flowSOL 1 BI	DC Boost Application	650V/80mΩ

General conditions

BOOST		
V_{GEon}	=	10 V
V_{GEoff}	=	0 V
R_{gon}	=	2 Ω
R_{goff}	=	2 Ω

Figure 1. MOSFET

Typical average static loss as a function of input current Ii$_{RMS}$
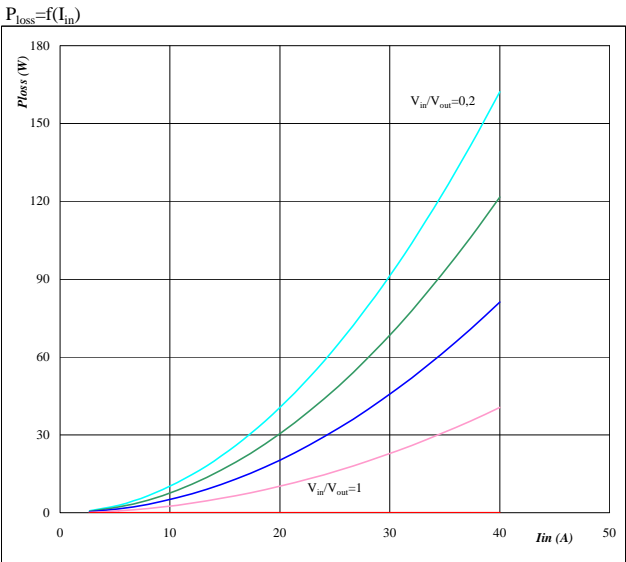
$P_{loss}=f(I_{in})$

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 Ii$_{RMS}$
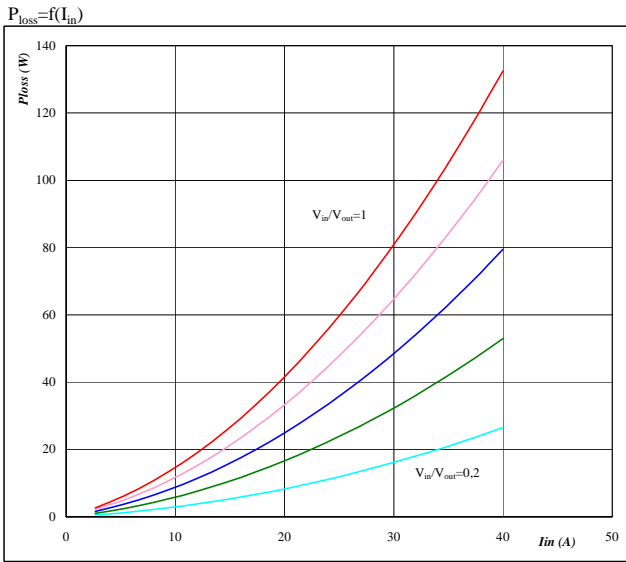
$P_{loss}=f(I_{in})$

Conditions: T_j = 125 °C

Ratio of input DC voltage to output DC voltage

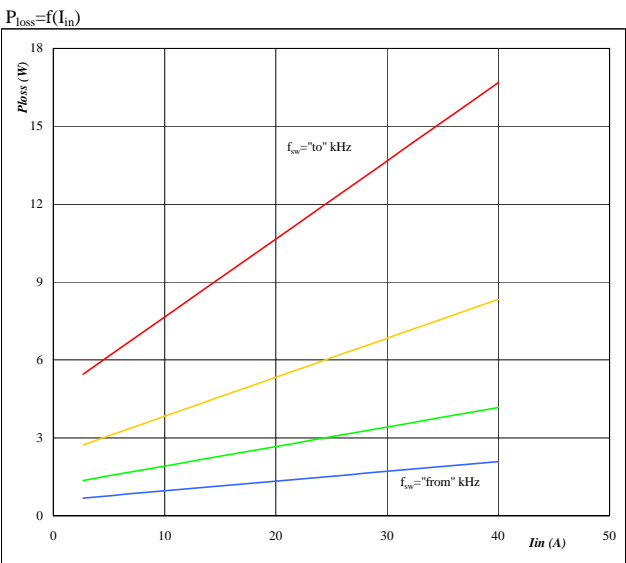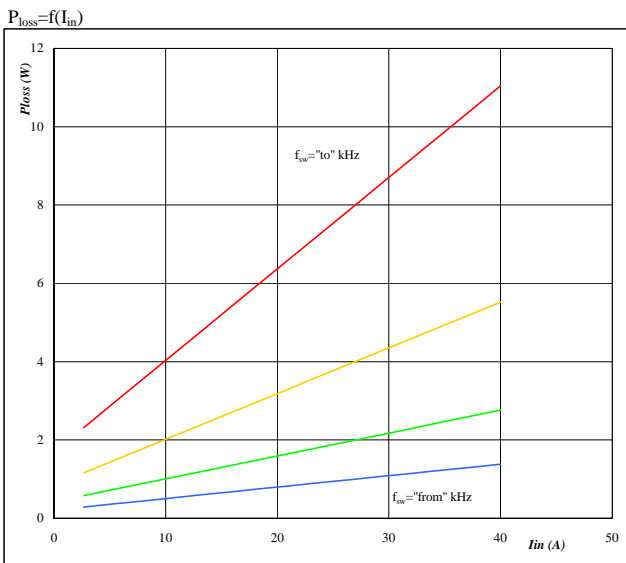parameter: V_{in}/V_{out} from 0,2 to 1,0 in 0,2 steps

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Figure 3. MOSFET

Typical average switching loss as a function of input current

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

Conditions: Tj = 125 °C

V_{out} = 400 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: Tj = 125 °C

V_{out} = 400 V

Sw. freq. fsw from 16 kHz to 128 kHz

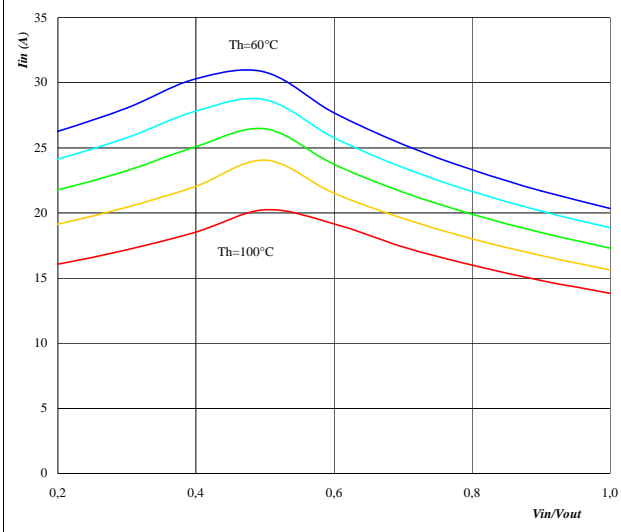in steps of factor 2

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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:		$T_j=T_{jmax}-25°C$				
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

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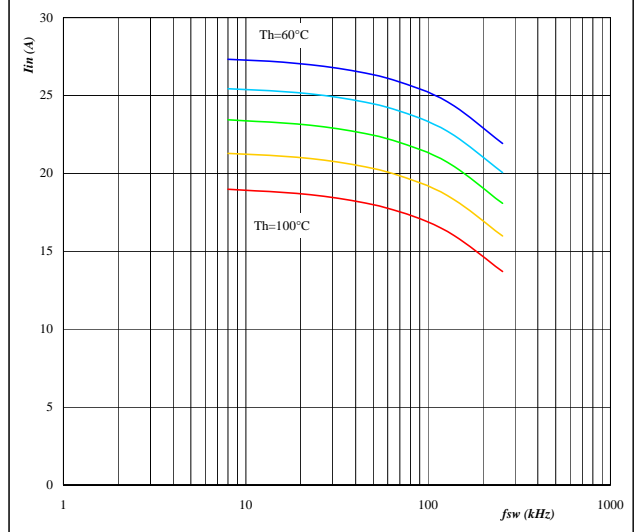
Conditions:		$T_j=T_{jmax}-25°C$				
DC link=	400	V		Vin	250	V
parameter:	Heatsink temp.					
	Th from	60	°C to	100	°C	
	in	10	°C	steps		

Figure 7. per Leg

Typical available input current as a function of f_{sw} and V_{in}/V_{out}
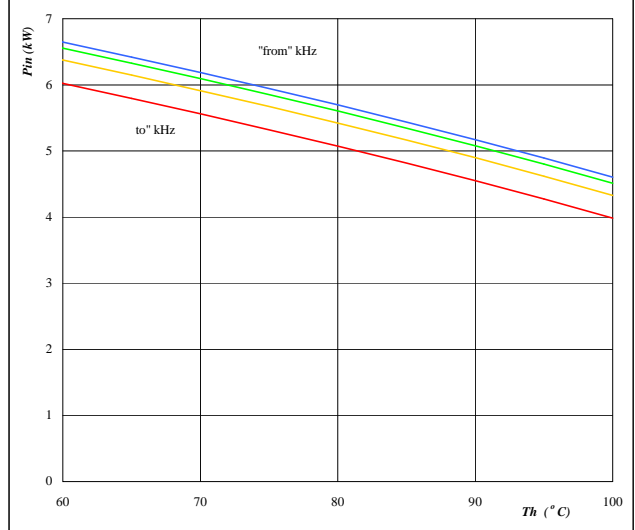
$I_{in}=f(f_{sw},V_{in}/V_{out})$
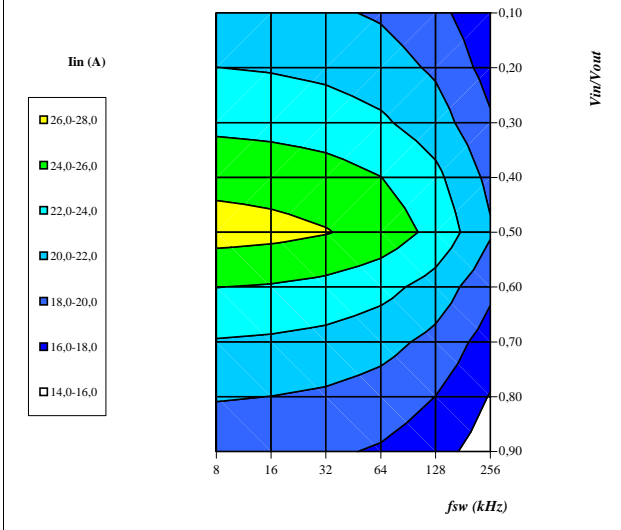
Conditions:		Tj= $T_{jmax}-25°C$
	DC link=	400 V
	Th=	80 °C

Figure 8. per Leg

Typical available electric input power as a function of heatsink temperature
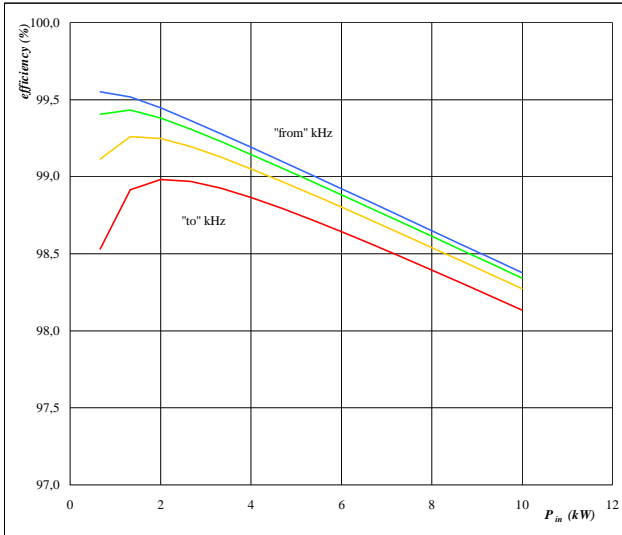
$P_{in}=f(T_h)$

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

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Figure 9. | **per Leg**

Typical efficiency as a function of input power

$\eta = f(Pin)$

Conditions: Tj= T_{jmax}-25°C

     Vin   250 V   DC link=   400 V

parameter:

Sw. freq.   fsw from   16   kHz to   128 kHz