Vincotech

10-x1126PA100M7-L820F09x

application sheet

flow PACK 1	**Output Inverter Application**	1200 V / 100 A

General conditions

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

Figure 1 IGBT

Typical average static loss as a function of output current

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

Mi*cosfi = 1

Mi*cosfi = -1

At
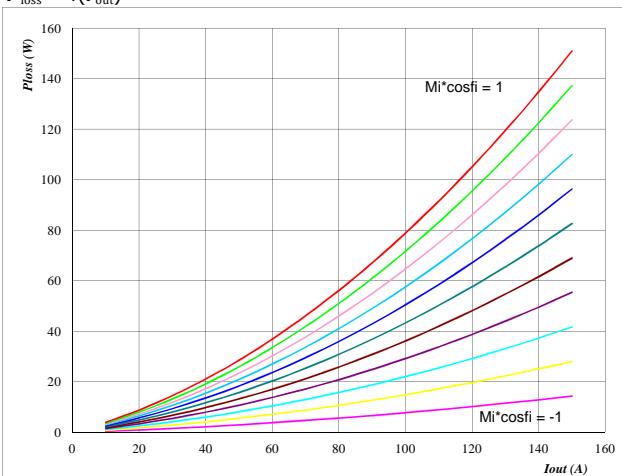
T_j = 125 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 2 FWD

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

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

Mi*cosf i= -1

Mi*cosfi = 1

At
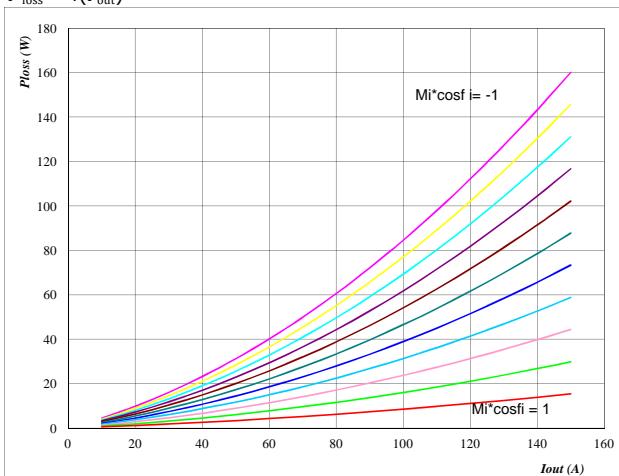
T_j = 125 °C

Mi*cosφ from -1 to 1 in steps of 0,2

Figure 3 IGBT

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


fsw = 16kHz

fsw = 2kHz

At
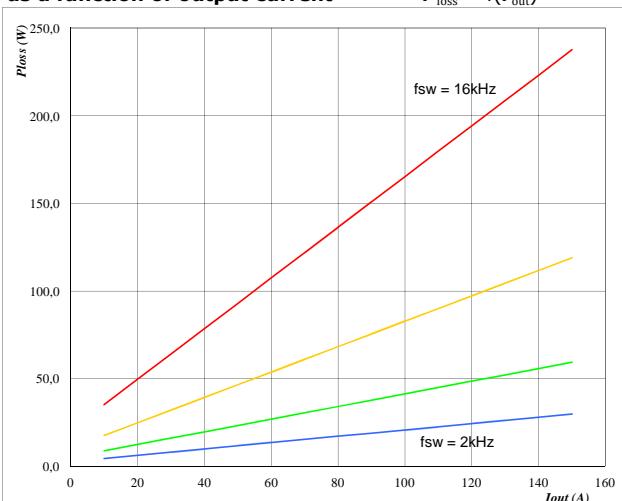
T_j = 125 °C

DC link = 600 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** $P_{loss} = f(I_{out})$

fsw = 16kHz

fsw = 2kHz

At
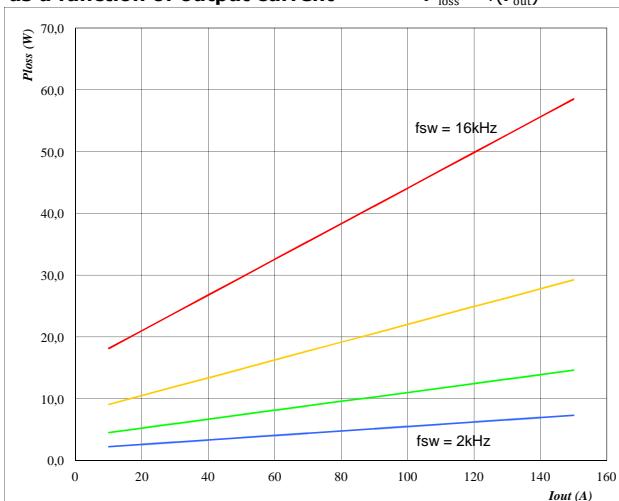
T_j = 125 °C

DC link = 600 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 $I_{out} = f(Mi*\cos \varphi)$

At
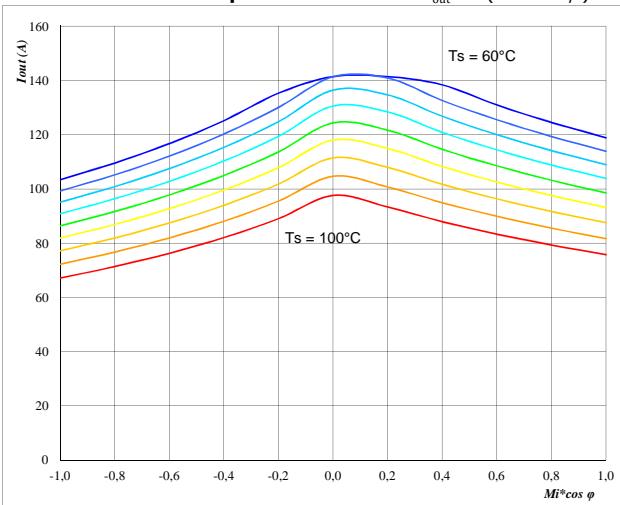
T_j =	125	°C
DC link =	600	V
f_{sw} =	4	kHz
T_s from	60 °C to 100 °C in steps of 5 °C	

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 =	600	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** $I_{out} = f(f_{sw}, Mi*\cos \varphi)$

Iout (A)

- 120,0-142,0
- 96,0-120,0
- 72,0-96,0
- 48,0-72,0
- 24,0-48,0
- 0,0-24,0

At
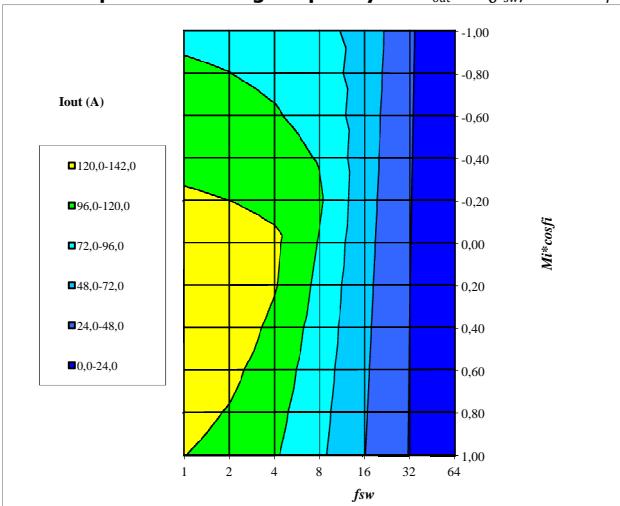
T_j =	125	°C
DC link =	600	V
T_s =	80	°C

Figure 8   Phase
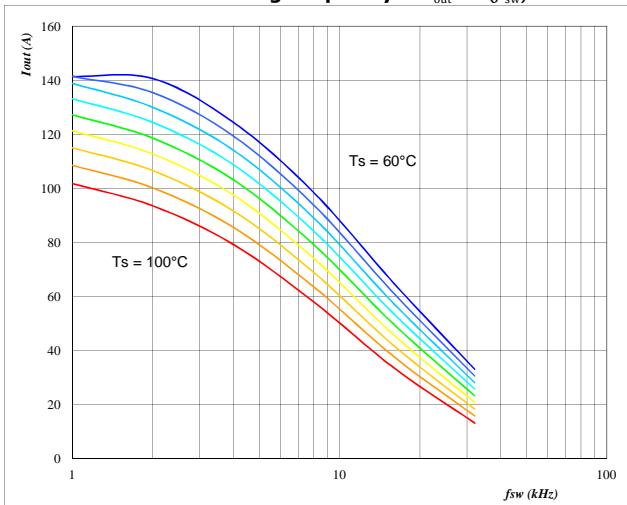
**Typical available 0Hz output current as a function of switching frequency** $I_{outpeak} = f(f_{sw})$

At
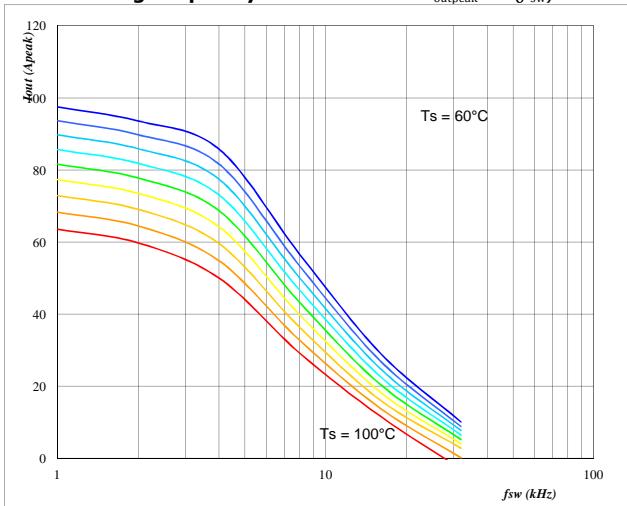
T_j =	125	°C
DC link =	600	V
T_s from	60 °C to 100 °C in steps of 5 °C	
Mi =	0	
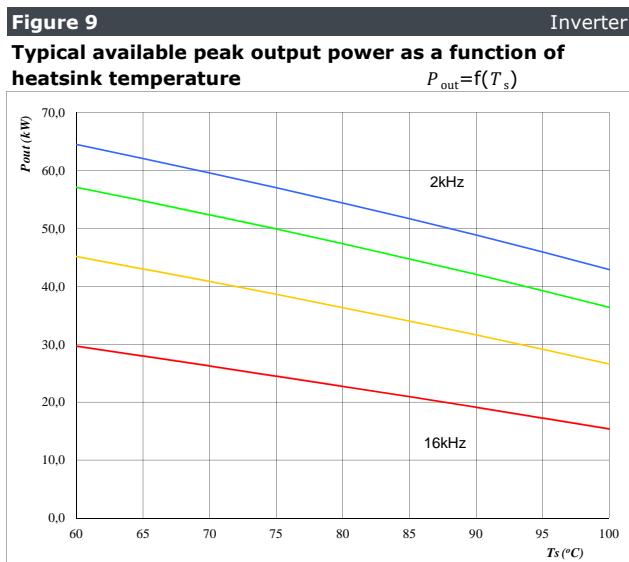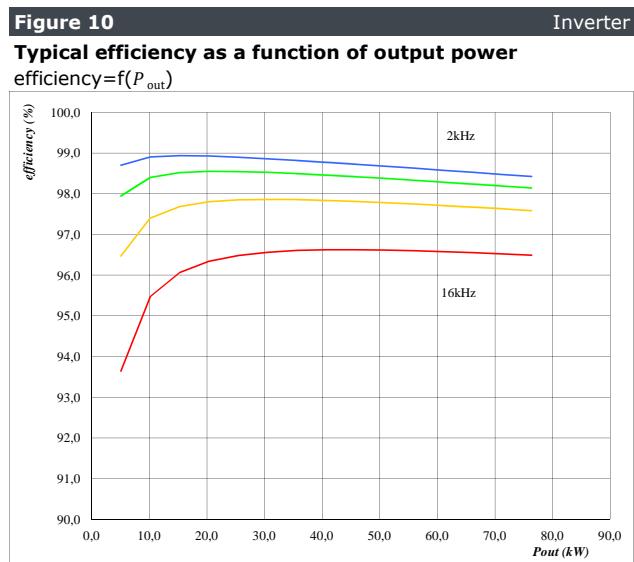
Figure 9 — Inverter

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

At

T_j =	125	°C
DC link =	600	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 =	600	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 $P_\text{peak} / P_\text{nom}=f(P_\text{nom},f_\text{sw})$

Switching frequency (kHz)	Motor nominal power (HP/kW)				
	...,00 / 18,39	30,00 / 22,07	40,00 / 29,42	50,00 / 36,78	
1	449	337	270	225	169	135
2	419	314	251	209	157	126
4	364	273	219	182	137	0
8	280	210	168	140	0	0
16	175	131	0	0	0	0

At
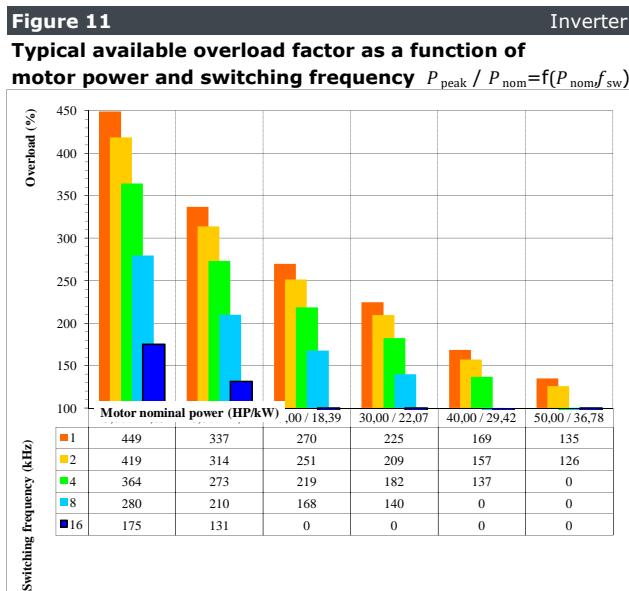
T_j =	125	°C
DC link =	600	V
Mi =	1	
cos φ =	0,8	
f_sw from	1 kHz to 16kHz in steps of factor 2	
T_s =	80	°C
Motor eff =	0,85	