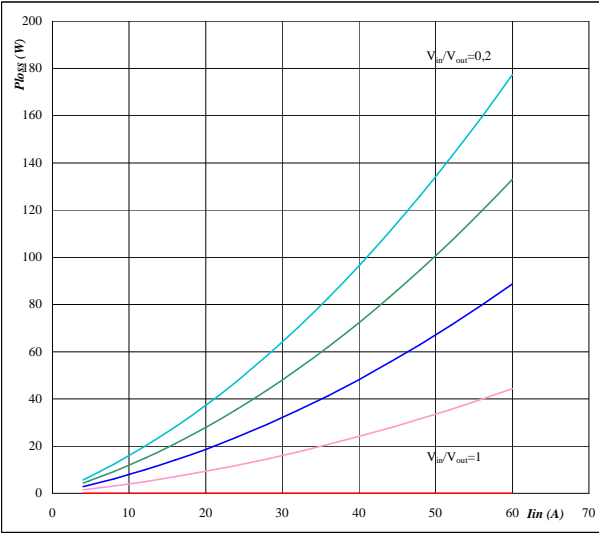
General conditions

| 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}

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

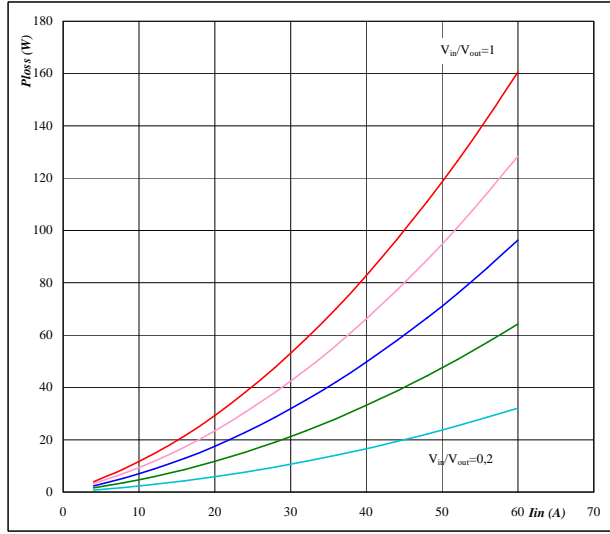


Conditions $T_j = 125$ °C
 Ratio of input DC voltage to output DC voltage parameter V_{in}/V_{out} from 0,2 to 1,0 in 0,2 steps

Figure 2. FWD

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

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

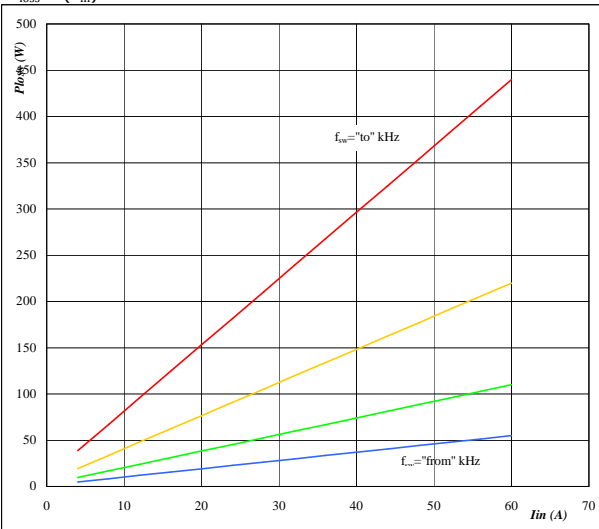


Conditions $T_j = 125$ °C
 Ratio of input DC voltage to output DC voltage parameter V_{in}/V_{out} from 0,2 to 1,0 in 0,2 steps

Figure 3. IGBT

Typical average switching loss as a function of input current

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

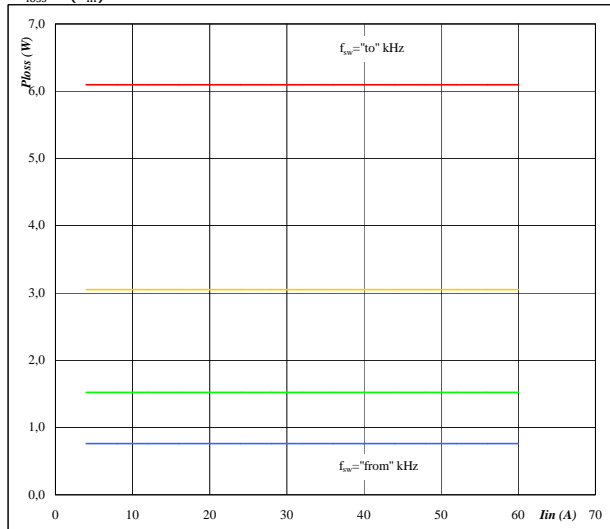


Conditions $T_j = 125$ °C
 $V_{out} = 700$ V
 Sw. freq. f_{sw} from 16 kHz to 128 kHz in steps of factor 2

Figure 4. FWD

Typical average switching loss as a function of input current

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



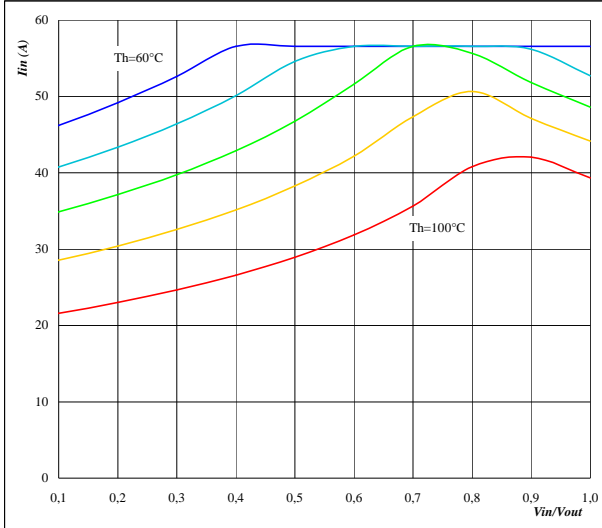
Conditions $T_j = 125$ °C
 $V_{out} = 700$ V
 Sw. freq. f_{sw} from 16 kHz to 128 kHz in steps of factor 2



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Figure 5. per Leg

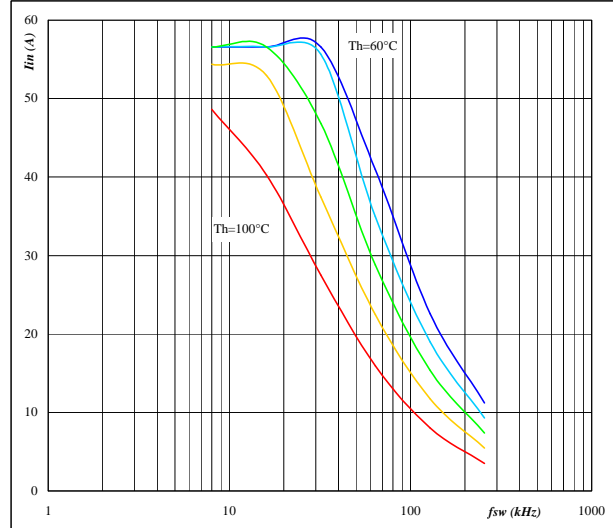
Typical available input current as a function of V_{in}/V_{out}
 $I_{in} = f(V_{in}/V_{out})$



Conditions $T_j = T_{jmax} - 25^\circ\text{C}$
 DC-link= 700 V $f_{sw} = 20$ kHz
 parameter Heatsink temp.
 T_h from 60 °C to 100 °C
 in 10 °C steps

Figure 6. per Leg

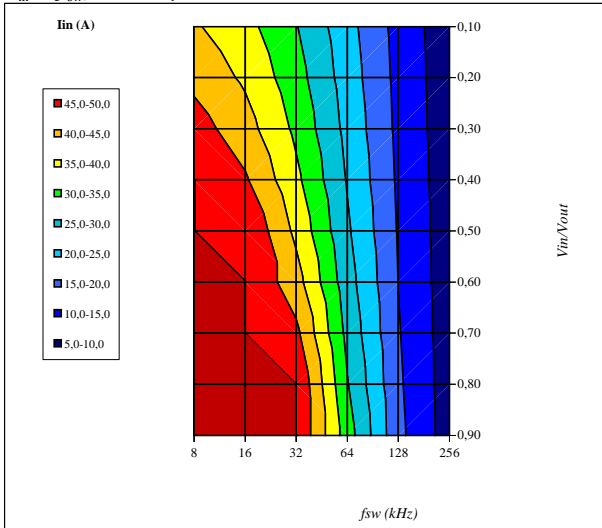
Typical available input current as a function of switching frequency
 $I_{in} = f(f_{sw})$



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

Figure 7. per Leg

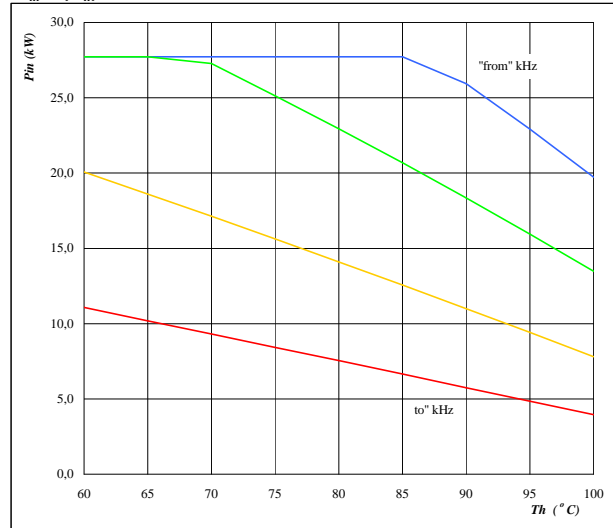
Typical available input current as a function of f_{sw} and V_{in}/V_{out}
 $I_{in} = f(f_{sw}, V_{in}/V_{out})$



Conditions $T_j = T_{jmax} - 25^\circ\text{C}$
 DC-link= 700 V
 $T_h = 80$ °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 V
 Sw. freq. f_{sw} from 16 kHz to 128 kHz

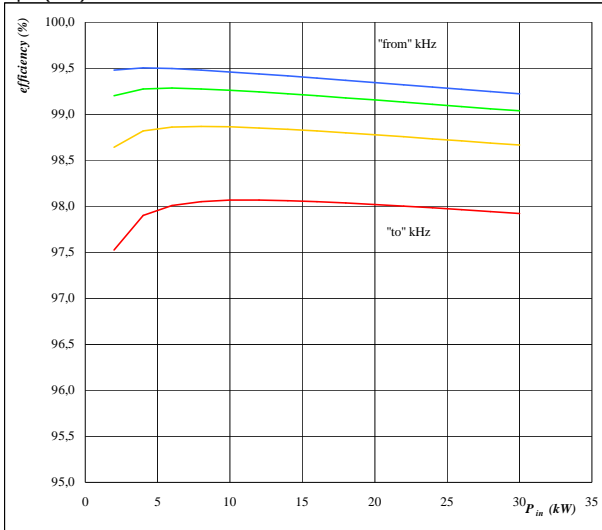


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Figure 9. **per Leg**

Typical efficiency as a function of input power

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



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