

# SEPA<sup>®</sup> CPU-COOLER

HFB44B05A, HFB44B12A



## COOLING of HIGH-SPEED CPUs

AUTOMOTIVE FAN

### • FEATURES

Small, extremely thin and light. The ball-bearing fan integrated in the heat sink is highly effective despite its height of only 7.5 mm! This renders it highly suitable for the Pentium 586 (K6) and for automotive use.

### • VERY LOW POWER CONSUMPTION

An NdFe<sub>2</sub>O<sub>3</sub> magnet ensures a high torque of the ball bearing fan motor and maximum conductance of heat and simultaneous low current consumption.

### • HIGHEST RELIABILITY AND LIFE EXPECTANCY

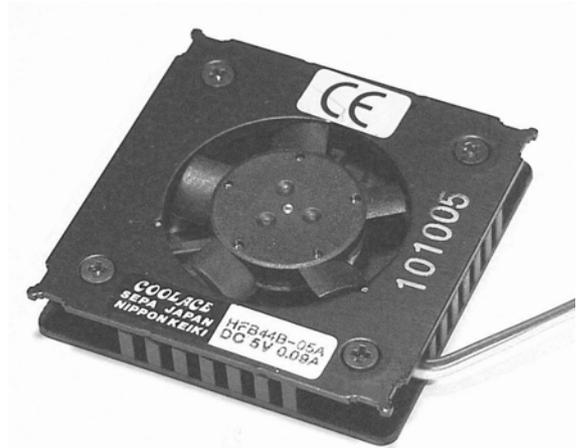
The brushless motor is electronically commutated. A special IC is responsible for the electrical control. High reliability is achieved by 100% burn-in.

### • SILENT

The air flow performance is increased and the noise reduced by computer-aided optimisation of the impeller and cooling surfaces.

### • ALARM-OUTPUT

A speed impulse output enables simple monitoring of the fan speed.



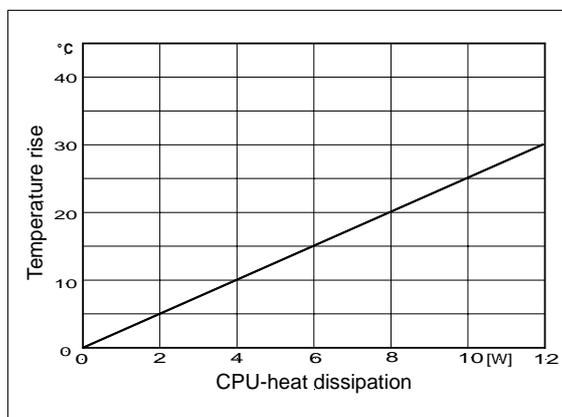
### PERFORMANCE

Type	Oper. Voltage [V]	Oper. Current [mA]	Thermal Resist. [K/W] *)	Noise [dB(A)] **)	Op. Temperature (case)°C	Life Exp./MTBF [h @ 60°C]
HFB44B05A	4.5...5...5.5	110 (160)	2.5	28	-10 ... +80	75000 / 210000
HFB44B12A	10.2...12...13.8	40 (70)	2.5	28	-10 ... +80	75000 / 210000

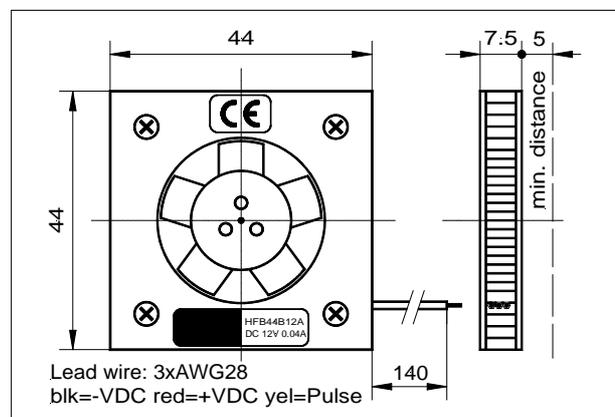
\*) Measured with thermal conductive tape

\*\*) Measured at 1m from the air intake side of the fan

### COOLING PERFORMANCE



### SHAPE & DIMENSION



## • ALARM OUTPUT

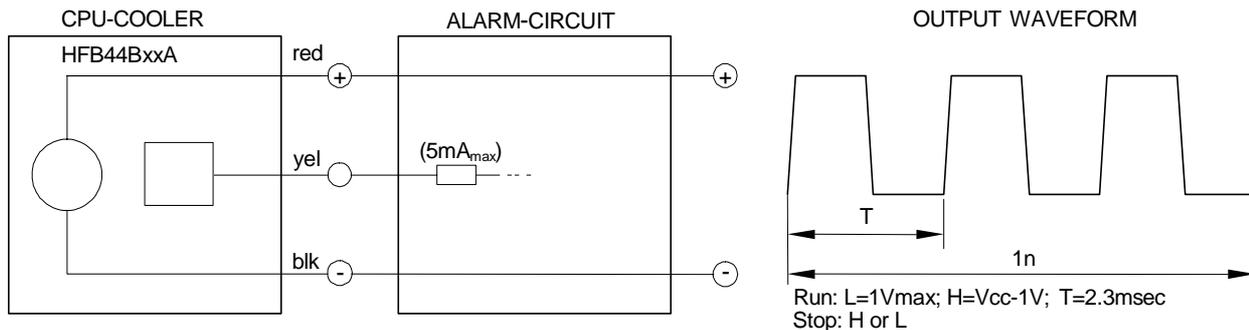
The **SEPA**® HFB44BxxA includes a speed impulse output, which enables monitoring the correct function of the fan. An alarm-board is available on request.

The pulse is like a rectangular wave, the frequency correlates to 3 x rotor speed. At blocked rotor the output signal could be L ( $\leq 1.0V$ ) or H ( $V_{cc} - 1V$ ).

**IMPORTANT:** The pulse output is *not* protected against short circuit and must not connect to GND or  $V_{cc}$  without series-resistor. A pull-up-resistor is not needed.

Do not connect not used pulse output to GND or  $V_{cc}$  (insolate).

The HFB44Bxx(A) has tinned lead wire ends (without connector).



## • Mounting:

The **SEPA**® HFB44BxxA is mounted on the CPU by simply using the double side adhesive thermo conductive foil THPAD44. THPAD contains an aluminium medium and bonds reliably and permanently even as high temperatures. THPAD44 is provided as a blank in the appropriate size (see accessories).

The surface of the heat sink and the CPU must be clean and dry. Even mere traces of thermo conducting paste prevent reliable bonding.

For more information please read the data sheet of adhesive pad or glue.

**IMPORTANT:** Only hold the cooler at the outer edge and do not touch the impeller!

## • Accessories:

THPAD44	thermally conductive adhesive pad, with aluminium carrier.
LOCTITE 315	thermally conductive glue, after 4 min. stalwart
ALG01	<b>SEPA</b> ALARM, monitor-circuit, generates an acoustic signal in case of missing pulses.
CONNECTOR	on request

## • Order Information:

HFB44B05A	<b>SEPA</b> CPU-Cooler 5VDC, ball bearing, pulse, <b>CE</b>	214421010
HFB44B12A	<b>SEPA</b> CPU-Cooler 12VDC, ball bearing, pulse, <b>CE</b>	214422010

**SEPA**® is the brand name for fans and CPU-Cooler, made by Nippon Keiki Works LTD., Tokyo