Semiconductor Product Notice

	Septmber 2, 2004
Issued by	Business Promotion Dept. Packaging Div. LSI Group, Fujitsu Limited

Re:	**Full-scale change to lead-free LSI package (Notification and request)**

Handling category		
Normal	Confidential from	
	Unrelated people	Outsiders

Corresponding products	Entire plastic packages (For the details, refer to the "Target packages for lead-free development.")
Purpose	So far, the switch to lead-free package has been progressed based on customer's request, though this time Fujitsu makes a proposal to the customers to be correctly aware of whether customers agree or not and promotes the switching for the entire transition to lead-free packages in 2004.

Description

1. Reason and background

Fujitsu engages in the abolition of hazardous substance company-wide. Especially as for Europe's RoHS Directive (Abolition targets starting from July 2006 are 6 substances including lead, cadmium, mercury, hexavalent chromium, PBB and PBDE), Fujitsu plans to abolish them from January in 2005 for the shipment to Europe and from April in 2006 for all the shipments. Early on, Fujitsu's Electronics Devices Group started actions to compliant with this directive, and since only lead out of the RoHS' 6 hazardous substances is included in our LSI packages, we focus on the abolishment of lead and promote it, aiming at the complete abolishment of lead by the end of 2004. (Excluding the products that customers do not want agree on lead-free.)

Therefore, we propose the switch to lead-free to our customers and grasp the reliable information whether each customer agrees or not. As for the products that customers agreed on lead-free, we promotes the switch one by one. As for the products that customers do not agree, we ask our customers to show when switch is possible by promoting individual customer. Moreover, the percentage of lead-free is about 50% (customer request base) at present and so substantial efforts might be necessary to achieve the goal in a short period of time.

2. New development policy

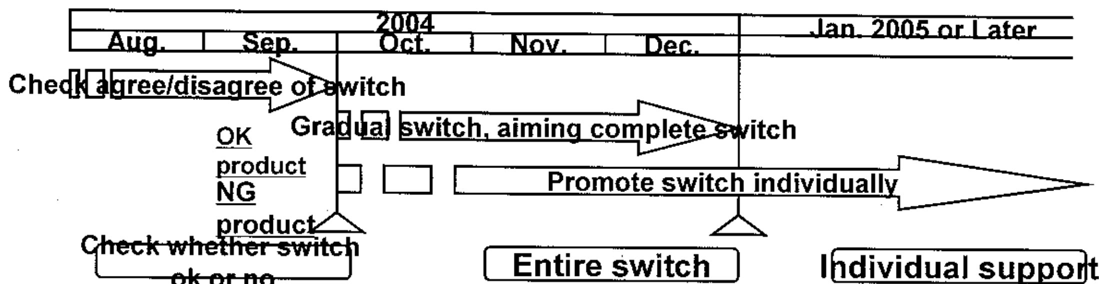
(1) We will notify our customers of switching to lead-free from October, 2004 and obtain agreement by the end of September. In the case of disagreement, we obtain customers' schedule when they are ready to switch.

(2) As for the products that we acquired customers' consent, we will switch them to lead-free one by one from October.

(3) As for the products whose switch might be possible at the end of October 2004 or later, we handle them separately and aim earlier switch.

(4) We continue switch based on customers' request also by the end of September, 2004.

(5) We place the data of heat resistivity after absorbing moisture of each package on the web to simplify the E1 registration.



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Attachment	Y	√	Contact	Business Promotion Dept. LSI Packaging Div.	Person in charge	Mr. Yonemoto(7150-6226) Mr. Takaku (7150-4172) Mr. Hasada (7150-6236)
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3. Corresponding packages and products
   (1) Corresponding package
   The packages (lead frames) in the table about heat resistivity after absorbing moisture in the website of the following URL are corresponding packages. Note that lead frames not included in this list are not corresponding this time.
   Moreover, some unsupported lead frames are added to the list and revise it later when it becomes possible to support them.
   http://www.sue.ed.fujitsu.co.jp/kikaku/cs2/index.html (FOR INTERNAL USE ONLY)
   (2) Corresponding products
   Corresponding products are the ones mounted on the packages in (1) and that satisfy the restriction conditions described in the list.
   (3) Other packages
   As for the packages and products that were not corresponding this time, we handle them individually, so please contact a person in charge of this project.
   * 1) Following packages are handled individually --- FBGA, FLGA(Only heat resistivity) QFJ, FC-BGA and PGA
   * 2) Following packages are not supported ----SIP9 and PPGA

4. Request to related department.
   (1) To sales department
   Please notify your customers of switch to lead-free products starting from October 2004 and report use in this project the results by September 30 by E-mail. We also ask you to confirm whether your customers agreement or disagreement on the switch per corresponding product and in the case of disagreement, obtain the information about the reason, problem points and possible schedule. For the agreed products, register [E1] model and direct manufacturing based on customer's schedule. As for disagreed products, we in this project inform you of how to handle them.
   (2) To each production division and persons in charge of design (CC: FIM customer service center)
   Sales department requests [E1] registration, so we ask you to handle them as soon as possible.

5. Change contents by lead-free of packages. (The explanation is the same as before).
   (1) Improvement of package heat resistivity
   It is improved from existing 240° C at max. to 250° C at max (M rank) or 260° C at max (H rank). However, we support only when our-recommended profile is used.
   <u>If a customer specifies another profile, we need to check if we can support or not, so please inquire us in this project.</u>
   (2) Change of pin materials
   QFP and SOP are changed from existing Sn-Pb plating to Sn-Bi plating.
   As for BGA, it is changed from existing Sn-Pb ball to Sn-Ag-Cu ball.
   (3) Chang of parts No.
   For lead-free product, [E1] is added to the end of existing parts No.
   (4) Change of seal
   [E1] is added to a seal. However, if there is no space on seal, it is handled in a different way. Moreover, in the case of special seal, customer's approval is necessary.

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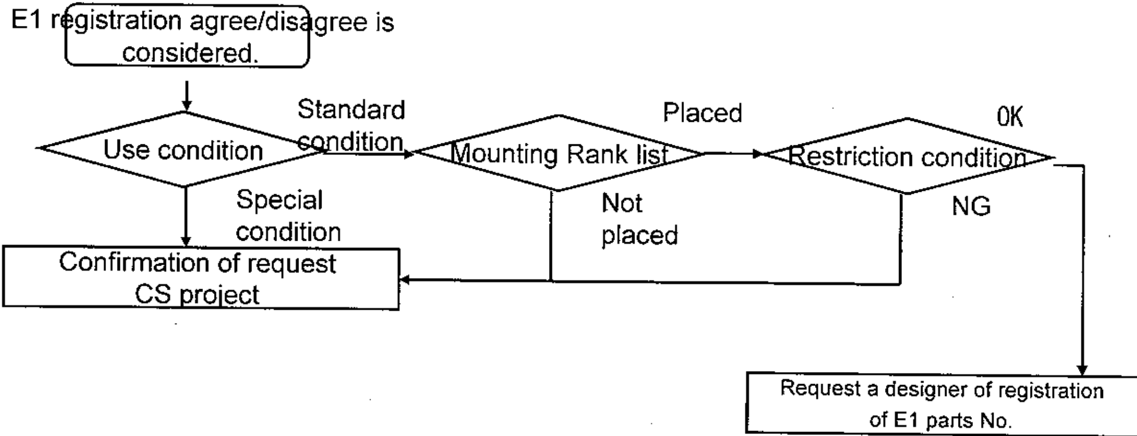
6. Simplification of E1 registration
   (1) Heat resistivity after absorbing moisture and recommended packaging conditions (profile) of each package (lead frame) are uploaded on the web. In the future, if customer's use condition is standard condition (within the recommended mounting condition), E1 registration is possible with the heat resistivity after absorbing moisture in the list, request the designer in charge of E1 parts No. registration.
   (2) If a customer's use condition is special, request our project to confirm.



7. Related material
   (1) Material-1: Letter to customers ...... (attached)
   (2) Related material: Fujitsu's state of lead-free regarding Fujitsu's semiconductor products...... (Refer to the following web site.)

Home page of CS PJ, Package Division,Business Promotion Dept. ⇩ http://www.sue.ed.fujitsu.co.jp/cs2/kikaku/index.html

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