P3

Intended for isolated power modules: **SEMIPACK (1 to 4)**, **SEMITRANS 2** range (also some **SEMIPONT**)
Integrated rails allow easy mounting of the modules (80mm distance between rails)
Best fitted fan: **SKF 3-230-01**
Available in various lengths (standard 120mm → P3/120; 180mm → P3/180; 300mm → P3/300)

SEMIPACK1 -> width=20mm;
SEMIPACK2 -> width=34mm;
SEMIPACK3 -> width=50mm;
SEMIPACK4 -> width=50mm;
SEMITRANS2 -> width=34mm;

P3/120 (Weight=2,1kg)
Examples:
1 SEMIPACK1 (100W) → Rth(h-a)=0,55K/W (natural); Rth(h-a)=0,167K/W (with fan)
3 SEMIPACK1 (150W) → Rth(h-a)=0,43K/W (natural); Rth(h-a)=0,147K/W (with fan);

P3/180 (Weight=3,1kg)
Examples:
2 SEMIPACK1 (150W) → Rth(h-a)=0,39K/W (natural); Rth(h-a)=0,132K/W (with fan)
3 SEMIPACK1 (180W) → Rth(h-a)=0,36K/W (natural); Rth(h-a)=0,12K/W (with fan)
6 SEMIPACK1 (200W) → Rth(h-a)=0,33K/W (natural); Rth(h-a)=0,108K/W (with fan)
1 SEMIPACK2/SEMITRANS2 → Rth(h-a)=0,144K/W (with fan)
3 SEMIPACK2/SEMITRANS2 → Rth(h-a)=0,118K/W (with fan)

P3/300 (Weight=5,3kg)
Examples:
3 SEMIPACK2/SEMITRANS2 → Rth(h-a)=0,0847K/W (with fan)

For more details (also other module combinations with or w/o fan) please see the diagrams Fig.3a, Fig.3b, Fig.6 and Fig.7 in the P3 datasheet.
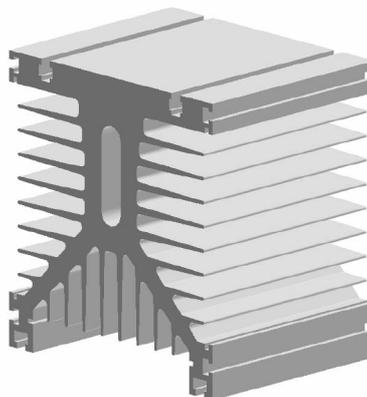
Fan SKF 3-230-01

SEMIKRON part number 30031061
Can be used in both directions (extraction or blowing)
f = 50/60Hz
Voltage = 230V
Max. volume = 159/190 m^3/h
P = 15/14W
Max. Tamb = 70°C
Weight = 0,55kg
Noise = 37/41dB
Size: height=119mm; width=119mm; depth=38;
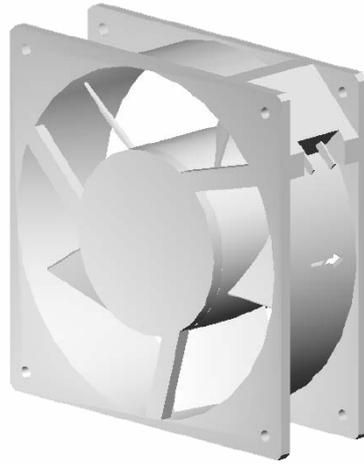
P16

Intended for all isolated power modules: **SEMIPACK, SEMITRANS, SEMIPONT, SKiM, SEMiX, SKiiP**
Excellent efficiency/volume ratio
Best suited fan: **SKF 16-B-230-01**
Available in various lengths (standard 200mm → P16/200; 300mm → P16/300)

P16/200 (Weight=4,7kg)
Examples:
3 SEMIPACK1 → Rth(h-a)=0,046K/W (with fan)
6 SEMIPACK1 → Rth(h-a)=0,039K/W (with fan)
3 SEMIPACK2/SEMITRANS2 → Rth(h-a)=0,038K/W (with fan)
2 SEMIPACK3/SEMIPACK4 → Rth(h-a)=0,04K/W (with fan)
3 SEMIPACK3/SEMIPACK4 → Rth(h-a)=0,033K/W (with fan)

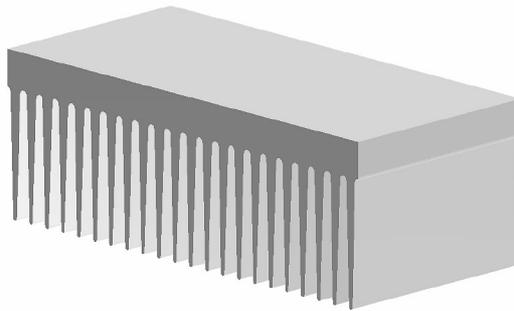**P16/300** (Weight=7kg)
Examples:
6 SEMIPACK2/SEMITRANS2 → Rth(h-a)=0,036K/W (with fan)
6 SEMIPACK3/SEMIPACK4 → Rth(h-a)=0,024K/W (with fan)

For more details (also other module combinations with or w/o fan) please see the diagrams Fig.6a, Fig.6b andFig.6c in the P16 datasheet.

Fan SKF 16 B-230-01

SEMIKRON part number 30119362
Low noise level
Long-life, maintenance free ball bearings
Blowing fan
f = 50/60Hz
Voltage = 230V
Max. volume = 610/565 m^3/h
P = 170/197W
Max. Tamb = 40°C
Weight = 3,6kg
Noise = 58/57dB
Size: 238 x 216 x 182,5mm

SEMISEL Simulation tool

Although the examples above might help you to find out the suitable length of the P3 and P16 heatsink for your specific application, you can simulate power module(s) mounted on the heatsink at a power (current and voltage) and temperature specified by you by using the SEMISEL simulation tool.
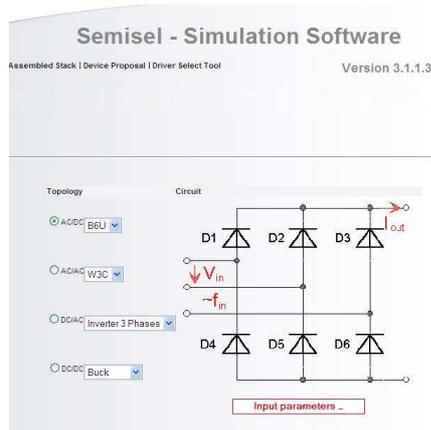
Link to SEMISEL:
www.sindopower.com/en/SEMISEL-Simulation-software/

Choose „Step by Step design", select "I accept the license term" and "Go anonymus".

Example

Topology: AC/DC → B6U

In "Input parameters" change the necessary fields to adapt the values to your application requirements. For this example, just change the field "output current" to 80A.

In the next step, select a package (e.g. SEMIPACK) and device (e.g. SKKD81).

For the cooling, select "predefined type"; for this example, if you simulate (button "Calculate") the heatsink P3/180 with natural air cooling, you will see that this option is valid.
Usually it is possible to take a shorter version of a heatsink and add a fan to have a similar Rth(h-a) value with fewer space.