Cooling Systems Division

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The smaller size, larger capacity, and higher speed of Information communication equipment is remarkable. Heating value has also been increasing in connection with this, and the cooling fans that cool this equipment needs to correspond with greater cooling performance, lower noise, lighter weight, lower power consumption, and longer life, etc.

The following are the main technical achievements of the cooling system division for the year of 2002.

(1) "San Ace" large air volume fan
(2) Low noise: light weight "San Ace 140L"
(3) Program control fan
(4) "SAN ACE MC" series

The outline is described below.

"San Ace" Large Air Volume Fan

The large air volume type was added to the "San Ace 40" P type, the "San Ace 60" R type, the "San Ace 80" R type, the "San Ace 127" E type, and the "San Ace 172" E type by improving the efficiency of the motor and reexamination of the drive circuits.

The "San Ace 40" P type is 40mm sq. ×28mm thickness and has an air flow of 0.42m^3/min, which is 31% greater than the conventional product. It is carried in the 12/24V product lineup.

The "San Ace 60" R type has an air flow of 1.05 m^3/min, which is 42% greater than the conventional product. It is carried in the 12/24/48V product lineup.

"San Ace 80" R type has an air flow of 1.5 m^3/min of air volume, which is 25% greater than the conventional product. It is carried in the 12/24/48V product lineup.

"San Ace 127" E type has an air flow of 5.7 m^3/min of air volume, which is 19% greater than the conventional product. It is carried in the 24/48V product lineup .

"San Ace 172" E type has an air flow of 9.9 m^3/min of air volume, which is 16% greater than the conventional product. It is carried in the 24/48V product lineup.

The large air volume fan has been added to the existing prime products, and the contribution to a customer's measure against heat can be expected.

Low Noise: Light Weight "San Ace 140L"

In order to meet the needs of large air volume, low noise, low power consumption, and light weight of a 140mm sq. × 51mm thickness fan, the low noise, light weight "San Ace 140L" was developed as a new series.

With an equivalent air volume to the conventional product, a 3dB [A] reduction of noise, 15% reduction in power consumption, and 16% weight loss were realized. 8.1 m^3/min of large air volume was also achieved.

This product is certified as one of Sanyo Denki's ECO-PRODUCTS (environmentally compatible products).

For details, refer to the special feature article of this technical report.

Program Control Fan

A fan in which the microcomputer was carried and which uses the serial communication bus (I^2C bus, ISI bus) was developed.

There are 2 development models: a "San Ace 120L" G type and a "San Ace 172" E type.

Conventionally, the motor drive IC was used to control the rotation speed. With the use of a microcomputer chip, it became possible to precisely control the rotation and to perform communication control, which were not done in conventional fans.

The detail was introduced in the technical report No.14, Nov-2002.

"SAN ACE MC" Series

"SAN ACE MC" for Pentium ® 4* 1U Server
"SAN ACE MC" for Pentium ® 4*

The technical progress of a microprocessor (MPU) is remarkable, and its high speed and advanced features are continually being enhanced. With high speed and advanced features, the heat generation of the MPU is also going up, and cooling technology is becoming more and more advanced.

Low-profile "SAN ACE MC" for Pentium®4* 1U Server incorporable to 1U server was produced with the High thermal performance as a "SAN ACE MC" series product. The detail was introduced in the technical report No.14, Nov-2002.

Moreover, the high cooling performance "SAN ACE MC" for Pentium ®4* was produced for cooling MPU of heating value 80W class. For details, refer to the special feature article of this technical report.

As for MPU cooling, higher performance continues to be required. Furthermore, it is the intention of raising cooling technology.

* Pentium® is the registered trademark of Intel Corp.

"SAN ACE MC" for Pentium ® 4* 1U Server

"SAN ACE MC" for Pentium ® 4*

Kesatsugu Watanabe

Joined company in 1973
Cooling Systems Division, Design Dept.
Worked on the development and design of the fan motor