



## **SANYO Semiconductors NEWS**

---

### **SANYO Semiconductor Company Notification Concerning Sanyo's Shift to Lead Free Products**

Thank you for using Sanyo products.

To eliminate the lead that has been used in semiconductor products and to achieve a safe and enjoyable future, we at SANYO Semiconductor Company are developing and promoting the latest technologies that make it possible for mankind to coexist with the Earth's environment.

#### **1. Background**

In Europe, the final proposal for the EU directive (WEEE-RoHS) concerning discarded electric and electronic equipment will, except for certain applications, legislate the complete elimination of 6 substances including, lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEs) as of July 1, 2006.

In the United States there has been much concern over the issue of eliminating lead. A law was proposed in 1990 that would restrict lead in electric equipment (although electronic equipment was excepted), and there are limitations or complete bans on the use of lead in gasoline, cans used for foods, pipes, and paints for homes.

In Japan, along with the full-scale enforcement of a home appliance recycling law (Law for Recycling of Specified Kinds of Home Appliances), industry now has a duty to recycle and render nontoxic toxic materials containing lead.

Given this background, Sanyo has now completed development of technologies for making its manufacturing lead free. Sanyo has adopted the policy of being 100% lead free in all manufactured products by December 2004 under the slogan "We do not manufacture products containing lead."

Although the structure of and switchover to lead free products differs with the package, and even with the individual product, in general, Sanyo will be switching over in order, according to the following stipulations.

See the separate document Notification Concerning Lead Free Products at the following URL.

[http://service.semic.sanyo.co.jp/semi/eng/product/lead\\_free/info.asp](http://service.semic.sanyo.co.jp/semi/eng/product/lead_free/info.asp)

Please feel free to contact your Sanyo sales representative if you have any questions on, or if anything is unclear about, Sanyo's lead-free policy.

Continued on following page.

Continued from preceding page.

## 2. Overview by Product Type

BU	Type	Division	PKG	Lead free policy			
				Plating composition	Product name	Changeover method	Changeover timing
HD	Cylindrical	Diodes	Cylindrical type packages	Sn-Ag-Cu "1	No change (Current product name)	On-demand changeover once non-lead-free product stocks run out	
			-	Sn-Ag-Cu	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
	Surface Mounting Devices	Small-signal products	VSFP, SSFP, SMCP, MCP3/4/6, SCH6, MCPH3/4/5/6, CP3/4, ECH8, VEC8, PCP3/4/5, XP5/6, TP, TSSOP8, SOP8, VTFP, CPH3/4/5/6, MFP6/16	Sn/Sn-Bi	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
			SPA, NP, MP, NMP, TO-126, TO-126ML, TO-126LP, FLP	Sn-Ag-Cu	No change (Current product name)	Natural changeover	October.2001
	Through Hole Devices	Large-signal products	TO-220, TO-220ML, TO-220FI, TO-3PBL, TO-3PML, TO-3PMLH, TO-3JML	Sn-Ag-Cu	No change (Current product name)	Natural changeover	October.2001
TO-220FI5H, TO-220-5H, TO-220MF, ZP, SMP			Sn/Sn-Bi	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out		
LSI	Surface Mounting Devices	-	All packages	Sn/Sn-Bi	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
	Through Hole Devices	-	All packages	Sn/Sn-Bi	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
SM	Through Hole Devices	Hybrid ICs	External (lead pins)	Sn	No change (Current product name)	Natural changeover	June.2003
			Internal	Sn-Ag-Cu	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
	Surface Mounting Devices	ISB "2	All packages	Sn-Ag-Cu	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	
CCD	Surface Mounting Devices	-	All packages	Sn-Ag-Cu	The suffix "-E" will be appended to the product name.	On-demand changeover once non-lead-free product stocks run out	

"2 : ISB is a registered trademark of Sanyo Electric Co., Ltd. (ISB=Integrated System In Board)

"1 : The GZB 3.0 to 36 series will switch to Sn.

## 3. Product Details

### Transistor Products

\*: The high melting point solder used internally (preformed material) will be used until a replacement material is found.

- Small-signal lead type packages  
(SPA, NP, MP, NMP, TO-126, TO-126ML, TO126LP, FLP)  
Lead elimination - plating composition: Sn-Cu-Ag  
Changeover method : Natural changeover (Implemented from October 2001)  
No changes to product names
- Small-signal surface mounting packages  
(VSFP, SSFP, SMCP, MCP3/4/6, SCH6, MCPH3/4/5/6, CP3/4, ECH8, VEC8, PCP3/4/5, XP5/6, TP, TSSOP8, SOP8, VTFP, CPH3/4/5/6, MFP6, MFP16)  
Lead elimination - plating composition: Sn/Sn-Bi  
Changeover method : On-demand changeover once non-lead-free product stocks run out.  
The suffix "-E" will be appended to the product name.

Continued on following page.

---

Continued from preceding page.

3. Large-signal product packages

- (1) TO-220, TO-220ML, TO220FI, TO-3PBL, TO-3PML, TO-3PMLH, TO-3JML

Lead elimination - plating composition: Sn-Cu-Ag

Changeover method : Natural changeover (Implemented from October 2001)

No changes to product names

- (2) TO-220F15H, TO-220-5H, TO220MF, ZP, SMP

Lead elimination - plating composition: Sn/Sn-Bi

Changeover method : On-demand changeover once non-lead-free product stocks run out.

The suffix "-E" will be appended to the product name.

4. Diodes

- (1) Surface mounting package products

Lead elimination - plating composition: Sn-Ag-Cu

Changeover method : On-demand changeover once non-lead-free product stocks run out.

The suffix "-E" will be appended to the product name.

- (2) Cylindrical type packages

Lead elimination - plating composition: Sn-Ag-Cu, but the GZB 3.0 to 36 series will use Sn.

Changeover method : Natural changeover once non-lead-free product stocks run out.

No changes to product names

### IC Products

\*: The high melting point solder used internally (performed material) will be used until a replacement material is found.

1. Insertion package products

Lead elimination - plating composition: Sn/Sn-Bi

Changeover method : On-demand changeover once non-lead-free product stocks run out.

The suffix "-E" will be appended to the product name.

2. Surface mounting package products

Lead elimination - plating composition: Sn/Sn-Bi

Changeover method : On-demand changeover once non-lead-free product stocks run out.

The suffix "-E" will be appended to the product name.

### Hybrid IC Products

1. Lead elimination from lead pins

Lead elimination - plating composition: Sn (This applies to the external pins/leads.)

Changeover method : Natural changeover (implemented from June 2003)

No changes to product names

2. Internal lead elimination

(However, the current high melting point solder will be used until a replacement material is found.)

Lead elimination - plating composition: Sn-Ag-Cu

Changeover method : On-demand changeover once non-lead-free product stocks run out.

(implemented from December 2004)

The suffix "-E" will be appended to the product name.

\* : The suffix "-E" will not be printed on the product itself.

\* : New products and custom products will not have the suffix "-E" added.

### ISB Products

\*: The high melting point solder used internally (performed material) will be used until a replacement material is found.

Lead elimination - plating composition: Sn-Ag-Cu

Changeover method : On-demand changeover once non-lead-free product stocks run out.

The suffix "-E" will be appended to the product name.

\*: New products and custom products will not have the suffix "-E" added.