

The logo for KOS, consisting of the letters 'K', 'O', and 'S' in a bold, blue, sans-serif font. The letters are stylized with a slight 3D effect and are set against a background of a sunset over the ocean. The 'O' is particularly prominent, with a white highlight on its upper right curve.

# KOS

## Environmental Report

2011-2012

A decorative graphic consisting of several overlapping, wavy, horizontal bands in various shades of blue, ranging from light sky blue to a darker, more saturated blue. The waves flow from left to right across the lower half of the page.

**DAISHINKU CORP.**

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## Company Profile

Corporate Name	: DAISHINKU CORP.
Logo	: 
Head Office	: 1389 Shinzaike, Hiraoka-cho, Kakogawa, Hyogo, 675-0194 Japan
Types of Business	: Manufacture and sales of electronic components and electronic equipment
Date of Foundation	: November 3, 1959
Representative	: President Sohei Hasegawa
Capital	: 19,344 million yen
Number of Employees	: 765 (as of end of July 2012)

## Scope of this report

DAISHINKU CORP.  
Head Office, Tottori Production Division,  
Tokushima Production Division, Kanzaki Plant,  
Nishiwaki Plant, Central Laboratory, Distribution Center

KYUSHU DAISHINKU CORP.  
TIANJIN KDS CORP.(China)  
PT. KDS INDONESIA (Indonesia)

## Period

This Environmental Report mainly covers environmental activities and achievements during the period from April 2010 to March 2012.

## Operational change during the period

Not Applicable

## Referenced guidelines

Environmental Report Guidelines 2012, published by the Ministry of the Environment, Japan

# Message from the President

We at Daishinku Corporation are committed to contributing to the sustainable development of society through our business activities in harmony with the environment, recognizing environmental conservation activities as one of our significant management policies.

Electronics is experiencing rapid evolution, bringing more affluence and convenience to daily life. Following on from environment-friendly and significantly fuel-efficient hybrid automobiles, electric vehicles that can be easily recharged at home have also been commercially introduced. We are seeing initiatives being taken all over the world to establish environment-friendly smart cities to reduce environmental loads, focusing on smart grids and smart houses that efficiently control the flows of renewable energy. The use of smartphones which are driving forces behind the realization of a ubiquitous networking society continues to expand. The crystal devices we manufacture and sell are incorporated in such applications, and we expect to see increased demand as new markets are created.

As a Group, every part of Daishinku we will continue to make dedicated efforts toward global environmental protection in the course of our business activities, such as the development and production of crystal devices, by appropriately controlling and reducing the amount of substances with adverse impacts on the environment and by promoting energy conservation and the reduction of CO<sub>2</sub> emissions. We hope this Environmental Report will deepen understanding of our environmental conservation activities.



President Sohei Hasegawa

## DAISHINKU GROUP ENVIRONMENTAL POLICY

### — Environment Philosophy —

Daishinku Group recognizes the environmental conservation activities as an important business challenge, and contributes to creating the society that is possible to develop continually, through activities which are harmonious with the environment.

### — Policy —

Daishinku Group promotes to preserve the global environment at each stage of our business activities, including the development, production and sales of our crystal-applied products.

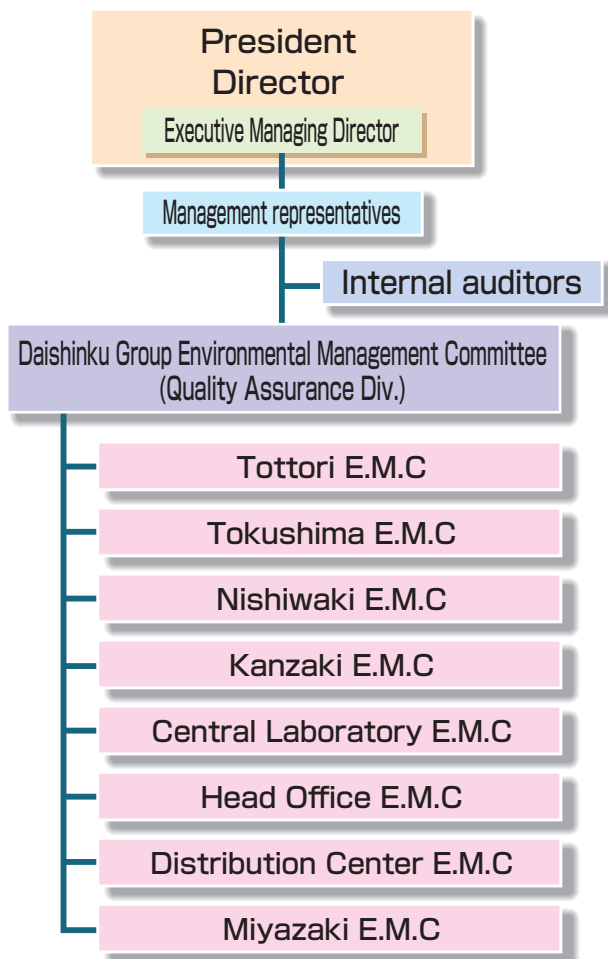
To achieve the above aim, Daishinku Group will:

1. Offer the environmentally friendly products by properly controlling the substances with environmental impact and reducing the use of them.
2. Effectively utilize resources and prevent environmental pollution by reducing and properly disposing of wastes including prevention of waste generation, reuse and recycle.
3. Prevent the global warming by carrying out energy conservation activities and CO<sub>2</sub> emissions reduction.
4. Observe relevant environmental laws, standards, agreements and any other requirements to which the company subscribes.
5. Set the environmental objectives and targets based on this Environmental Policy and promote the activities, and also review them regularly for the continuous improvement in our environmental management system.
6. Notify all employees and those who work for our group of environmental policies and raise their consciousness and awareness about environmental conservation through the education and awareness-raising activities.
7. Ensure that our information on environmental conservation activities is available to the public.

# Environmental Management System

## Organizational Structures

As part of implementing our Environmental Management System, an Environmental Management Committee has been set up at each of our business bases, and a Group Environmental Management Committee has been established to supervise the entire Daishinku group. The Group Environmental Management Committee determines the goals of environmental activities of Daishinku as a whole, examines/makes decisions on the results of the activities, makes effective use of the PDCA cycle, and works for the continuous improvement of environmental performance

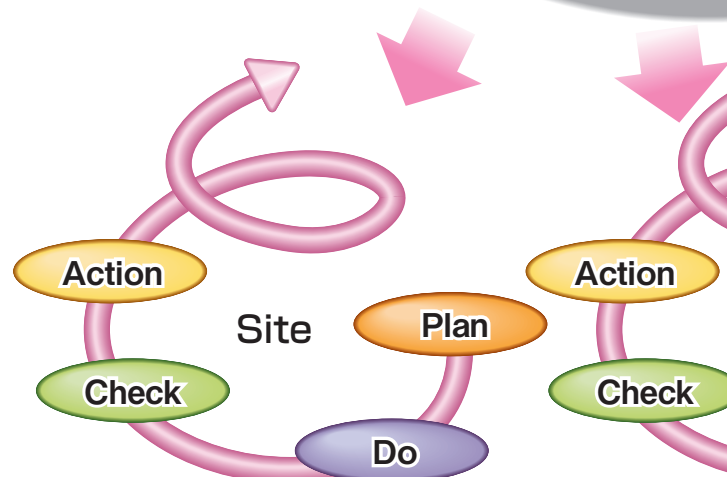
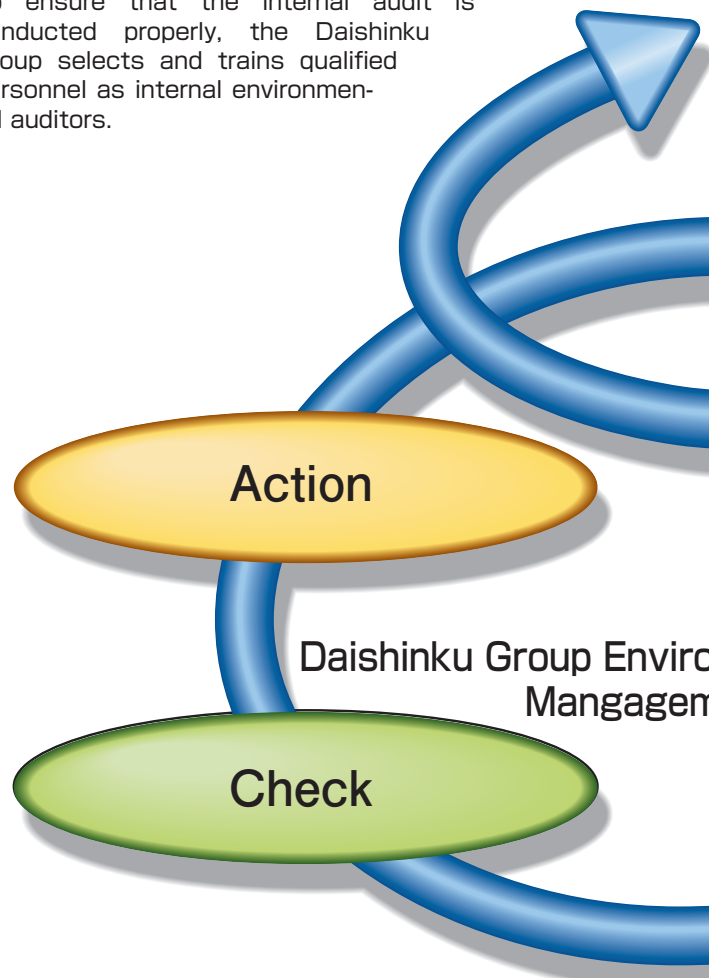


## Environmental Audit

To ensure the efficiency of the Environmental Management System, it is important to check that environmental management is being properly implemented and to correct any problems found.

The Daishinku Group conducts an internal environmental audit once a year to check the status of its management system. The results of the internal environmental audit are reported to the management, to discuss effectiveness and areas for improvement, contributing to the continuous improvement of the Environmental Management System.

To ensure that the internal audit is conducted properly, the Daishinku Group selects and trains qualified personnel as internal environmental auditors.



## ISO 14001 Certification Status

Daishinku Group has acquired ISO 14001 certification, an international environmental management standard. All of our domestic offices/plants acquired the certification in 2000, to promote implementation of an integrated management system for the whole Daishinku Group.

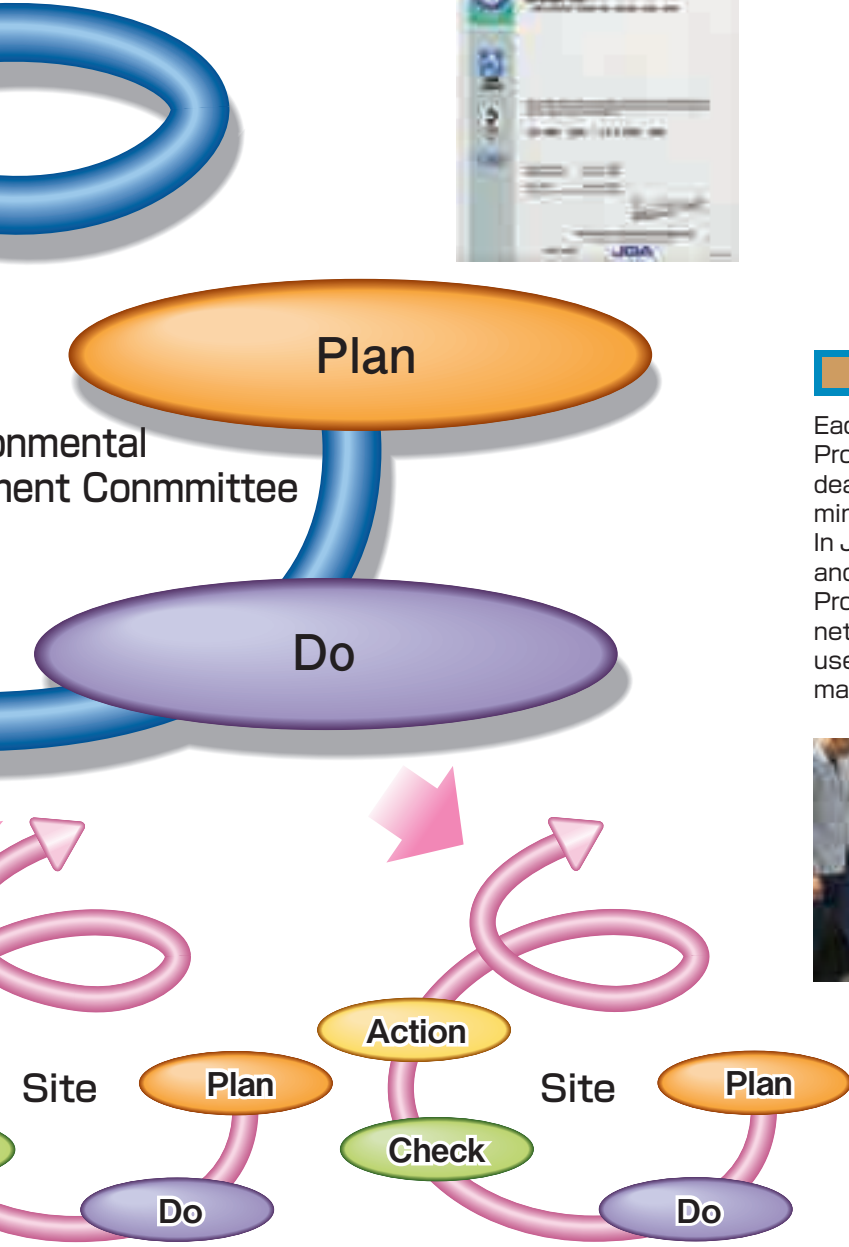
We will continue to work for environmental conservation by implementing an environmental management system consistent with ISO 14001.

TIANJIN KDS Corp. and PT. KDS INDONESIA, our overseas production bases, have also acquired ISO 14001 certification and are committed to environmental conservation in cooperation with our domestic offices.



List of Certificates (ISO14001)			
Plant/Office Name	Issue Date	Valid Until	Certificate No.
Daishinku (Japan)	2000.01.01	2001.12.31	123456789
Tokushima Production Div.	2000.01.01	2001.12.31	987654321
Osaka Production Div.	2000.01.01	2001.12.31	112233445
Chiba Production Div.	2000.01.01	2001.12.31	556677889
Yokohama Production Div.	2000.01.01	2001.12.31	990011223
Shizuoka Production Div.	2000.01.01	2001.12.31	334455667
Hyogo Production Div.	2000.01.01	2001.12.31	778899001
Chugoku Production Div.	2000.01.01	2001.12.31	223344556
Shikoku Production Div.	2000.01.01	2001.12.31	667788990
China (Tianjin)	2000.01.01	2001.12.31	101101101
Indonesia (PT. KDS)	2000.01.01	2001.12.31	202020202

List of Certificates (ISO14001)



## Emergency Response

Each plant/office has an "Emergency Response Program" in place that specifies the procedures for dealing with possible emergencies and accidents to minimize impacts on surrounding neighborhoods.

In June, our Environment Month, we hold emergency drills and verify the effectiveness of the Emergency Response Program by checking our emergency communication network, storage locations/quantities of equipment to be used, etc., in order to be prepared for any emergency that may occur.



Chemical leaks drill (Tokushima Production Div.)

# Environmental Performance

## Prevention of Global Warming

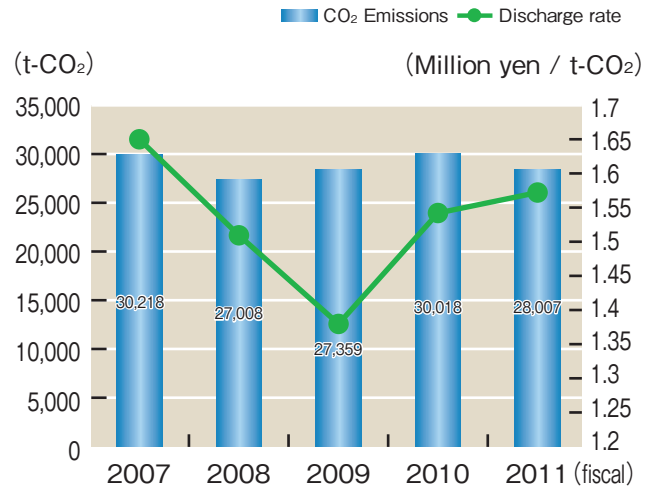
The Daishinku Group is committed to reducing emissions of greenhouse gases such as CO<sub>2</sub>.

Our production bases have introduced inverter lighting apparatus and energy-saving air-conditioning equipment, while engaging in activities to improve the operating efficiency of production facilities and decrease the defective rate with the aim of reducing unit energy consumption.

Other activities require participation of each employee, such as setting moderate air-conditioning temperatures and frequent turning off of lights and OA devices.

Since the law governing the rational use of energy was amended, not only the factories but the whole company has been making an effort to engage in energy-saving activities since fiscal year 2010.

CO<sub>2</sub> Emissions and Discharge Rate



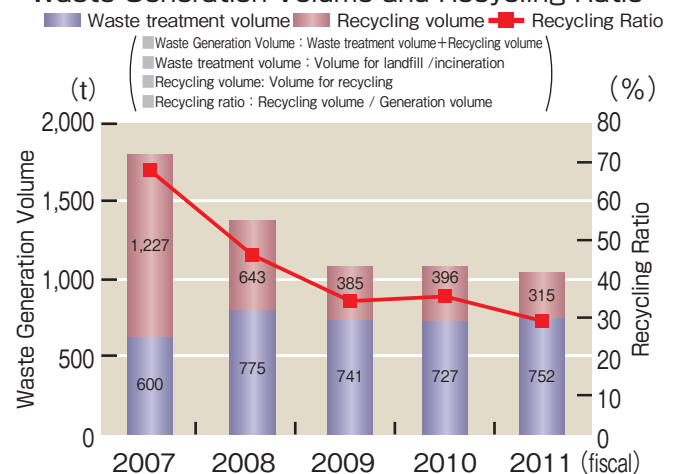
## Waste Reduction, Resources Recycling

The Daishinku Group has been working to reduce the amount of waste for landfill and incineration, as well as the volume of waste generated.

The volume of waste generated has remained almost flat since fiscal 2008.

We improved the chemicals used, and achieved a reduction of the volume of sludge generated. In addition, we have been working to reduce industrial waste by recycling or reusing materials which were previously just disposed of.

Waste Generation Volume and Recycling Ratio



### Case example of energy-saving activities

Tottori Production Division reduced energy usage by renewing highly-efficient Compressor (fiscal 2010) and conducting heat-recovery from air-conditioning equipment (fiscal 2011) as energy-saving strategy. Besides, whole production has been engaged in various activities, such as reviewing utility equipment in operation and visualizing electric power consumption.

Highly-efficient compressor : 1,000kWh / Reduced a day

Heat-recovery from air-conditioning equipment : 700kWh / Reduced a day



Renewing compressor

## Appropriate Management of PCB Waste

PCB (polychlorinated biphenyl) is highly toxic to living organisms and the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes requires proper disposal of PCB by July 2016.

To ensure the proper storage of PCB wastes and completion of disposal by 2016 pursuant to the law, the Daishinku Group registered itself with Japan Environmental Safety Corporation (JESCO), and the proper disposal of the substance was completed at Nishiwaki Plant and Kanzaki Plant in October 2010.



Low-contaminated PCB storage condition  
(Tokushima Production Div)

## Management of PRTR Chemicals

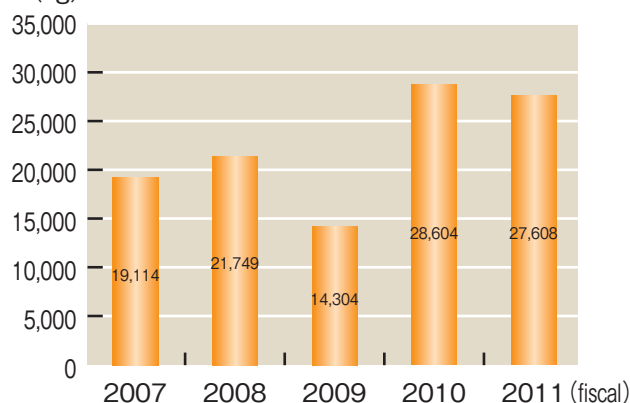
The Daishinku Group handles chemicals controlled by the PRTR law.

As a result of changes to the law in November 2008, from fiscal year 2010 onwards the number of chemicals controlled by the PRTR law were increased from 354 to 462, and as a result, the volume of PRTR specified substances handled at Daishinku increased too.

\*PRTR law : Requires the documentation etc of the amounts of the specified chemical substances released into the environment and calls for the speedy improvement in the handling of such substances.

Requires business operators handling chemical substances to submit the amounts of chemical substances emitted and transported.

Handled volume of materials subject to PRTR  
(kg)



## Waste Risk Management

We use outside waste disposers to dispose of industrial waste discharged by our business activities. In recognition to the responsibility that an industrial waste generator bears for its disposal, we have established rules concerning waste disposal and management, and closely monitor the firms entrusted with waste treatment.

Before the entrustment of industrial waste disposal, we conduct a site inspection of the waste disposal firms concerned, and after entrustment of disposal, we conduct annual patrols of the waste disposer.

## Observance of Laws and Regulations

Observance of laws and regulations is a key factor for a company when implementing its business activities. The Daishinku Group tries hard to prevent violation of laws and regulations from occurring by making effective use of the Environmental Management System.

During fiscal years 2010 to 2011 there were no cases of Daishinku having exceeded the limits set by law.

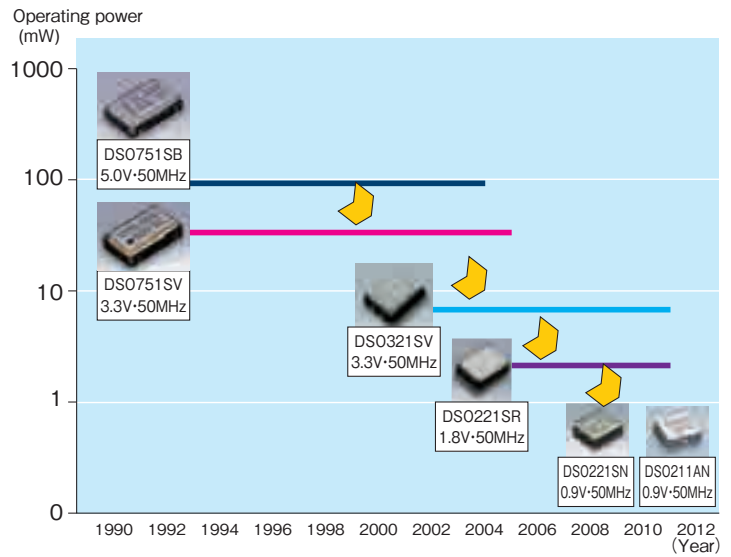
# Environmental Considerations Relating to Product

## Creation of Power-Saving Products

Power consumption of electronic devices such as PCs, cell phones and flat-screen televisions can be lowered by reducing the power consumption of crystal products used in these devices.

Since power is partly generated by thermal power plants, which are associated with generation of CO<sub>2</sub>, reduction of power consumption contributes to the reduction of CO<sub>2</sub>.

An example of how we help reduce CO<sub>2</sub> generation through innovative product design is our crystal oscillator DSO221SN (2.5×2.0×0.815mm) and its downsized version: DSO211AN(2.0×1.6×0.72mm). We have achieved a driving voltage of 0.9 V which is about 1/5 that of the older DSO751SB type of oscillator, and have reduced electric power consumption to less than 1/100, from 90 mW to just 0.9 mW



## Miniaturization of Products

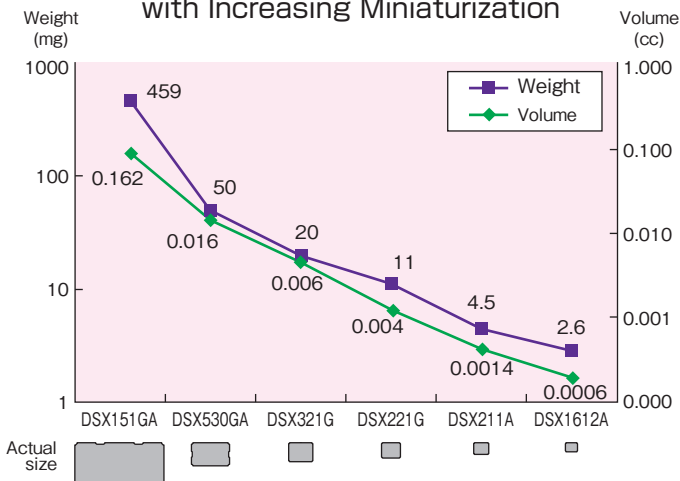
Downsizing our products reduces the materials used in our products which in turn leads to the reduction in usage of environmentally hazardous substances.

Our DSX1612A crystal resonator for example, is just 1/175 the weight and 1/285 the volume of the DSX151GA, with substantially reduced usage of lead and chromium.

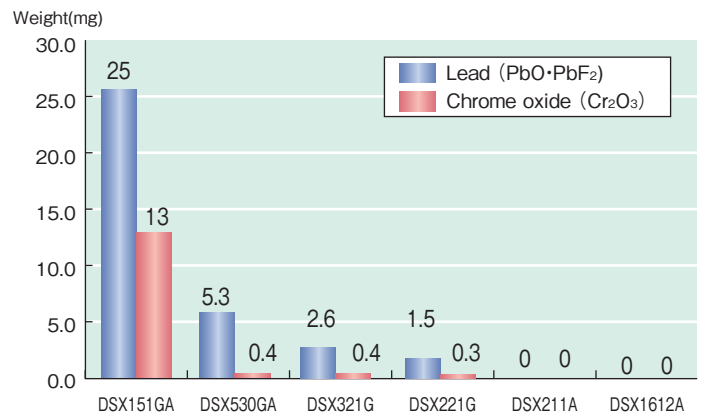
1612 size ultra miniature and lightweight with a low profile



Changes in Volume and Weight with Increasing Miniaturization



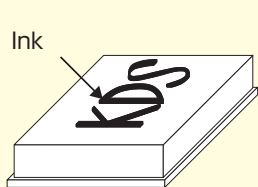
Amount of Hazardous Substances in Products





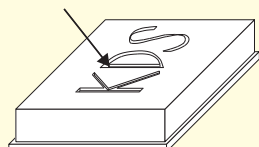
### <Improvements Resulting from Miniaturization>

Downsizing of crystal packages has led to relief printing using ink to be abandoned in favour of more environmentally friendly laser marking.



Marking by stamp

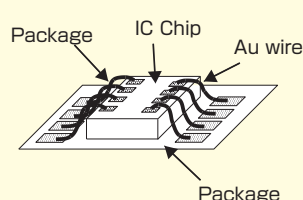
Carved surface by laser



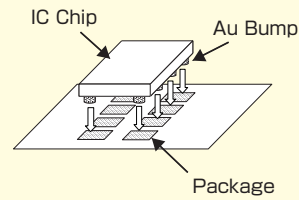
Laser Marking

### <Flip Chip Bonding>

Au bump terminals join the IC and package instead of Au wire. This results in not only space saving and height reduction but also reduces the amount of material used.



Wire bonding



Flip chip bonding

## Chemical Substances Management at Design Stage

For each crystal product, we examine its impact on the environment in the design/development stage and confirm based on the data provided by the suppliers that no environmentally hazardous substances are used for the component materials of the product.

We also conduct periodic checks not only in the product design stage but also for mass produced items to determine whether any environmentally hazardous substance is contained in them, using in-house XRF analyzers, with the aim of preventing outflow of hazardous substances.



X-ray fluorescence analyzer(Quality Assurance Div.)

## Green Procurement and Chemical Substances Management

To supply products which comply with laws and regulations such as the European RoHS Directive and meet the customer request, the Daishinku Group has "Standards for the Management of Environmental Chemical Substances" which specifies requirements to upstream suppliers.

It is important that the entire supply chain has been engaged in chemical substances management. Therefore we have enhanced the partnerships with our suppliers and been working on response to continually-changing laws and regulations about chemical substances.






## Response to REACH


REACH, the regulation on chemical substances in Europe, went into effect in June 2007. Substances of Very High Concern (SVHC) are updated every 6 months and when any of these substances make up 0.1% or more of the product, information must be communicated. To properly respond to REACH, we must ensure necessary information is communicated within the entire supply chain. The Daishinku Group, as an electronic components manufacturer, has established a system to communicate regulatory information to upstream suppliers, obtain information, and provide appropriate information for customers.


※REACH : Regulation Concerning the Registration, Evaluation, Authorization and Restriction of Chemicals


# Environmental Impact


## Environmental Burdens Generated in Offices/Plants in Japan


Energy		Electric power	('10) 70,838 kWh
			('11) 65,477 kWh
		Fuel oil	('10) 1,162 kL
			('11) 1,173 kL
		City gas	('10) 11,506 m <sup>3</sup>
		('11) 7,444 m <sup>3</sup>	
	Kerosene	('10) 12 kL	
		('11) 11 kL	
	LPG	('10) 7,531 kg	
		('11) 7,016 kg	


Water		Tap water	('10) 122 km <sup>3</sup>
			('11) 130 km <sup>3</sup>
		Ground-water	('10) 186 km <sup>3</sup>
			('11) 183 km <sup>3</sup>

Chemicals		('10) 28,604 kg
		('11) 27,608 kg

Raw Materials		Crystal raw material
		Abrasive
		Alcohol
		Component
		Others

Gas		CO <sub>2</sub>	('10) 30,018 t-CO <sub>2</sub>
			('11) 28,007 t-CO <sub>2</sub>




Water Quality		Wastewater	('10) 205 km <sup>3</sup>
			('11) 214 km <sup>3</sup>


Waste		Waste generation volume	('10) 1,123 t
			('11) 1,066 t
		Waste treatment volume	('10) 727 t
			('11) 752 t
		Recycling volume	('10) 396 t
			('11) 315 t


Products		Crystal Resonators
		Crystal Oscillators
		Monolithic Crystal Filters
		Optical Quartz Products





## Environmental Burdens Generated in Overseas Offices/Plants

Energy		Electric power	('10) 86,695 kWh
			('11) 80,107 kWh
		Gasoline	('10) 37 kL
			('11) 38 kL
	Fuel oil	('10) 220 kL	
			('11) 218 kL

Water		Tap water	('10) 874 km <sup>3</sup>
			('11) 836 km <sup>3</sup>

Gas		CO <sub>2</sub>	('10) 33,761 t-CO <sub>2</sub>
			('11) 31,184 t-CO <sub>2</sub>

Water Quality		Wastewater	('10) 824 km <sup>3</sup>
			('11) 685 km <sup>3</sup>

Waste		Waste generation volume	('10) 652 t
			('11) 426 t
		Waste treatment volume	('10) 299 t
			('11) 140 t
		Recycling volume	('10) 352 t
			('11) 286 t

## Contribution Activities in Local Communities

The Daishinku Group holds a cleanup activities in local communities every year. One example of this is the Tottori Production Division's participation in the "Tottori Sand Dunes Cleanup" program since 2001 which has been organized in spring and autumn each of every year since 1980 by the Tottori municipal government. Daishinku has been participating in this kind of community based activity and through these actions we hope to contribute something significant to the local area.



Cleanup of Tottori Sand Dunes (Tottori Production Div)



Cleanup around the factory (Tokushima Production Div)

## Effort to Sustainable Society

We would like to extend our deepest sympathies to all the victims of the Great East Japan Earthquake. We sincerely hope for the earliest possible reconstruction of the affected areas.

As reflected in the 10th Conference of the Parties to the Convention on Biological Diversity (COP 10) in 2010 as well as the 16th and 17th Conferences of the Parties to the United Nations Framework Convention on Climate Change (COP 16 & COP 17) held in 2010 and 2011, global environmental issues have recently been attracting growing attention in the international community. As a company engaged in global business, we have long realized that we need to play an active and increasing role in addressing global environmental issues.

In this context, we believe that it is our corporate social responsibility to pursue business activities in harmony with the environment.

For product development, we have worked on the creation of environment-friendly products, focusing on downsizing and power saving. We are also making efforts to contribute to environmental protection through our daily business activities, such as generating less waste from production processes and reducing energy use.

We provide information on our environmental efforts by issuing this Environment Report and through our website. We hope this Report helps the many people supporting us to understand how our activities contribute to society. We appreciate your candid comments and suggestions and ask for your continued support.



Executive Managing Director  
Director **Kenji Nakazawa**

The Environmental Report 2011-2012  
can be downloaded from Daishinku's website

<http://www.kds.info/>

In addition to the environmental report,  
our website offers other information.





**DAISHINKU CORP.**

<http://www.kds.info/>

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Comments and inquiries about this report may be sent to the following

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**DAISHINKU CORP.**

General Affairs Sec.

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TEL: (81) 79-426-3211 FAX: (81) 79-426-8618

E-mail: kouhou602@mail.kds.info

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This report uses the form that considers the environment for the global environment protection.