

**General conditions**
**3phase SPWM**

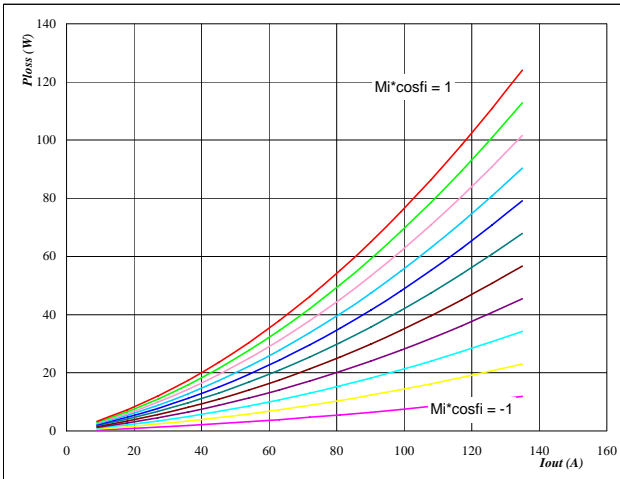
$V_{GEon}$	=	15 V
$V_{GEoff}$	=	-15 V
$R_{gon}$	=	4 $\Omega$
$R_{goff}$	=	4 $\Omega$

**Figure 1**

IGBT

**Typical average static loss as a function of output current**

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


**At**
 $T_j = 150 \text{ } ^\circ\text{C}$ 

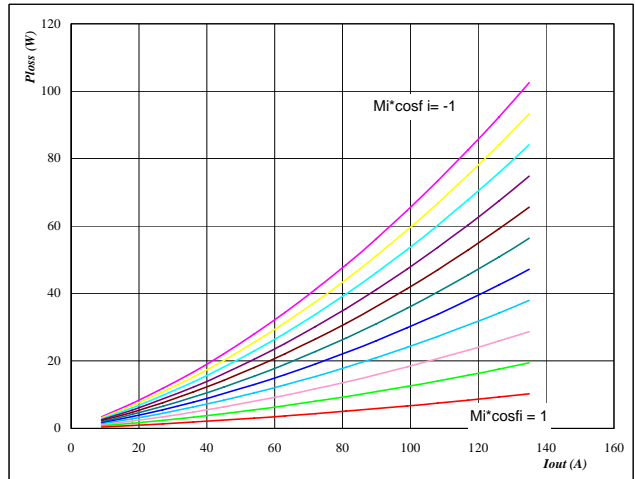
Mi\*cosfi from -1 to 1 in steps of 0,2

**Figure 2**

FRED

**Typical average static loss as a function of output current**

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


**At**
 $T_j = 150 \text{ } ^\circ\text{C}$ 

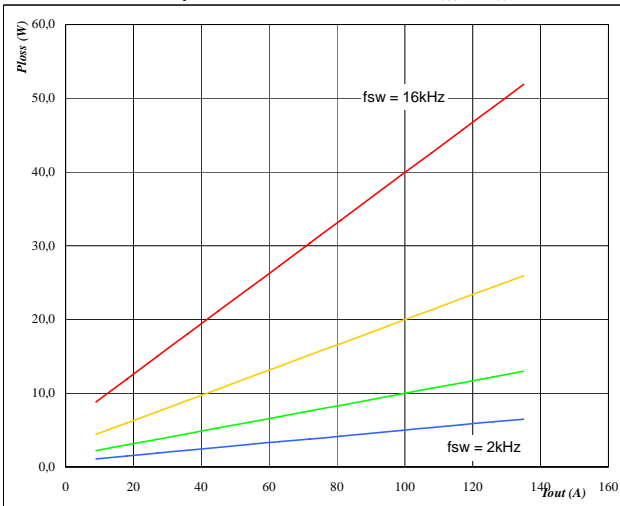
Mi\*cosfi from -1 to 1 in steps of 0,2

**Figure 3**

IGBT

**Typical average switching loss as a function of output current**

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


**At**
 $T_j = 150 \text{ } ^\circ\text{C}$ 

DC link = 320 V

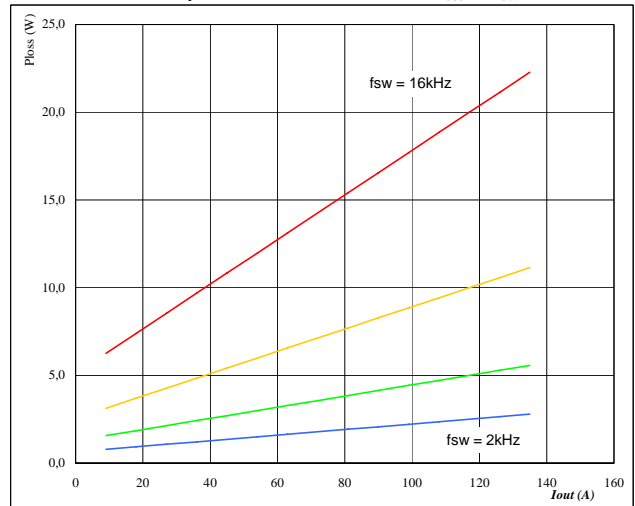
fsw from 2 kHz to 16 kHz in steps of factor 2

**Figure 4**

FRED

**Typical average switching loss as a function of output current**

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


**At**
 $T_j = 150 \text{ } ^\circ\text{C}$ 

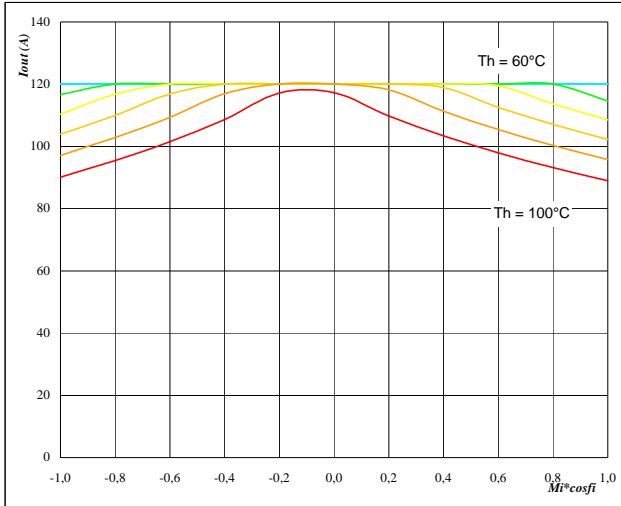
DC link = 320 V

fsw from 2 kHz to 16 kHz in steps of factor 2

**Figure 5** Phase

Typical available 50Hz output current as a function  $Mi \cdot \cos\phi_i$

$$I_{out} = f(Mi \cdot \cos\phi_i)$$

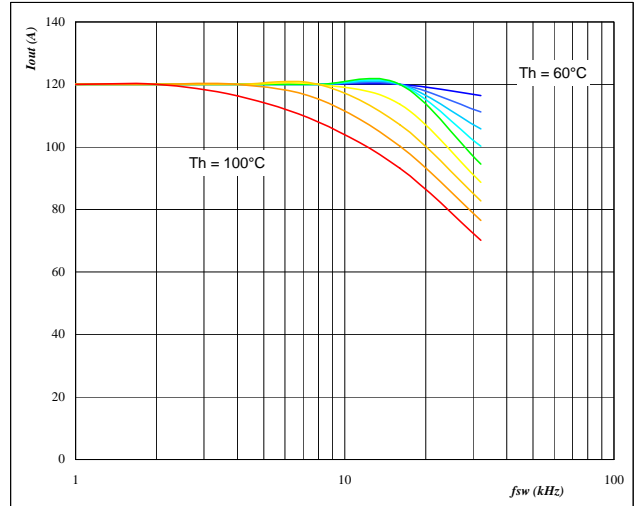


**At**  
 $T_j = 150 \text{ } ^\circ C$   
 DC link = 320 V  
 $f_{sw} = 16 \text{ kHz}$   
 Th from 60 °C to 100 °C in steps of 5 °C

**Figure 6** Phase

Typical available 50Hz output current as a function of switching frequency

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

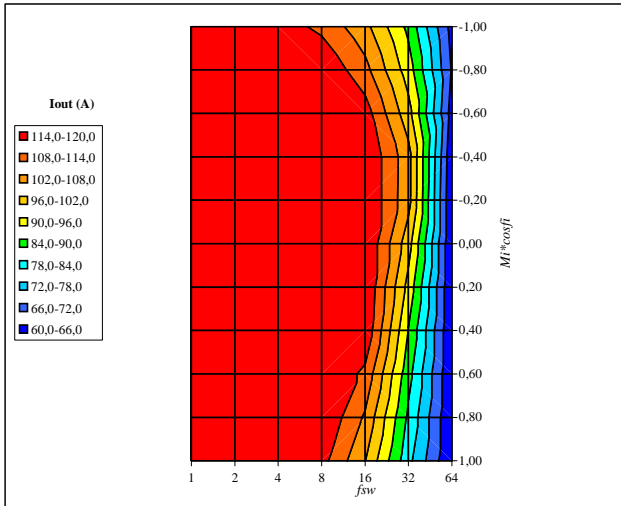


**At**  
 $T_j = 150 \text{ } ^\circ C$   
 DC link = 320 V  
 $Mi \cdot \cos\phi_i = 0,8$   
 Th from 60 °C to 100 °C in steps of 5 °C

**Figure 7** Phase

Typical available 50Hz output current as a function of  $Mi \cdot \cos\phi_i$  and switching frequency

$$I_{out} = f(f_{sw}, Mi \cdot \cos\phi_i)$$

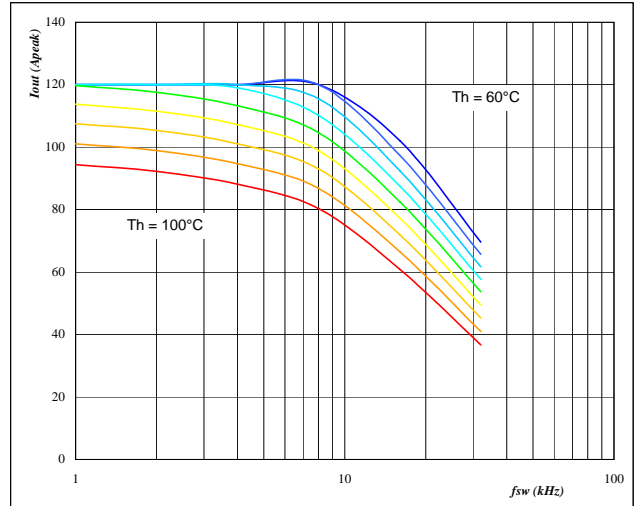


**At**  
 $T_j = 150 \text{ } ^\circ C$   
 DC link = 320 V  
 $T_h = 90 \text{ } ^\circ C$

**Figure 8** Phase

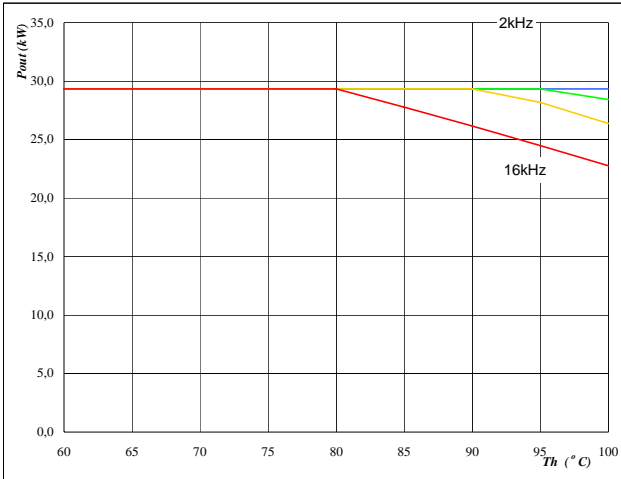
Typical available 0Hz output current as a function of switching frequency

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



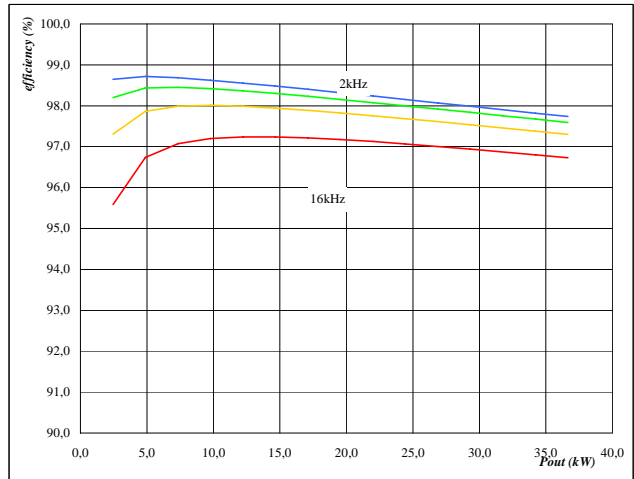
**At**  
 $T_j = 150 \text{ } ^\circ C$   
 DC link = 320 V  
 Th from 60 °C to 100 °C in steps of 5 °C  
 $Mi = 0$

**Figure 9** Inverter

**Typical available peak output power as a function of heatsink temperature**  
 $P_{out}=f(T_h)$ 


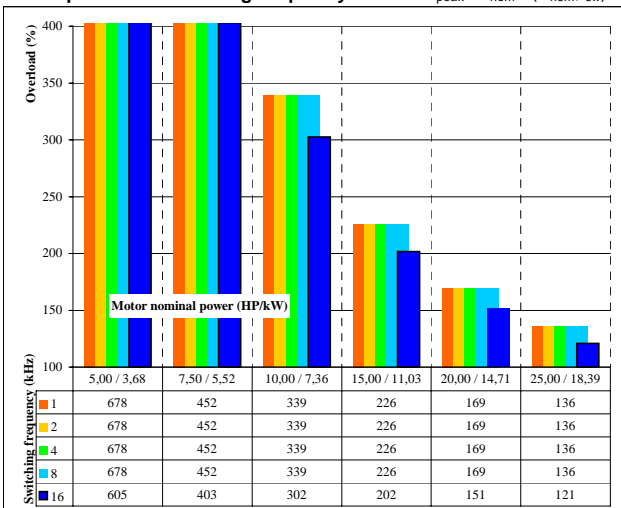
At  
 $T_j = 150 \text{ } ^\circ\text{C}$   
 DC link = 320 V  
 $M_i = 1$   
 $\cos\phi_i = 0,80$   
 fsw from 2 kHz to 16 kHz in steps of factor 2

**Figure 10** Inverter

**Typical efficiency as a function of output power**  
 $\text{efficiency}=f(P_{out})$ 


At  
 $T_j = 150 \text{ } ^\circ\text{C}$   
 DC link = 320 V  
 $M_i = 1$   
 $\cos\phi_i = 0,80$   
 fsw from 2 kHz to 16 kHz in steps of factor 2

**Figure 11** Inverter

**Typical available overload factor as a function of motor power and switching frequency**  
 $P_{peak} / P_{nom}=f(P_{nom}, f_{sw})$ 


At  
 $T_j = 150 \text{ } ^\circ\text{C}$   
 DC link = 320 V  
 $M_i = 1$   
 $\cos\phi_i = 0,8$   
 fsw from 1 kHz to 16kHz in steps of factor 2  
 $T_h = 90 \text{ } ^\circ\text{C}$   
 Motor eff = 0,85

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Final	Full Production	This datasheet contains final specifications. Vincotech reserves the right to make changes at any time without notice in order to improve design. The data contained is exclusively intended for technically trained staff.

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