flow PIM 0   # Output Inverter Application   **600 V / 15 A**

General conditions

3phase SPWM		
V_{GEon}	=	**15 V**
V_{GEoff}	=	**0 V**
R_{gon}	=	**16 Ω**
R_{goff}	=	**8 Ω**

Figure 1   **IGBT**

Typical average static loss as a function of output current

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

At
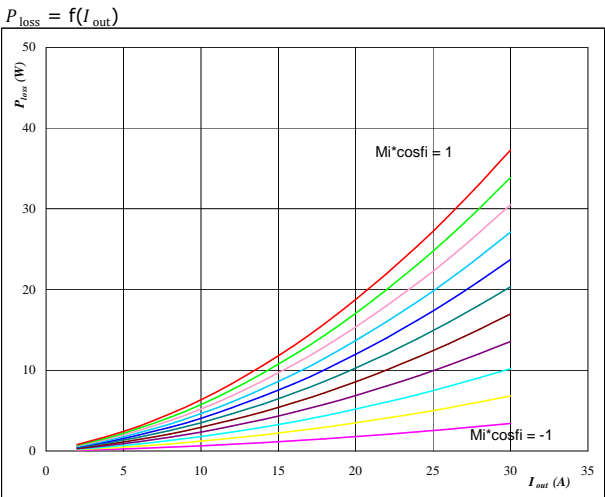
T_j = 125 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2   **FWD**

Typical average static loss as a function of output current

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

At
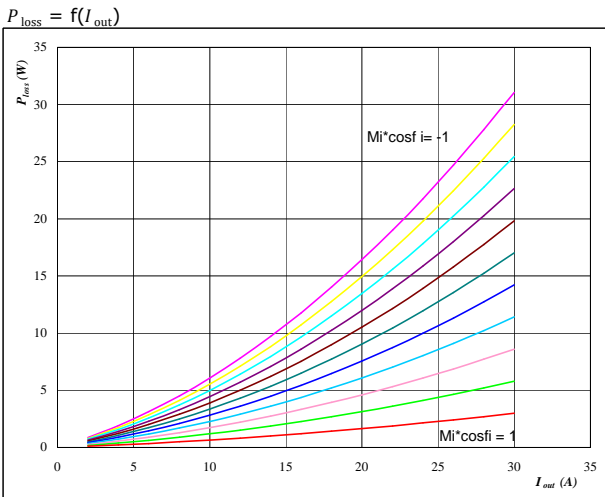
T_j = 125 °C

Mi*cosφ 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
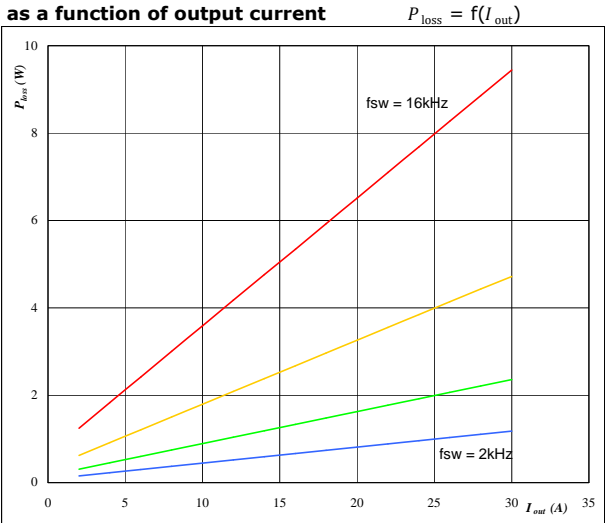
T_j = 125 °C

DC-link = 320 V

f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 4   **FWD**

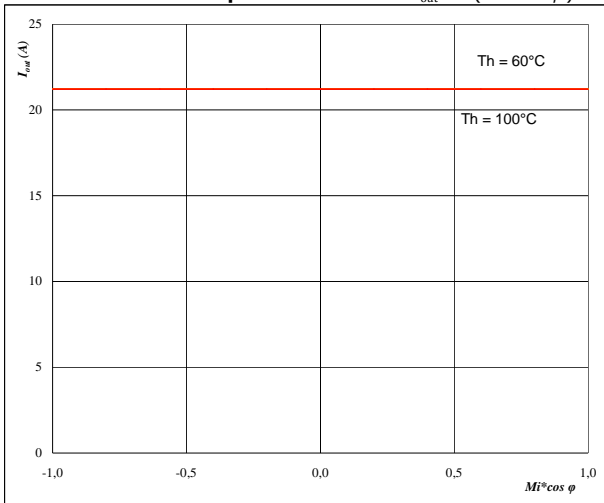**Typical average switching loss as a function of output current** $P_{loss} = f(I_{out})$

At

T_j = 125 °C

DC-link = 320 V

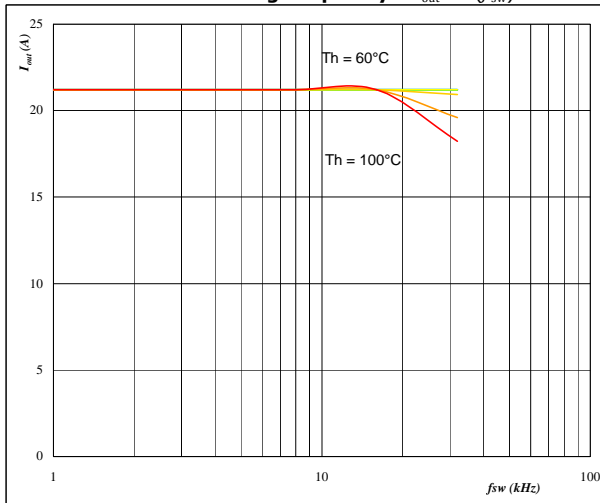f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 5	Phase

Typical available 50Hz output current as a function Mi*cosφ $I_{out} = f(\text{Mi}*\cos\varphi)$

At

T_j = 125 °C
DC-link = 320 V
f_{sw} = 4 kHz
T_s 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 = 125 °C
DC-link = 320 V
Mi*cos φ = 0,8
T_s from 60 °C to 100 °C in steps of 5 °C

Figure 7	Phase

Typical available 50Hz output current as a function of Mi*cos φ and switching frequency $I_{out} = f(f_{sw}, \text{Mi}*\cos\varphi)$

At

T_j = 125 °C
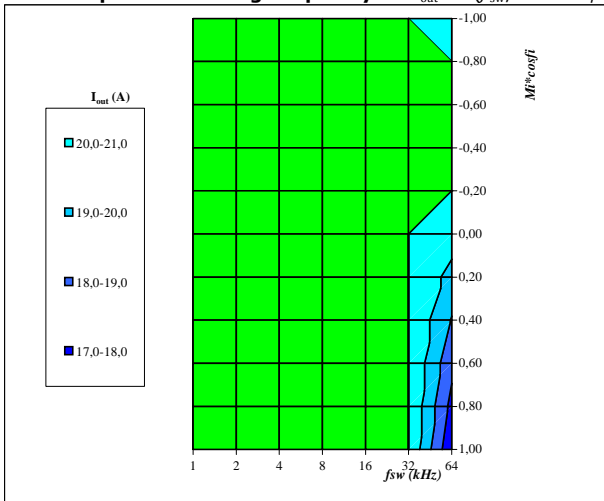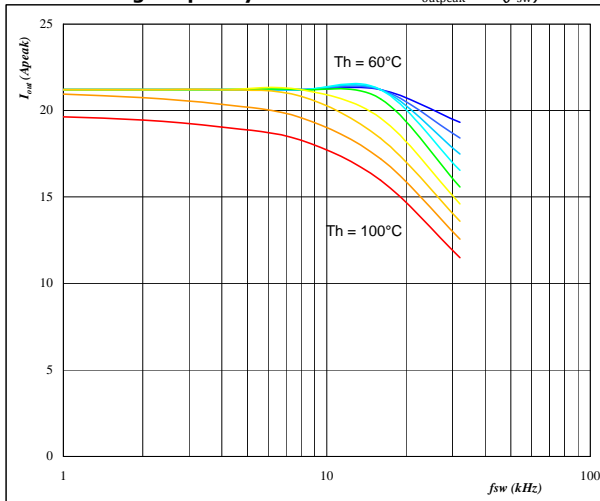DC-link = 320 V
T_s = 80 °C

Figure 8	Phase

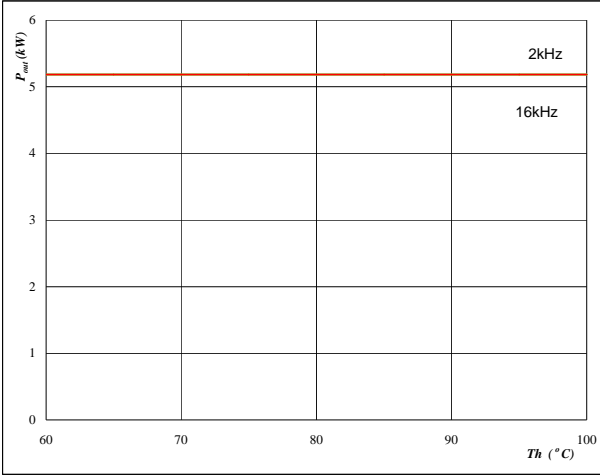**Typical available 0Hz output current as a function of switching frequency** $I_{outpeak} = f(f_{sw})$

At

T_j = 125 °C
DC-link = 320 V
T_s from 60 °C to 100 °C in steps of 5 °C
Mi = 0

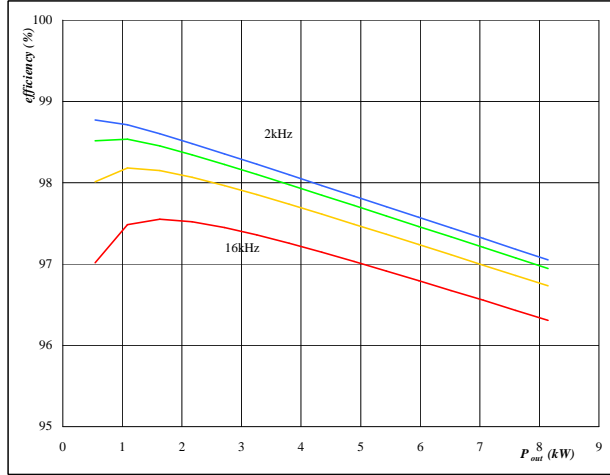| **Figure 9**	**Inverter**

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

At

T_j = 125 °C
DC-link = 320 V
Mi = 1
cos φ = 0,80
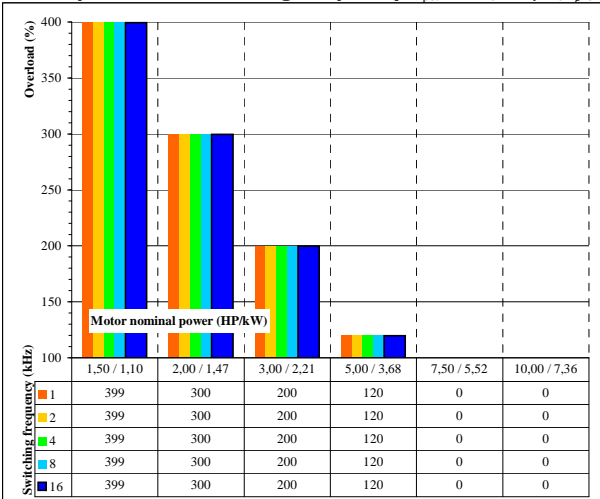f_{sw} from 2 kHz to 16 kHz in steps of factor 2

Figure 10	**Inverter**

Typical efficiency as a function of output power efficiency=f(P_out)

At

T_j = 125 °C
DC-link = 320 V
Mi = 1
cos φ = 0,80
f_{sw} 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 $P_{peak} / P_{nom}=f(P_{nom},f_{sw})$

Motor nominal power (HP/kW)

Switching frequency (kHz)	1,50 / 1,10	2,00 / 1,47	3,00 / 2,21	5,00 / 3,68	7,50 / 5,52	10,00 / 7,36
1	399	300	200	120	0	0
2	399	300	200	120	0	0
4	399	300	200	120	0	0
8	399	300	200	120	0	0
16	399	300	200	120	0	0

At

T_j = 125 °C
DC-link = 320 V
Mi = 1
cos φ = 0,8
f_{sw} from 1 kHz to 16kHz in steps of factor 2
T_s = 80 °C
Motor eff = 0,85