# *flow* PACK 2 — Output Inverter Application — 1200 V / 150 A

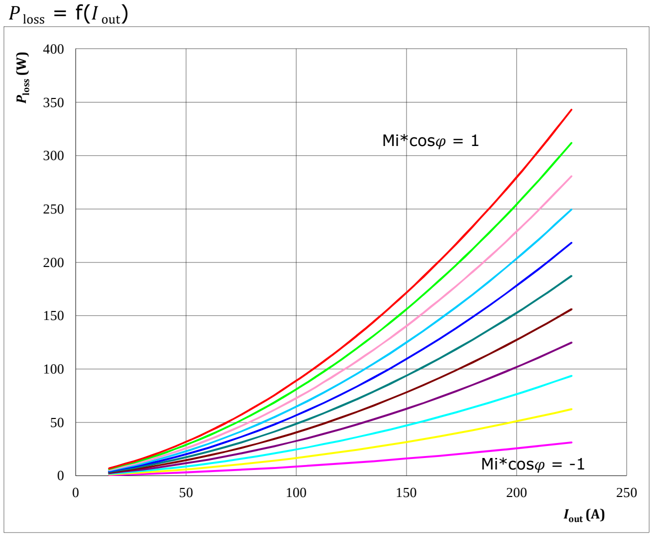
**General conditions**

| | | |
|---|---|---|
| **3phase SPWM** | | |
| $V_{GEon}$ | = | **15 V** |
| $V_{GEoff}$ | = | **-15 V** |
| $R_{gon}$ | = | **2 Ω** |
| $R_{goff}$ | = | **2 Ω** |

## figure 1. IGBT

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

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




**At**

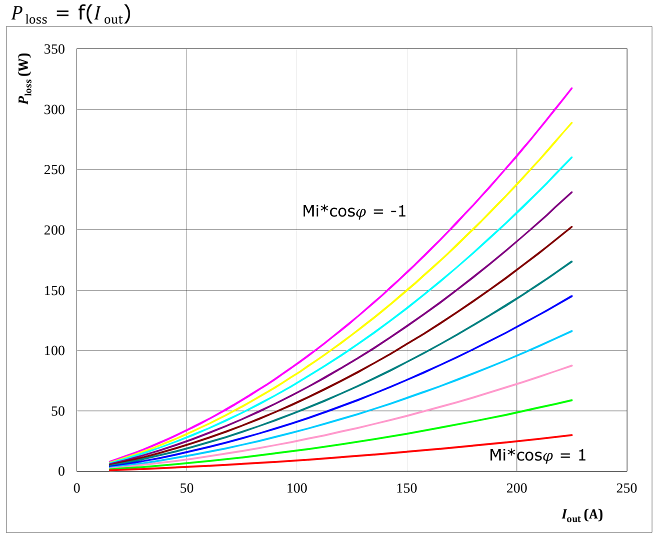
$T_j$ = 125 °C

Mi*cos$\varphi$ from -1 to 1 in steps of 0,2

## figure 2. FWD

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

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



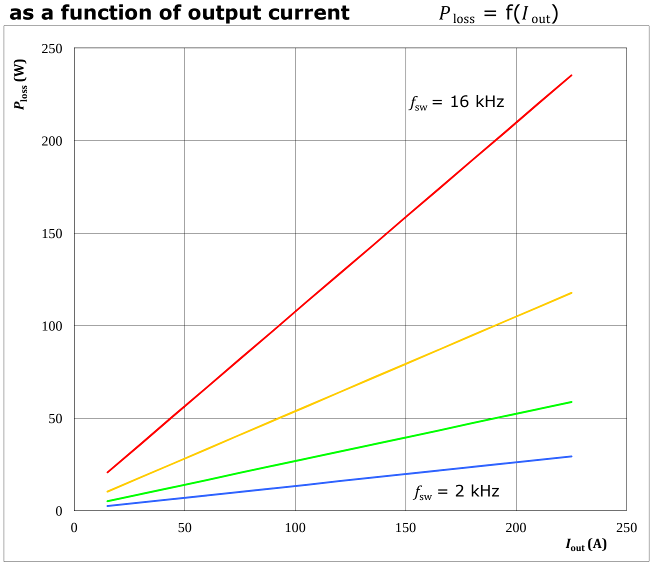

**At**

$T_j$ = 125 °C

Mi*cos$\varphi$ 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**

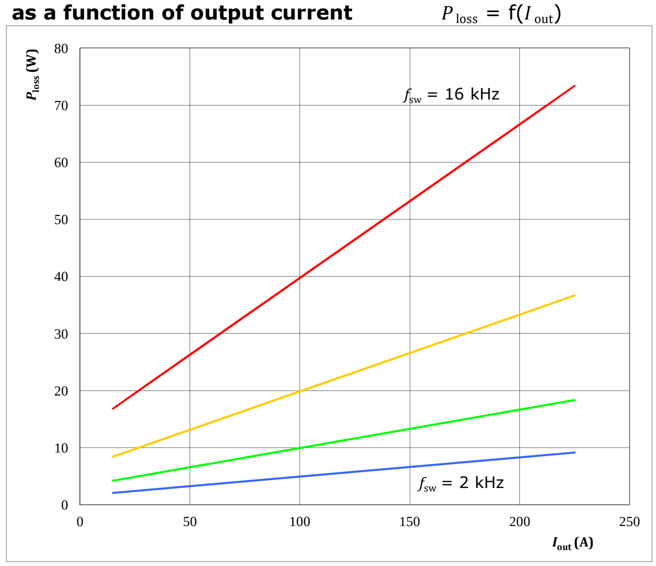
$T_j$ = 125 °C

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




**At**

$T_j$ = 125 °C

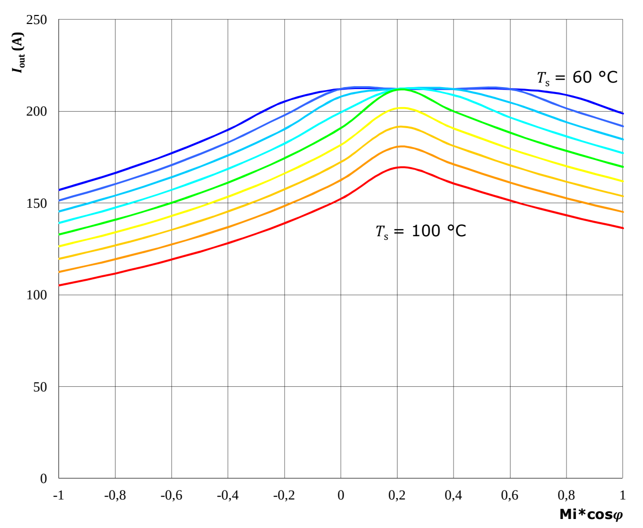
DC-link = 600 V

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

## *flow* PACK 2 — Output Inverter Application — 1200 V / 150 A

**figure 5.** **Phase**

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

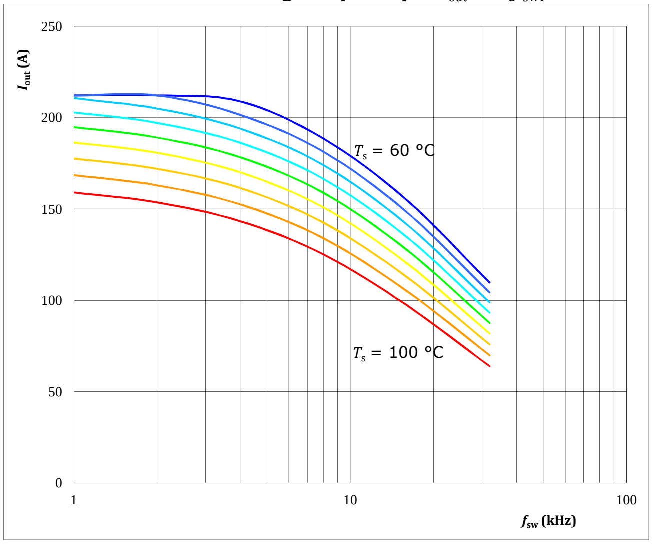



**At**

$T_j$ = 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 50 Hz output current as a function of switching frequency** $I_{out} = f(f_{sw})$

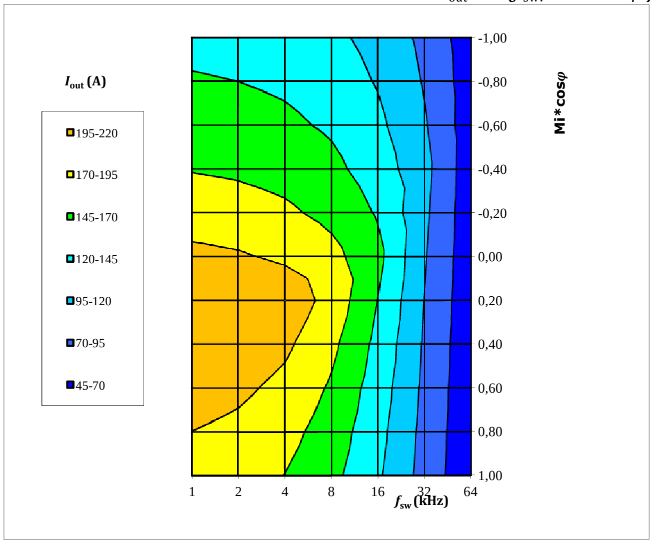



**At**

$T_j$ = 125 °C
DC-link = 600 V
Mi*cosφ = 0,8
$T_s$ from 60 °C to 100 °C in steps of 5 °C

**figure 7.** **Phase**

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

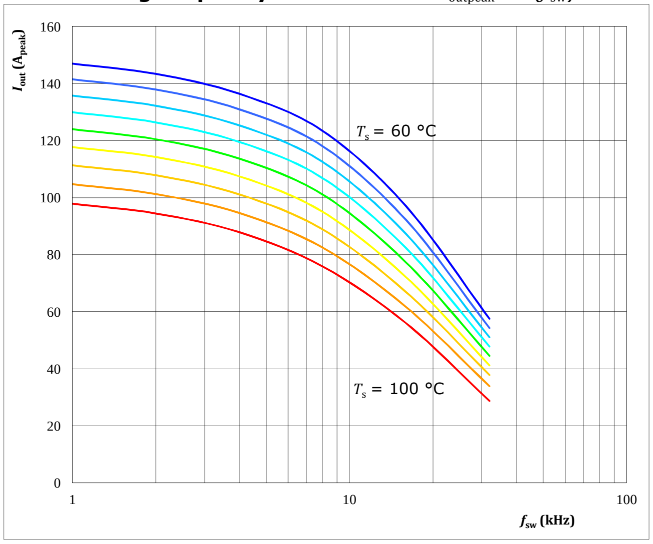



**At**

$T_j$ = 125 °C
DC-link = 600 V
$T_s$ = 80 °C

**figure 8.** **Phase**

**Typical available 50 Hz output current as a function of switching frequency** $I_{outpeak} = f(f_{sw})$



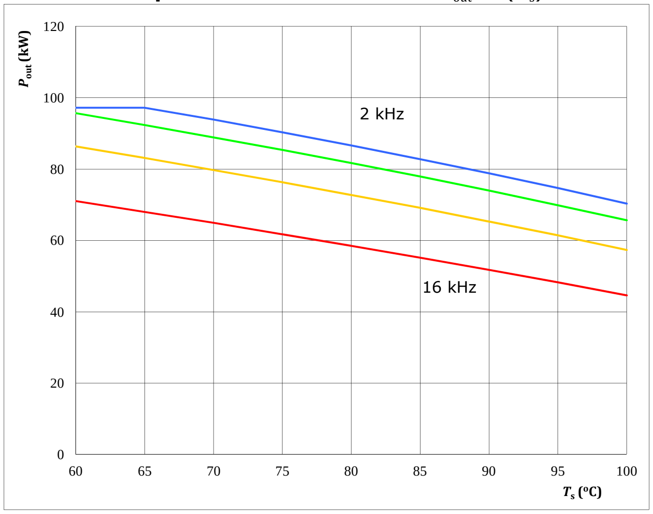

**At**

$T_j$ = 125 °C
DC-link = 600 V
Mi = 0
$T_s$ from 60 °C to 100 °C in steps of 5 °C

***flow* PACK 2** **Output Inverter Application** **1200 V / 150 A**

**figure 9.** **Inverter**

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

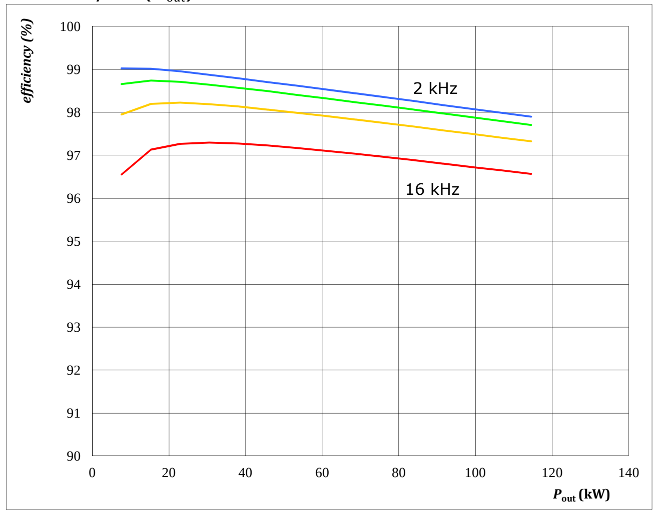



**At**

$T_j$ = 125 °C
DC-link = 600 V
Mi = 1
cos $\varphi$ = 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($P_{out}$)

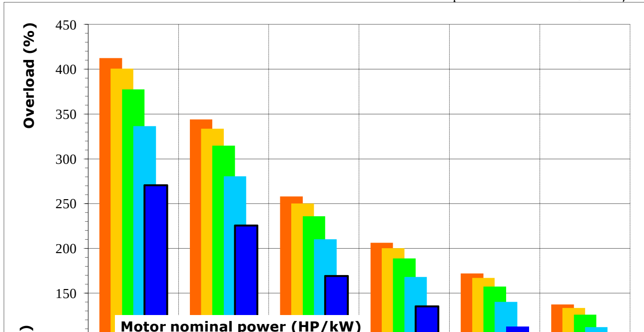



**At**

$T_j$ = 125 °C
DC-link = 600 V
Mi = 1
cos $\varphi$ = 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** $P_{peak} / P_{nom} = f(P_{nom}, f_{sw})$




| Switching frequency (kHz) | 25,00 / 18,39 | 30,00 / 22,07 | 40,00 / 29,42 | 50,00 / 36,78 | 60,00 / 44,13 | 75,00 / 55,16 |
|---|---|---|---|---|---|---|
| 1 | 413 | 344 | 258 | 206 | 172 | 138 |
| 2 | 401 | 334 | 250 | 200 | 167 | 134 |
| 4 | 378 | 315 | 236 | 189 | 157 | 126 |
| 8 | 337 | 280 | 210 | 168 | 140 | 112 |
| 16 | 271 | 225 | 169 | 135 | 113 | 0 |

**At**

$T_j$ = 125 °C
DC-link = 600 V
Mi = 1
cos$\varphi$ = 0,8
$T_s$ = 80 °C
Motor eff = 0,85
$f_{sw}$ from 1 kHz to 16 kHz in steps of factor 2