Vincotech

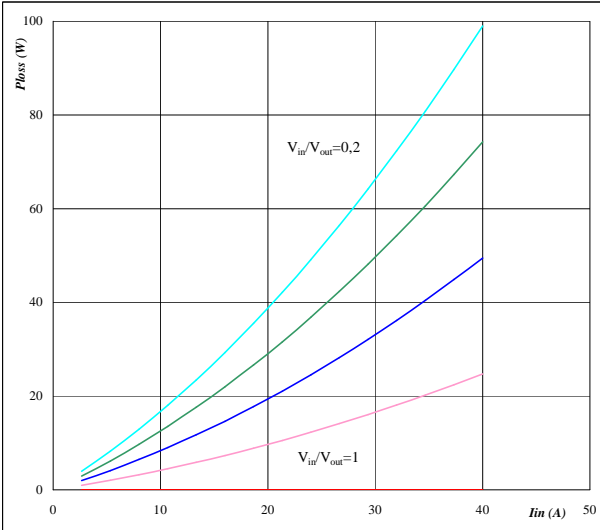| *flow* BOOST 0	DC Boost Application	1200 V / 40 A

General conditions

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

Figure 1.	IGBT

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

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

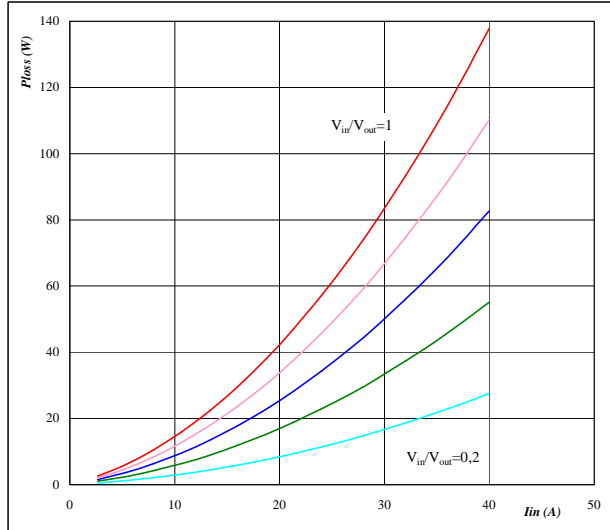Conditions T_j =   125   °C
Ratio of input DC voltage to output DC voltage
parameter V_{in} / V_{out} from   0,2   to   1,0
                                        in   0,2   steps

Figure 2.	FWD

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

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

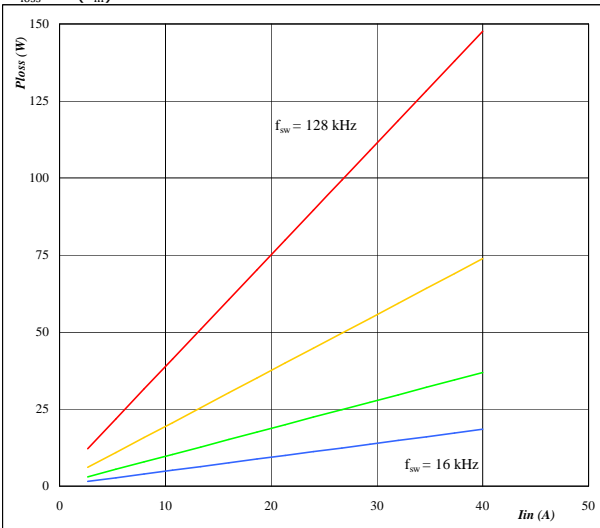Conditions T_j =   125   °C
Ratio of input DC voltage to output DC voltage
parameter V_{in} / V_{out} from   0,2   to   1,0
                                        in   0,2   steps

Figure 3.	IGBT

Typical average switching loss as a function of input current

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

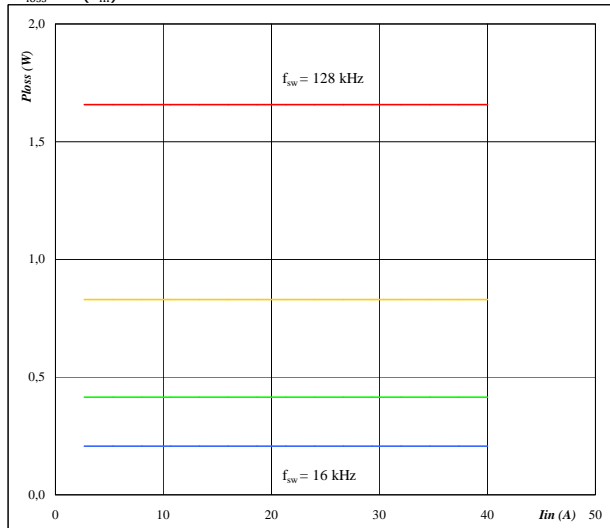Conditions T_j =   125   °C
                  V_{out} =   350   V
Sw. freq.   fsw from   16   kHz to   128   kHz
               in steps of factor 2

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} =   350   V
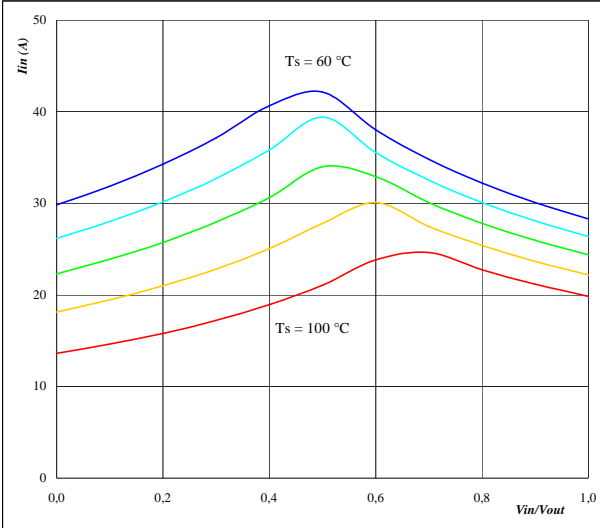Sw. freq.   fsw from   16   kHz to   128   kHz
               in steps of factor 2

| **flow BOOST 0** | **DC Boost Application** | **1200 V / 40 A** |

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
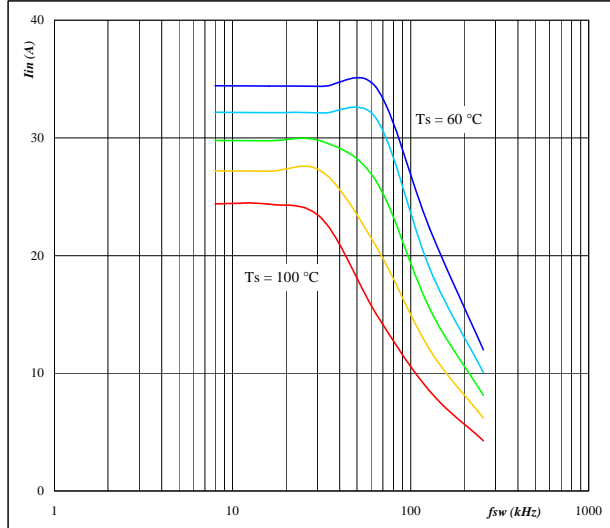DC link=   350   V $f_{sw}=$ 20   kHz
parameter Heatsink temp.
              Th from   60   °C to   100   °C
                    in   10   °C   steps

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 V_{in} 250   V
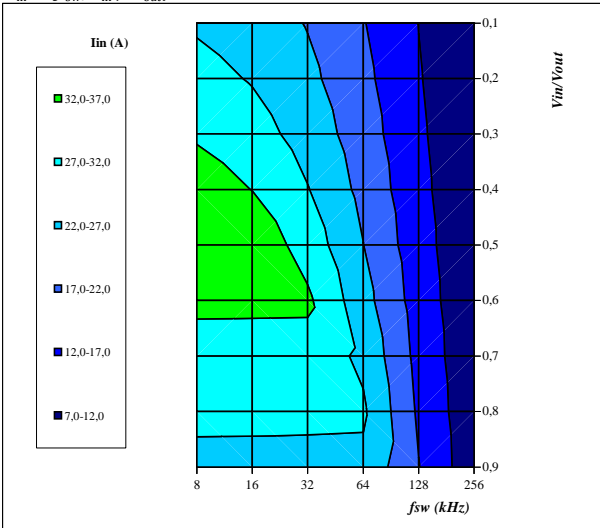parameter Heatsink temp.
              Th from   60   °C to   100   °C
                    in   10   °C   steps

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 $T_j = T_{jmax}$-25   °C
              DC link=   350 V
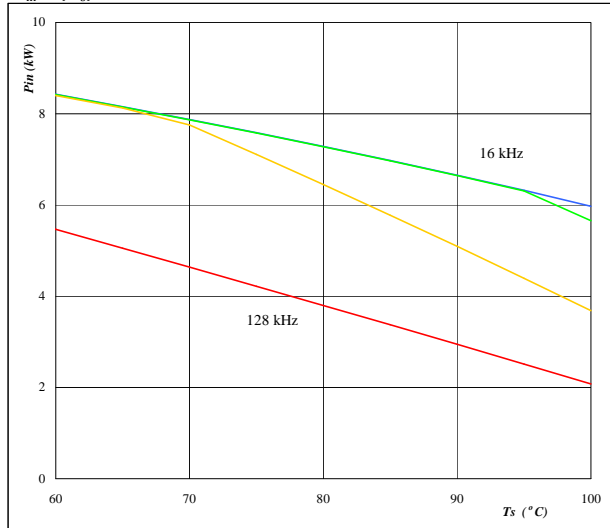 $T_s =$ 80 °C

Figure 8.   **per PHASE**

Typical available electric input power as a function of heatsink temperature

$P_{in}=f(T_s)$

Conditions $T_j = T_{jmax}$-25   °C
              V_{in} 250 V   DC link=   350 V
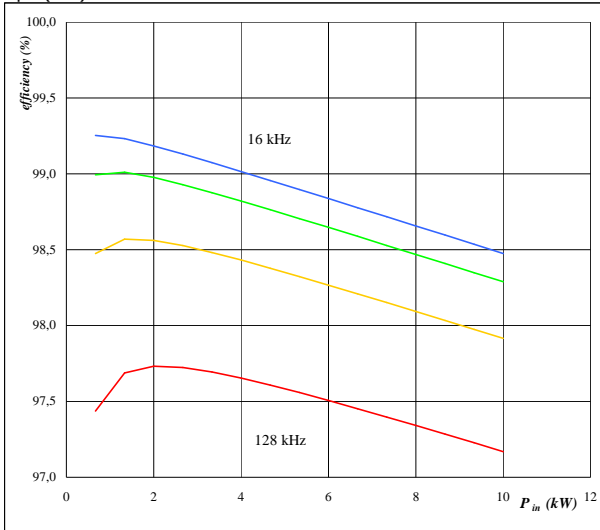Sw. freq.   fsw from   16   kHz to   128   kHz

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Figure 9.   **per PHASE**

Typical efficiency as a function of input power

η=f(Pin)

Conditions $T_j = T_{jmax}$-25   °C
         V_{in} 250 V   DC link=   350 V
parameter:
Sw. freq.   fsw from   16   kHz to   128 kHz