| *flow* S-PFC 0 | HIGH EFF. PFC Application | 650 V / 75 A |

**General conditions**

Boost PFC

V_{GEon} = +15 V
V_{GEoff} = -5 V
R_{gon} = 4 Ω
R_{goff} = 4 Ω
V_{in} = V_{inpk}*sinωt
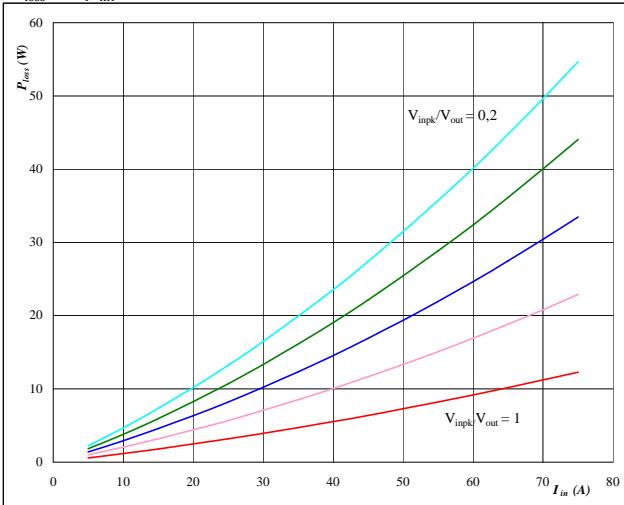
| figure 1. | IGBT |

Typical average static loss as a function of input current
P_{loss} = f(I_{in})
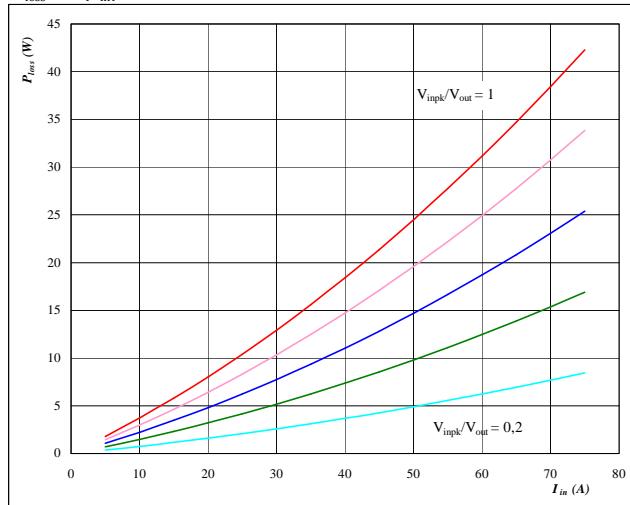
At
T_j = 125 °C
V_{inpk} / V_{out} from 0,1 to 1 in steps of 0,2

| figure 2. | FWD |

Typical average static loss as a function of input current
P_{loss} = f(I_{in})
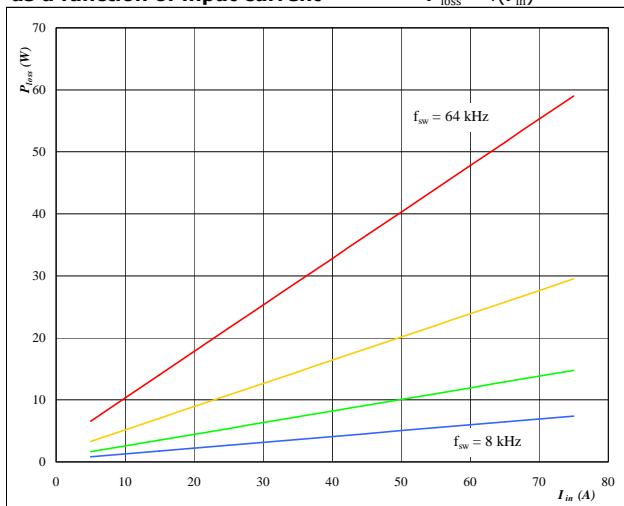
At
T_j = 125 °C
V_{inpk} / V_{out} from 0,1 to 1 in steps of 0,2

| figure 3. | IGBT |

Typical average switching loss as a function of input current P_{loss} = f(I_{in})
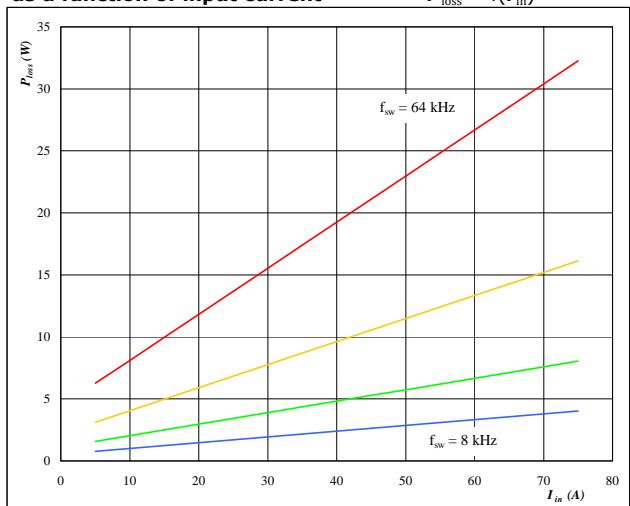
At
T_j = 125 °C
DC-link = 350 V
f_{sw} from 8 kHz to 64 kHz in steps of factor 2

| figure 4. | FWD |

**Typical average switching loss as a function of input current** P_{loss} = f(I_{in})

At
T_j = 125 °C
DC-link = 350 V
f_{sw} from 8 kHz to 64 kHz in steps of factor 2

flow S-PFC 0 | **HIGH EFF. PFC Application** | **650 V / 75 A**
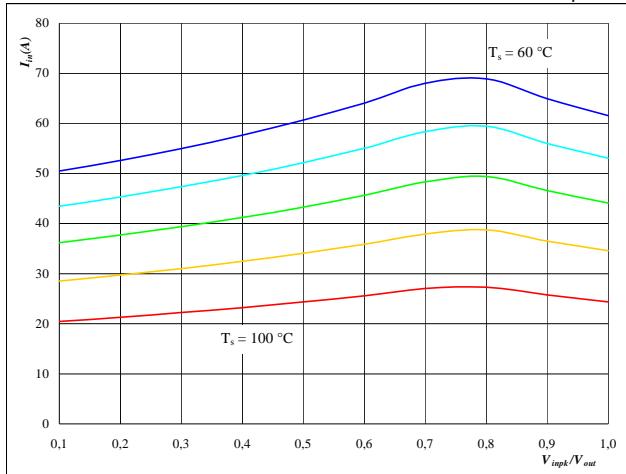
| figure 5.	PFC per leg

Typical available input current
as a function of V_{inpk} / V_{out} $I_{in} = f(V_{inpk}/V_{out})$

Per boost phase

At
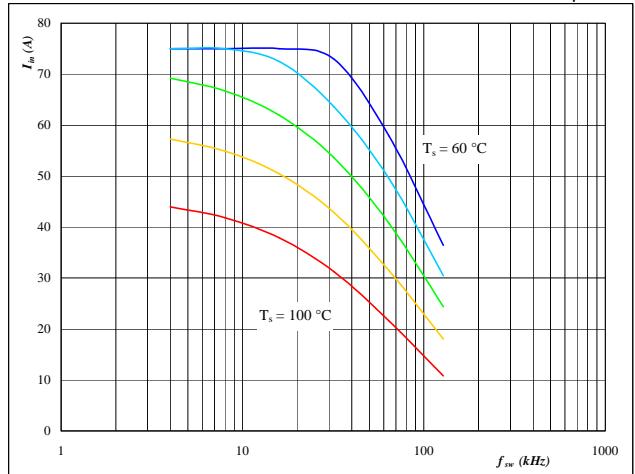
T_j =	125	°C
DC-link =	350	V
f_{sw} =	50	kHz
T_s from	60 °C to 100 °C in steps of 10 °C	

figure 6.	PFC per leg

Typical available input current
as a function of switching frequency $I_{in} = f(f_{sw})$

Per boost phase

At
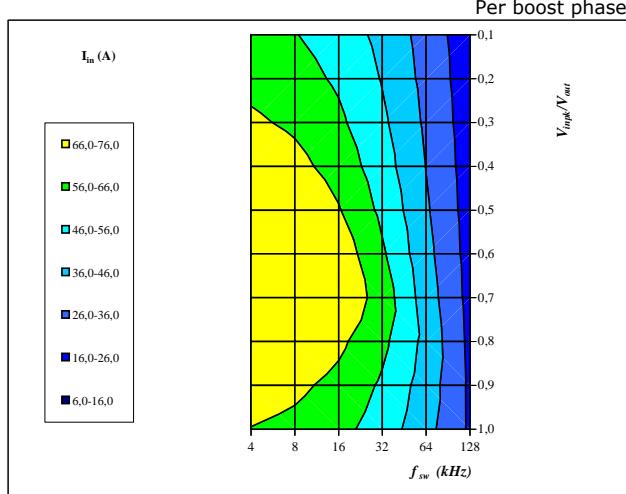
| T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} = 0,9		
T_s from	60 °C to 100 °C in steps of 10 °C	

figure 7.	PFC per leg

Typical available input current as a function of
of V_{inpk} / V_{out} and switching frequency $I_{in} = f(f_{sw}, V_{inpk}/V_{out})$

Per boost phase
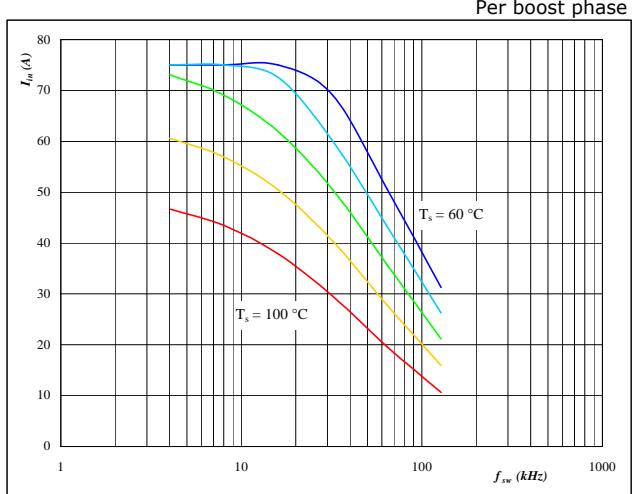
At

T_j =	125	°C
DC-link =	350	V
T_s =	80	°C

figure 8.	PFC per leg

Typical available input current
as a function of switching frequency $I_{in} = f(f_{sw})$

Per boost phase

At
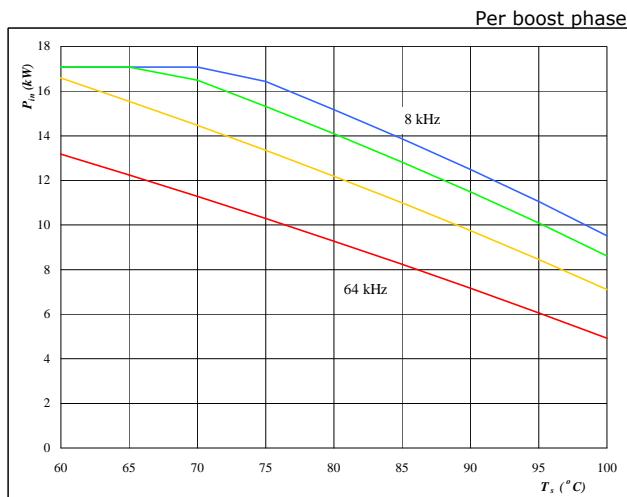
T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} = 0,4		
T_s from	60 °C to 100 °C in steps of 5 °C	

figure 9.	PFC per leg

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

Per boost phase

At
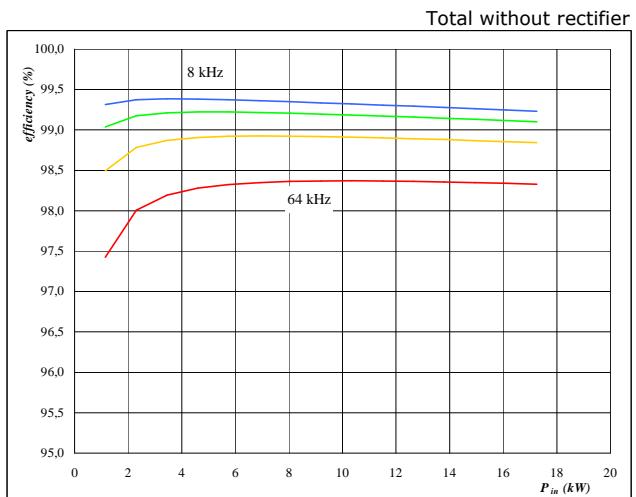
T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} =	0,9	kHz

f_{sw} from 8 kHz to 64 kHz in steps of factor 2

figure 10.	PFC

Typical efficiency as a function of input power

efficiency = f(P_{in})

Total without rectifier

At

T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} =	0,9	kHz

f_{sw} from 8 kHz to 64 kHz in steps of factor 2
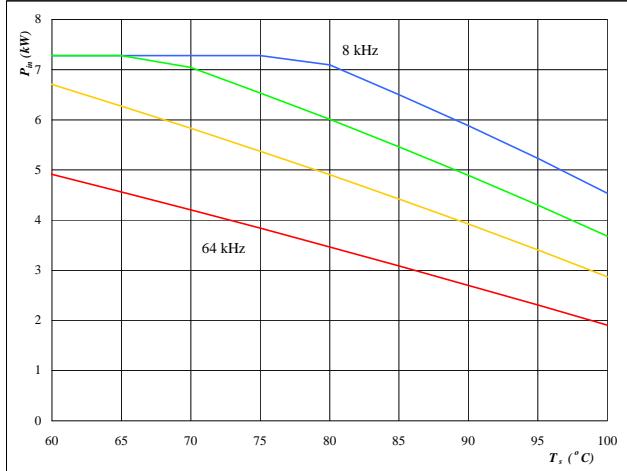
figure 11.	PFC per leg

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

Per boost phase

At

T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} =	0,4	

f_{sw} from 8 kHz to 64 kHz in steps of factor 2
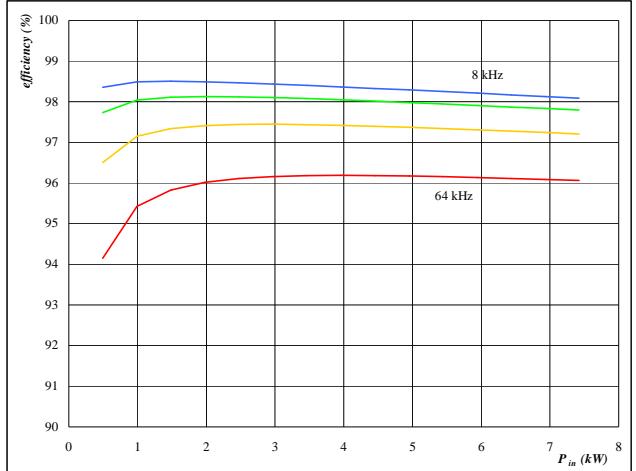
figure 12.	PFC

Typical efficiency as a function of input power

efficiency = f(P_{in})

Total without rectifier

At

T_j =	125	°C
DC-link =	350	V
V_{inpk}/V_{out} =	0,4	

f_{sw} from 8 kHz to 64 kHz in steps of factor 2
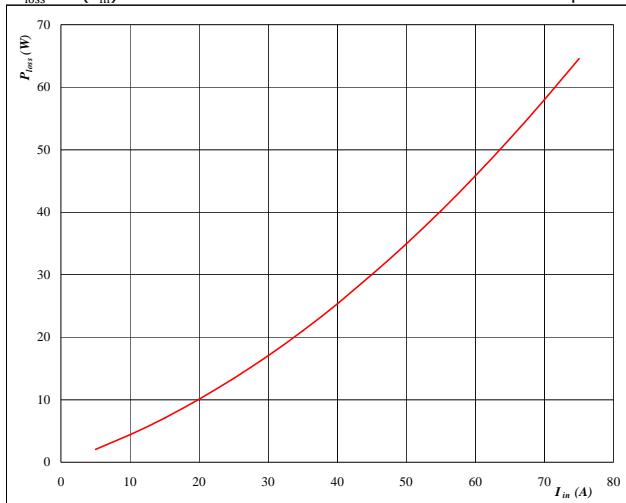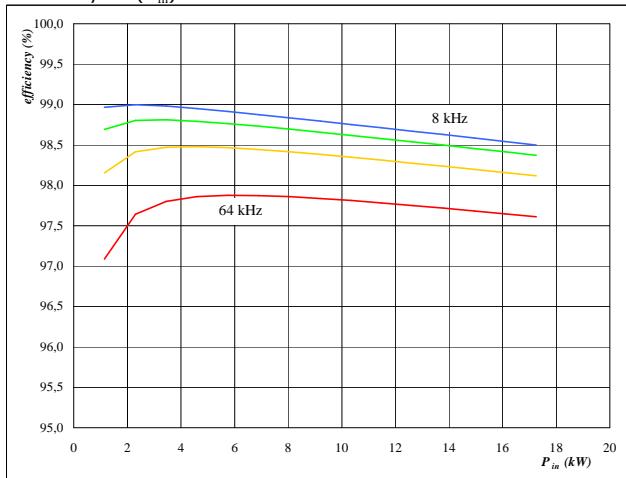
figure 13.   **Rectifier**
Typical average static loss as a function of input current
$P_{loss} = f(I_{in})$ Per boost phase

At
T_j =   125   °C

figure 14.   **Rectifier Bridge**
**Typical efficiency as a function of input power**
efficiency = $f(P_{in})$



At
T_j =   125   °C

figure 15.   **Overall**
Typical efficiency as a function of input power
efficiency = $f(P_{in})$

At
T_j =   125   °C
DC-link =   350   V
V_{inpk}/V_{out} = 0,9   kHz
f_{sw} from   8 kHz to 64 kHz in steps of factor 2

figure 16.   **Overall**
Typical efficiency as a function of input power
efficiency = $f(P_{in})$

At
T_j =   125   °C
DC-link =   350   V
V_{inpk}/V_{out} = 0,4   kHz
f_{sw} from   8 kHz to 16 kHz in steps of factor 2