



SANYO Semiconductors NEWS

Replace the SANYO Semiconductor NEWS No. 8003 with 8003A.

Announcement of Changes to Inner Box Markings and Pin Plating Associated with Switching to Lead-Free Specifications for IC Pins (Products Affected: BIP Through Hole Devices)

Thank you for your continued use of our semiconductor products.

Please note that, as captioned above, SANYO is making the following changes.

Please make a note of this if you use these or related products.

1. Changes

- (1) The plating material used on the IC pins has been changed from SnPb plating to a SnBi (1 to 4% Bi by weight) material.
- (2) The words "LEAD FREE" have been added to the markings on the inner box (packing case) and the suffix "-E" has been added to the product number. (See the following page.)

2. Affected Products

See the BIP Trough Hole Devices table.

3. Reason

The SANYO Electric Group has established the "Action E21" environmental action plan to work together for continued improvement in SANYO's environmental performance. As part of these activities, SANYO Electric Semiconductor Company is progressing with its plan to eliminate all lead from lead pins by the end of 2005.

To move forward with its efforts, SANYO is informing its customers of these changes in devices for which lead-free specification environments (development of manufacturing locations for mass-production and achievement of required heat resistance characteristics) are already in place.

Changes only affect the material of lead pin plating for the targeted products. Therefore, the affected products will not experience any deviation electrically or in terms of their reliability. Furthermore, these changes will not affect current mounting processes used by customers. Device specifications fully support conversion of customer's existing manufacturing lines to lead-free lines.

4. Implementation data

Shipment of lead-free products will begin starting November, 2005. The change will be applied sequentially to different products. The exact date of the start of shipments may be slightly delayed because of stock conditions for some of the products. Please contact your SANYO sales representative if you have any questions or require more detailed information regarding this change.

Details (Continued on next page.)

- (1) Notes on the heat resistance of lead-free products
- (2) Examples of lead-free product labeling
- (3) Notes on solderability
- (4) Plated joint strength (reference data)

Continued on following page.

Continued from preceding page.

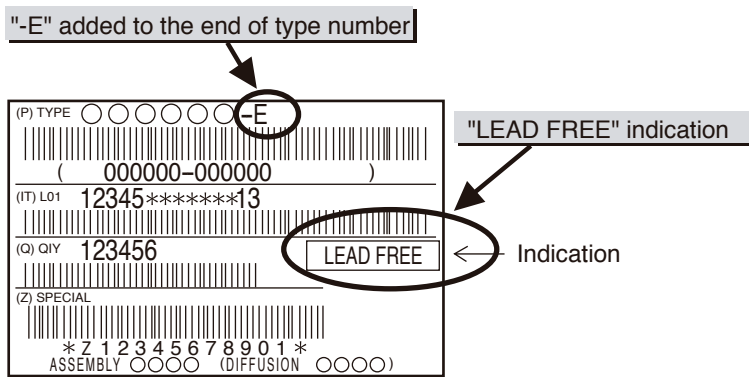
[Details]

(1) Notes on the heat resistance of lead-free products.

Heat resistance temperature profile of lead-free products

	Lead-free production	Non lead-free production (conventional)
Flow	260°C, 10s	260°C, 10s
Hand Solder	380°C, 3s	350°C, 3s

(2) Examples of lead-free product labeling



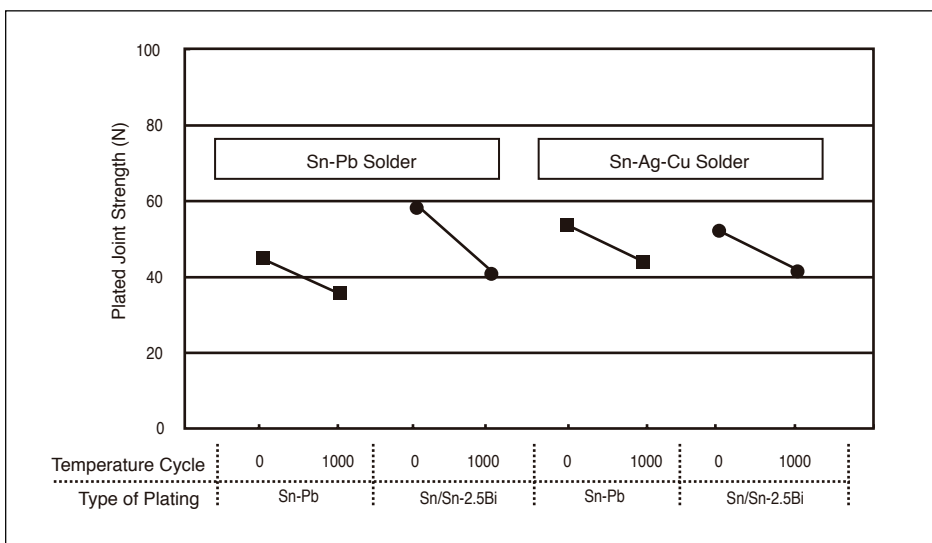
(3) Notes on solderability

Evaluation Sample: SIP-10 (Material: Cu) and SIP-16 (Material: 42 Alloy)

	Evaluation solder	Temperature/Time	Flux	Result *1
Sn-Pb (Current Product)	Sn-Pb	230°C/3s	Used (RMA type)	Passed
	Sn-3.0Ag-0.5Cu	245°C/3s	Used (RMA type)	Passed
Sn/Sn-Bi Plating (Lead-free Product)	Sn-Pb	230°C/3s	Used (RMA type)	Passed
	Sn-3.0Ag-0.5Cu	245°C/3s	Used (RMA type)	Passed

*1: Acceptability criteria: More than 95% of bathing area must be wet with solder.

(4) Plated joint strength (reference data)



- Test equipment: Hooking extension tester
 - Evaluation board: Glass-epoxy resin
 - Temperature cycle condition: -40°C (30 minute hold) to +125°C (30 minute hold)
 - SANYO acceptance criteria: The joint strength after 1000 cycles must be at least 50% of the initial strength.
- Note: The results shown above are for reference and do not constitute a guarantee.

Lead-Free Specification Products (BIP Through Hole Devices table)

Package	Type No.	Package	Type No.	Package	Type No.		
DIP006	LA5527	DIP16 (300mil)	LA3433	DIP20 (300mil)	LB1247		
DIP8 (300mil)	LA4224		LA3600		LB1475		
	LA4524L		LA7220	DIP22(400mil)	LA7958		
	LA4525		LA7642N	DIP22S(300mil)	LA1265		
	LA5528N		LA7800		LA1265S		
	LA5692D		LB1211		LA1800		
	LA5693D		LB1212		LA7852		
	LA6082D		LB1213		LA7853		
	LA6358N		LB1214		LA7945N		
	LA6358NL		LB1215		DIP24S(300mil)	LA1266	
	LA6358NLL		LB1216			LA1267	
	LA6393D		LB1232	LA1267S			
	LA6393DL		LB1233	LA1802			
	LA6393DLL		LB1233L	LA1805			
	LA6393DS		LB1258	LA1823			
	LA6458D		LB1275	LA1824			
	LA6458DLL		LB1275T	LA1824HK			
	LA6517		LB1408	LA1824HKSP			
	LA8501		LB1710	LA1824L			
	DIP10S(300mil)		LB1267	DIP16F(300mil)		LB1205	LA1826
			LB1268			LB1205L	LA1832
LB1630			LB1235		LA1832S		
LB1639			LB1235L		LA1833N		
LB1660N			LB1650		LA1844		
LB1661			LB1650L		LA2232		
LB1969			LB1664N		LA3241		
LB8555D			LB1666		LA70001		
			LB1730		LA70001L		
			LB1731		LA70001LL		
			LB1731L		LA70011LL		
DIP12F(300mil)			LA4227		DIP18(300mil)	LA4303	LA7116
	LA4227L		LB11988	LA75501			
	LA4627HK		LB11988A	LA75503			
	LA6520		LB11988N	LA7555			
	LA6523		LB1240	LA7565B			
	LB1648		LB1241	LA7565E			
	LB1648L		LB1246	LA7565N			
			LB1256	LA7566			
		LB1257	LA7566S				
		LB1740L	LA7567B				
	LB1745	LA7567N					
	DIP20H(500mil)	LA7575					
	DIP20(300mil)	LA1135M	LA7577				
DIP14(300mil)		LA3220	LA1137NM	LA7577L			
		LA6324N	LA2650	LA7577NL			
		LA6324NF	LA3246	LA7577V			
		LA6324NLL	LA3607S	LA7578N			
		LA6339	LA7696	LV1100			
		LA6339L	LA7850	LV1150			
		LA6339LL	LA7851	DIP28H(500mil)	LB11827		
		LB1407	LA7856		LB11847		
DIP16(300mil)		LA1143	LA7916		LB11847L		
		LA1260	LA8515		LB1824		
		LA2113	LB11983	LB1845L			
	LA3361	LB11983N	LB1847				
	LA3361A	LB1245	LB1847L				

Package	Type No.	Package	Type No.	Package	Type No.		
DIP28H(500mil)	LB1870	DIP54S(600mil)	LA76810	SIP9	LA5690S		
	LB1921		LA76810A		LA5691S		
	LB1924A		LA76810HA		LA5692S		
	LB1946		LA76810HAL		LA6358NS		
DIP28HE(500mil)	LB1872K		LA76810SB		LA6358NSL		
DIP28SD(400mil)	LA3450		LA76810SBL		LA6358NSLL		
	LA7337		LA76812		LA6393S		
	LA7337L		LA76814B		LA6393SL		
	LA7359		LA76814K		LA6393SLL		
	LB1845D		LA76814KL		LA6458SL		
DIP30SD(400mil)	LA1837		LA76818AL		LA7152		
	LA1838L		LA76818J		LA7221		
	LA6537		LA76818N		LA7808		
	LA6541D		LA76822		LA7910		
	LA6541DLL		LA76824N		LA7952		
	LA6548D		LA76824NL		LA7956		
	LA6548ND	LA76828	LB1403N				
	LA6558	LA76828A	LB1433N				
	LA6574D	LA76828N	LB1443N				
	LA7123	LA76828NL	SIP9Z	LA7058R			
	LA7124	LA76834	SIP10	LA6515			
	LA7520	LA76835		LA7210			
	LA7625	LA76835A		LA7890			
	LA7860	LA76835L		LA7950			
	LA7953	LA76837		LB1642B			
	LB11880	LA76843N		LB1643			
	LB1651D	LA76845		LB1643L			
	DIP36S(400mil)	LA76850		DIP64S(600mil)	LA7407	SIP10F	LB1943
		LB11691			LA7685J		LA4260
LV1017		SIP4H		L78MG	LA4261		
DIP42S(600mil)	LA2785L	SIP5	LA5003	LA4265			
	LA2786L		LA5004	LA4285HK			
	LA7195		LA5587	LA5644			
	LA7391AN	LA7213	LA6512				
	LA7395	LA7976	LB1640NS				
	LV1018	SIP5H	LA4225	LB1645N			
LV1117		LA4425A	SIP10H	LA4270			
DIP48S(600mil)	LA2787	SIP7H	LA7830		LA4601NL		
	LA7680		LA7832		LA7846		
DIP52S(600mil)	LA76070A		LA7833		LA7846N		
	LA76070N		LA7840K		LA7849		
	LA76075	LA7840L	LA7876				
	LA76075N	LA7841	SIP10HD	LA4263			
	LA76170L	LA7845N		LA4266			
	LA76170N	SIP8		LA4267			
	LA7670	LA1150		LA4268			
	LA7670K	LA3160		LA4273			
	LA7672	LA3160R		LA4276			
	LA7673	LA7016		LA4277			
	LA7674	LB8555S		LA7847			
LA7674K	SIP9	LA7848					
LA7687A	LA1177	LA7875N					
LA7687B	LA1178M	SIP10HZ	LA7846NZ				
LA7687N	LA1600		LA7876NZ				
LA7688B	LA3210		LA7876Z				
DIP54S(600mil)	LA76805		LA3210B				
			LA3335				
			LA4140	SIP12	LA2610		

Package	Type No.	Package	Type No.	Package	Type No.
SIP12	LA2610L	TO220-5H	L78MS05J	TP5H	L78LR05C
	LA7151L		L88R05D		L78LR05CL
	LA7222		L88R05DL		L78LR05D
SIP12H	LA42152	TO220-7H	LA6500		L78LR05DJ
	LA4282		LA6500LL		L78LR05DL
	LA44402		LA78040A		L78LR05E
	LA44403		LA78040		L78LR05EL
	LA4629		LA78040N		L78LR05F
	LA4633		LA78041		L78LR05G
	LA5618		LA78045		L78LR05GL
SIP13H	LA42071	TP3H	L78M05T		L78LR05H
	LA44401		L78M05TL		L88MS05T
	LA4485		L78M05TLL		L88MS05TL
	LA4631		L78M06T		L88MS05TLL
	LA5605		L78M06TL		L88MS06T
	LA5611		L78M06TLL		L88MS08T
	LA7835		L78M07T		L88MS09T
	LA7835S		L78M08T		L88MS09TL
	LA7836		L78M08TL		L88MS09TLL
	LA7838		L78M08TLL		L88MS12T
SIP13HJ	LB1947		L78M09T		L88MS12TL
SIP13HK	LA4301		L78M09TL		L88MS33T
SIP14H	LA4450L		L78M09TLL		L88MS33TL
	LA4490NF		L78M10T		L88MS33TLL
	LA5606N		L78M10TLL		LA5530P
SIP14HZ	LA4625		L78M12T		LA5588
	LA4628L		L78M12TL	HZIP25	LA6501
	LA4663		L78M12TLL		LA4743J
	LA4663A		L78M15T		LA4743K
	LA4663L		L78M15TL		LA4743KL
	LA4663T		L78M18T		LA47504
	LA4725		L79M05T		LA47505
	LA4728		L79M05TL		LA47507
	LB11650		L79M05TLL		LA47511
	LB11651		L79M06T		LA47512
SIP16Z	LA1140		L79M08T		
	LA1175		L79M08TLL		LA47514
	LA3370		L79M09TL		LA47515
SIP18HS	LA4630N		L79M09TLL		LA47532
	LA4708		L79M10T		LA47534
SIP18Z	LA1145		L79M12T		LA47536
	LA4905		L79M12TL		LA4762
SIP23HZ	LA4905L		L88M05T		
			L88M05TL		
TO220-5H	L780S09		L88M05TLL		
	L780S10		L88M06T		
	L780S12L		L88M09T		
	L780S15		L88M09TL		
	L780S18		L88M12T		
	L78MR05		L88M12TL		
	L78MR05L		L88M12TLL		
	L78MR05LL		L88M33T		
	L78MR05LM		L88M33TL		
	L78MR06		L88M33TLL		
	L78MR08		L88M35T		
	L78MR12	TP5H	L78LR05B		