

# Environmentally Conscious Design

Murata designs products with reduced environmental impact throughout their life cycle, from material procurement, design & development and production to use, disposal and recycling.

## Eco-Friendly Product

### Implementation of Product Assessment

Murata is implementing environmentally-conscious design, in which it promotes reduction of the use of environmentally hazardous substance and effective use of resources by designing compact, energy-saving products. To ensure environmentally-conscious design, in November 2004 we began product assessment

throughout the Group in which we evaluate environmental impacts in advance and incorporate changes to reduce these impacts. Product assessment takes place prior to Design Review, which takes place in the development stage. The evaluation is then repeated during the prototype stage and at market launch.

### ■ Product Assessment Category

Classification	Category
Product	Environmentally hazardous substance
	Downsizing
	Reduction of main raw materials
	Electricity saving
Production process	Environmentally hazardous substance
	Energy saving
	Resource saving and waste reduction
Packaging	Environmentally hazardous chemical substances
	Resource saving (reuse, recycling)

### Life Cycle Assessment (LCA)\*

Murata conducts product assessment to reduce the environmental impact of its products throughout their life cycle. Murata's representative products, such as monolithic ceramic capacitors and chip ferrite beads, are assessed using the Life Cycle Assessment (LCA) methodology. Not only products, but also production machines are subjected to LCA at their design stage.

#### ■ Surface-mount pyroelectric infrared (PIR) sensor IRS-A200ST01

[Features] Contributes to reducing wasteful power consumption by detecting the presence of people and automatically switching on and off of lighting equipment or liquid crystal displays, or automatically switching into energy-saving mode of air conditioners.



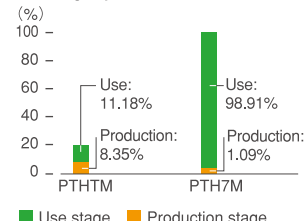
#### Life Cycle Stage

Parts and materials procurement	Reduced weight by 80% by decreasing the number of parts from 6 to 4.
Production	Reduced energy consumption on production stage, by reducing man-hours.
Packaging & transport	The downsizing of products has reduced the use of packaging materials and increased transport loading, resulting in reduced CO2 emissions.
Use	Contributed to energy saving of LCD televisions, photo frames and air-conditioners (with automated energy-saving control with presence detection).

#### ■ Positive-coefficient thermistor for motor start-up circuit

[Features] An electronic component for assisting start-up of a motor in a refrigerator, etc. Although the conventional product consumed little power after start-up, the new product has cut this wasteful power consumption.

#### Comparison of Global Warming Impacts (CO2 emissions) (%)



\*Calculations are based on the assumption of using the thermistor to start up the motor in a refrigerator over a period of 10 years.



#### \*What is Life Cycle Assessment (LCA)?

Life Cycle Assessment (LCA) is a method for quantitatively evaluating the environmental impact of a product at each stage of its life cycle. Murata evaluates mainly the environmental impact of products in terms of global warming.

## Managing of Chemical Substances and Environmentally Hazardous Substances

### Promoting a New Chemical Management System through Industry Alliances

The European Union REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Regulation, which came into effect in June 2007, requires the registration of several tens of thousands of types of chemical substances. In addition to efforts by individual companies to properly manage chemical substances, creating an industry-wide standardized management system is also an effective way to maintain strict compliance with this regulation. Based on this recognition, Murata has participated in the Joint Article Management Promotion-consortium (JAMP\*) to establish a standardized mechanism to facilitate the smooth transmission of information on chemical

substances contained in parts and materials, from upstream industries that produce chemical materials to downstream industries that produce end products. We are also working on establishing a chemical substance management system that employs JAMP-compliant tools and techniques.

#### \*What Is JAMP?

An active cross-industrial organization to formulate and spread concrete measures to facilitate proper management and smooth disclosure and communications throughout the supply chain of data on chemical substances contained in articles.

#### ■ Chemical Substance Management System

