



**ENHANCED SOLUTIONS  
DESIGN/PROCESS CHANGE NOTIFICATION**

*(formerly Military & Aerospace Division)*

**PCN Nr: 1999 Listing**

**Issued: 01/05/99**

GIDEP Nr:	GIDEP Category:	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

**Proposed Date of Change:**

**Description of Change:**

**Effect of Change:**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>		

**Other Ref:**

**Associated Notes / Table(s):**

Please note - [S] indicates PCN contains information also relating to Space Level Products

<b><u>PCN</u></b>	<b><u>Nr Date</u></b>	<b><u>Description</u></b>
MA99001	01/05/99	9936 JAN B Device Obsolescence
MA99001A	03/30/99	AMENDED - 9936 Device Obsolescences
MA99002	01/05/99	LM117 SMD Obsolescence
MA99003	01/14/99	Selective Analog Obsolescence
MA99004	02/16/99	Q3FY99 Military Division Obsolescence [S]
MA99005	02/18/99	5" Wafer Glassivation Process - Logic [S]
MA99006	03/01/99	6" Wafer Glassivation / Metal Process - Logic [S]
MA99007	03/23/99	LM1596H-MIL Obsolescence
MA99008	03/29/99	54ABT244 & 54ABT245 Y-Step Redesign
MA99009	04/19/99	CD4023 JAN B Device Die Change
MA99010	05/10/99	Selective Analog Obsolescence
MA99011	05/12/99	Q4FY99 Military Division Obsolescence [S]
MA99012	06/07/99	Division Name Change [S]
MA99013	06/10/99	CD4001 and CD4013 JAN B Device Die Changes
MA99014	07/12/99	LM12H458 Testing at +125C
MA99015	08/03/99	DS90C032 Redesign, Die Step Revision C
MA99016	08/04/99	LFAST Level V Fab Transfer (NSUK 4" to 6")[S]
MA99017	08/09/99	TO46 Side Mark [S]
MA99018	08/18/99	FACT RH Consolidation [S]
MA99019	08/31/99	Q1FY00 Enhanced Solutions Obsolescence [S]
MA99020	09/01/99	FAST CDIP Solder Dip (Anam)
MA99021	09/13/99	LM611/613 Datasheet Change
MA99022	10/04/99	CLC502 Gain Flatness Testing
MA99023	10/12/99	CD4012 / CD4019 JAN B Obsolescence



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99001**

**Issued: 01/05/99**

<b>GIDEP Nr:</b> AH6-D-99-02	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Hex Inverter M38510/03003BCA JD9936BCA

**Proposed Date of Change:**

December 17, 1998

**Description of Change:**

National Semiconductor regrets to inform you that we are obsoleting the JAN B version of the 9936 function, customer part number M38510/03003BCA.

The mask set which makes this device is no longer available and we have depleted all of our JAN B inventory of die and finished goods. Regrettably, we will not be able to offer a Last Time Buy for this device.

However, National still offers an /883 version of this device (ordering code 936DMQB). This device meets or exceeds all the JAN B electrical requirements so it can be used as a direct replacement for the JAN B part.

**Effect of Change:**

This change should have minimal customer impact except for the part number change. The /883 device which meets or exceeds JAN B electricals is available as a replacement. The /883 device is supplied in the same package and uses the same die design and FAB process as the JAN B part. Thus, no qualifications should be required. The only difference is that the /883 die was fabricated during a time which allowed re-work. JAN B die rules never allowed fabrication re-works.

We apologize in advance for any inconvenience this change may cause. If you have any questions, please contact your local National Sales Representative.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402

<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Don Miller, Logic Product Engineer (207) 541-8492 email: don.miller@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99001A**

**Issued: 03/30/99**

<b>GIDEP Nr:</b> AH6-D-99-02A	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Hex Inverter            M38510/03003BCA      JD9936BCA

**Additionally:**            936DMQB  
                                  936FMQB

**Proposed Date of Change:**

December 17, 1998 for JD9936BCA  
March 1999 for 936DMQB and 936FMQB

**Description of Change:**

**ORIGINAL TEXT DATED JANUARY 1999:**

National Semiconductor regrets to inform you that we are obsoleting the JAN B version of the 9936 function, customer part number M38510/03003BCA.

The mask set which makes this device is no longer available and we have depleted all of our JAN B inventory of die and finished goods. Regrettably, we will not be able to offer a Last Time Buy for this device.

However, National still offers an /883 version of this device (ordering code 936DMQB). This device meets or exceeds all the JAN B electrical requirements so it can be used as a direct replacement for the JAN B part.

**ADDITIONAL NEW TEXT DATED MARCH 1999 WITH TWO MORE DEVICES AND CHANGED REPLACEMENT SUGGESTION :**

National Semiconductor regrets to inform you that we are obsoleting the 883 version of the 9936 function, customer part numbers 936DMQB and 936FMQB.

We recently announced the obsolescence of the JAN version and recommended the 883 part as a replacement, however, the mask set for this device has also been damaged beyond use and the inventory of the currently qualified die has been depleted to the point where we are only capable of supporting our existing backlog. Regrettably, we will not be able to offer a Last Time Buy for these devices.

Rochester Electronics still has inventory of older die for these devices which should meet or exceed the 883 electrical requirements so it can be used as a direct replacement.

**Effect of Change:**

**THE FOLLOWING PARAGRAPH FROM THE ORIGINAL TEXT UNFORTUNATELY NO LONGER APPLIES:**

This change should have minimal customer impact except for the part number change. The /883 device which meets or exceeds JAN B electricals is available as a replacement. The /883 device is supplied in the same package and uses the same die design and FAB process as the JAN B part. Thus, no qualifications should be required. The only difference is that the /883 die was fabricated during a time which allowed re-work. JAN B die rules never allowed fabrication re-works.

**We apologize in advance for any inconvenience this change may cause.**

**If you have any questions, please contact your local National Sales Representative.**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Don Miller, Logic Product Engineer (207) 541-8492 email: don.miller@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**





## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99002**

**Issued: 01/05/99**

GIDEP Nr: AH6-D-99-03	GIDEP Category: DMSMS	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Effective immediately, National Semiconductor's Military/Aerospace Division will obsolete the following voltage regulators:

<u>National Part Number</u>	<u>Standard Microcircuit Drawing Number</u>
LM117H-SMD	7703401XA
LM117HVH-SMD	7703402XA
LM117K-SMD	7703401YA
LM117HVK-SMD	7703402YA

**Proposed Date of Change:**

December 1998

**Description of Change:**

This part is no longer manufacturable by National to the Standard Military Drawing specifications and we suggest to use the alternate National Semiconductor parts:

<u>National Part Number</u>	<u>JAN Document Number</u>
LM117H/883	
JL117BXA	JM38510/11703BXA
LM117HVH/883	
LM117K/883	
JL117BYA	JM38510/11704BYA
LM117HVK/883	

**Effect of Change:**

The cause for this action is due to the fact that we are unable to yield any product that meets the SMD specification for Thermal Regulation or High Voltage Breakdown for this part in these packages.

National Semiconductor apologizes in advance for any inconvenience this discontinuance may cause.

Please contact National Semiconductor's Customer Support Center at

1-800-272-9959 or your local Sales Representative with any questions.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Larry McGee, M/A Analog Eng Mgr (408) 721-7231 email: larry.mcgee@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99003**

**Issued: 01/14/99**

<b>GIDEP Nr:</b> AH6-D-99-04	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Selective Analog Products -

Table I: Military Packaged Device

Table II: Military Die Product

Table III: Commercial Die sold by the Mil/Aero Division

**Proposed Date of Change:**

Life Time Buy date October 23, 1999.

**Description of Change:**

The rapid deployment of advanced technology has rapidly reduced semiconductor prices but at the cost of product obsolescence. The 4 inch wafer fab in Greenock, Scotland was built in 1978 and it has become difficult to run this fab due to its age. We have, therefore, decided to close this fab and to move most of the products in it to the 6 inch line in Scotland or a similar line in Arlington, Texas.

There are some processes and products for which it is not economically feasible to move. These products will be made obsolete according to our policy. In this particular case, because this last 4 inch fab will be closed and because we are not sure of the total demand, we urge you to evaluate your needs and place your orders as soon as possible.

Product Change Notifications (PCNs) describing those parts which are moving will be issued after the first of the year, following the development of the qualification plans.

Should you have any questions, please do not hesitate to contact your National Semiconductor salesperson.

**Effect of Change:**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Larry McGee, M/A Analog Eng Mgr (408) 721-7231 email: larry.mcgee@nsc.com	Jackie Collard, Die products (207) 541-8760 email: jackie.collard@nsc.com

**Other Ref:**

**Associated Notes / Table(s):**

Columns A are the devices being obsoleted; Column B is the suggested alternate replacement part; Column C is the alternate source manufacturer.

**Legend:**

AD Analog Devices  
MOT Motorola  
TI Texas Instruments

<b>Table I: Military Packaged Device</b>		
Column A	Column B	Column C
National Part Number	Suggested Replacement	Suggested Manufacturer
LF11333D/883		AD

<b>Table II: Military Die</b>		
Column A	Column B	Column C
National Part Number	Suggested Replacement	Suggested Manufacturer
LF441 MD8	LF441	AD MOT TI

<b>Table III: Commercial Die</b>		
Column A	Column B	Column C
National Part Number	Suggested Replacement	Suggested Manufacturer
LF111 MWC	NONE	
LF441 MWC	LF441	AD MOT TI
LM11 MWC	MA362	AD



## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99004**

**Issued: 02/16/99**

GIDEP Nr: AH6-D-99-05	GIDEP Category: DMSMS	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Reference TABLE I                      Military Packaged Products

**Proposed Date of Change:**

Lifetime buy purchase orders will be accepted until **08 MARCH 2000.**

**Description of Change:**

**PRODUCT OBSOLESCENCE**

National Semiconductor wishes to inform you that the devices listed in Table I are being discontinued. The decision to obsolete these products was primarily due to low volume or minimal demand from our customer base. In most cases, National can provide an upgrade to meet your system needs.

**Effect of Change:**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

**Other contacts**

Kirk Lemon  
Mil/Aero Analog Marketing  
(408) 721-4172  
email: kirk.lemon@nsc.com

Brian Stearns  
Mil/Aero Logic Marketing  
(207) 541-8671  
email: brian.stearns@nsc.com



**Other Ref:**

**Associated Notes / Table(s):**

Columns A and B are the devices being obsoleted;  
Column C is the suggested alternate replacement part;  
Column D is the alternate source manufacturer.

<b>TABLE I: MILITARY PACKAGED PRODUCTS</b>			
<b>COLUMN A</b>	<b>COLUMN B</b>	<b>COLUMN C</b>	<b>COLUMN D</b>
<b>SLASHSHEET OR STANDARD MICROCIRCUIT DRAWING NUMBER</b>	<b>NATIONAL SEMICONDUCTOR PART NUMBER</b>	<b>ALTERNATE PART NUMBER</b>	<b>ALTERNATE SOURCE</b>
5962-9157803QJA	ADC1251CMJ-QML	NONE	
	CL425S01D	CLC425AJ-QML	NATIONAL
	CL502S03H	CLC502AJ-QML	NATIONAL
	CL520S03H	CLC520AJ-MIL	NATIONAL
	CL532S01D	CLC532AJ-QML	NATIONAL
	CL533S02B	CLC533AJ-QML	NATIONAL
JM38510/10401BCA	JD55107BCA	NONE	
JM38510/10701SXA	JL109SXA	LM109H/883	NATIONAL
	LM101AJ-14/883	LM101AJ/883 LM101AW/883	NATIONAL
7702806XA	LM103H-3.0-SMD	NONE	
	LM103H-3.0/883	NONE	
5962-9156501M2A	LM6118E/883	LM6172AMWG-QML	NATIONAL
5962-9156501MPA	LM6118J/883	LM6172AMJ-QML	NATIONAL



## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99005**

**Issued: 02/18/99**

<b>GIDEP Nr:</b> AH6-C-99-05	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

FACT 2.0 micron (54ACxxx and 54ACTxxx) Logic Products - All product assurance levels, including FACT radiation tolerant product, and package types are affected. Wafer and die products (commercial grade 74xxx and military grade 54xxx) of these FACT 2.0 micron (CMOS) products are also affected.

**Proposed Date of Change:**

**December 1998**

**Description of Change:**

**GLASSIVATION CHANGES ON FAIRCHILD 5" FACT 2.0 FAB PROCESS**

National Semiconductor has approved the following change to Fairchild's 5" FACT 2.0 micron wafer fab process. Die for the above Mil/Aero products are made with this fab process.

- 1) Replacing the 11,500 Angstrom PECVD Oxynitride glassivation with a 10,000 Angstrom PECVD Nitride glassivation.

**Effect of Change:**

The process change is part of Fairchild's continuing process improvement activities. It will have no effect on product function, quality, or reliability, nor on the radiation tolerance of FACT RHA product.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

<b>Other contacts</b>	Steve Lombard, Logic Product Eng. (207) 541-6274 email: <a href="mailto:steve.lombard@nsc.com">steve.lombard@nsc.com</a>	
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**Other Ref:**

**Associated Notes / Table(s):**



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99006**

**Issued: 03/01/99**

<b>GIDEP Nr:</b> AH6-C-99-06	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

ABT (BiCMOS) and FACT 1.5 micron (CMOS) Logic Products (54ABTxxx, 54ACQxxx, 54ACTQxxx, 54FCTxxx, and SCANxxx) - All product assurance levels and package types are affected. Wafer and die products (commercial grade 74xxx and military grade 54xxx) of these ABT and FACT 1.5 products are also affected.

**Proposed Date of Change:**

**DECEMBER 1998**

**Description of Change:**

**GLASSIVATION AND METAL CHANGES ON FAIRCHILD 6" FAB PROCESSES**

National Semiconductor has approved the following two changes to Fairchild's 6" BiCMOS and FACT 1.5 micron wafer fab processes. Die for the above Mil/Aero products are made with these fab processes.

- 1) Replacing a single layer PECVD Oxynitride glassivation with a dual layer PECVD Oxide Nitride glassivation.
- 2) Implementing an anti-reflective coating over Metal 1 and Metal 2.

**Effect of Change:**

The process changes are part of Fairchild's continuing process improvement activities. They will have no effect on product function, quality, or reliability.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com

<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Steve Lombard, Logic Product Eng. (207) 541-6274 email: steve.lombard@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99007**

**Issued: 03/23/99**

GIDEP Nr: AH6-D-98-13A	GIDEP Category: DMSMS	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Balanced Modulator-Demodulator LM1596H-MIL

**Proposed Date of Change:**

March 1999 -Life Time Buys will no longer be accepted.

**Description of Change:**

Effective immediately, National Semiconductor's Military/Aerospace Division will obsolete the LM1596H-MIL. These parts are no longer manufacturable by National for the following reason:

We are no longer able to fabricate die for the LM1596 since the fab for this part was closed in the fall of 1998. A die bank to support the "Life Time Buy" for this part was established based on sales history since requests for customer forecasts were not answered. Subsequent to the fab closure, Motorola also discontinued this part and many commercial customers ordered the -MIL version to cover their commercial requirements. This depleted our die supply before we could service all the demand for the LM1596H-MIL.

Customers of this product are being notified that we will no longer be able to supply any of this product. Life Time Buys will no longer be accepted. It is recommended that customers contact Lee Mathiesen at Lansdale (602/438-0123) if they have additional demand for the LM1596H-MIL.

National Semiconductor apologizes in advance for any inconvenience this discontinuance may cause.

Please contact National Semiconductor's Customer Support Center at 1-800-272-9959 or your local Sales Representative with any questions.

**Effect of Change:**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
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<b>Other contacts</b>	Lee Mathiesen, Lansdale (602) 438-0123	

**Other Ref:**

**Associated Notes / Table(s):**



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99008**

**Issued: 03/29/99**

<b>GIDEP Nr:</b> AH6-C-99-07	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

- 1.) Advanced Bi-CMOS(ABT) Octal  
Buffer Line Driver: 54ABT244  
5962-9214701QRA, 5962-9214701QSA, 5962-9214701Q2A
  
  - 2.) Advanced Bi-CMOS(ABT) Octal  
Bidirectional Transceiver: 54ABT245  
5962-9214801QRA, 5962-9214801QSA, 5962-9214801Q2A
- Wafer and die products : 54ABT244 MDA and 54ABT244 MWA  
54ABT245 MDA and 54ABT245 MWA

**Proposed Date of Change:**

Datecode 9821

**Description of Change:**

**DIE REVISION Z TO Y.**

National has approved a redesigned die for use in our QML product. The redesign consisted of an approx 35% die shrink and an ESD input structure change.

The 54ABT244 ESD class improved/changed from Class 1 to Class 2(3.5kV)  
The 54ABT245 ESD class remains at Class 2(3.5Kv)

Effective as of March 1999, the customer may receive either Z or Y step material. The Z step material will continue to be shipped until die inventory is depleted.

**Effect of Change:**

Other than the differences in die size, layout, and mask identifiers, the change will be transparent to customers.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Bill Petcher DMD Product Line Eng. 207-761-6274 email: bill.petcher@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



***MILITARY / AEROSPACE  
DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99009**

**Issued: 04/19/99**

<b>GIDEP Nr:</b> AH6-C-99-08	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

Triple 3 Input NAND Gate    JM38510/05003BCA    JM4023ABCA

**Proposed Date of Change:**

April 19, 1999

**Description of Change:**

National Semiconductor has exhausted its supply of die inventory (from National's old Danbury, CT. facility) which is currently used to build the JM4023ABCA device. However, we have an equivalent die which was manufactured at National's Greenock, Scotland (UK) facility.

The old Danbury die has a die size of 55x40 mils and a physical die identification of 4623, revision C. The new UK die has a die size of 56x37 mils and a physical die identification of 46B23, revision C.

The UK die has been fully qualified for use in building JM4023ABCA. As of the above date, the UK die will solely be used in the manufacture of JM4023ABCA devices.

**Effect of Change:**

JM4023ABCA product built with the UK FAB'ed die meets or exceeds all electrical and reliability standards as imposed by JM38510/05003. The FAB baselines between Danbury and UK for these die are very close, with no differences in both passivation and metallization compositions or thicknesses. This die change will have no adverse affects upon customers and will be virtually transparent.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com

<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Don Miller, Logic Product Engineer (207) 541-8492 email: don.miller@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**





## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99010**

**Issued: 05/10/99**

GIDEP Nr: AH6-D-99-06	GIDEP Category: DMSMS	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

LF111H  
LF311H  
LF311 MWC  
LF157AH/883

**Proposed Date of Change:**

To be assured of having your requirements met, your final order for these four parts should be placed not later than October 23, 1999.

Last shipments can be as late as January 28, 2000.

**Description of Change:**

As previously announced, National Semiconductor has decided to close its four inch wafer fab in Greenock, Scotland and move most of its products to the six inch line in Scotland or a similar line in Arlington, Texas.

A Product Discontinuance Notification (PCN# MA99003) was issued in January 1999 identifying a number of products which are not economical to move to the new factory. Since January 1999, we have identified four additional products for which historical and forecast business does not support transferring to the new facility.

In this particular case, because this last four inch fab will be closed, we urge you to evaluate your needs and place your orders as soon as possible. It would be prudent to give us a forecast of unusual demand so that we can plan for your needs. Unfortunately, there are no suggested replacement devices.

Should you have any questions, please do not hesitate to contact your National Semiconductor salesperson.

**Effect of Change:**

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Larry McGee, M/A Analog Eng Mgr (408) 721-7231 email: larry.mcgee@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



## ***MILITARY / AEROSPACE DESIGN/PROCESS CHANGE NOTIFICATION***

**PCN Nr: MA99011**

**Issued: 05/12/99**

<b>GIDEP Nr:</b> AH6-D-99-07	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following MIL/AERO product(s):***

**Product ID (Description):**

TABLE I Military Packaged Product

TABLE II Commercial Die Sales Managed by the Military Aerospace Division

**Proposed Date of Change:**

Lifetime buy purchase orders will be accepted until **7 JUNE 2000**.

**Description of Change:**

**PRODUCT OBSOLESCENCE**

National Semiconductor wishes to inform you that the devices listed in Tables I and II are being discontinued. The decision to obsolete these products was primarily due to low volume or minimal demand from our customer base. In most cases, National can provide an upgrade to meet your system needs.

**Effect of Change:**

While all best efforts will be made to ensure that product can be supplied for any order received during the Life Time Buy period, this cannot be guaranteed.

We would therefore advise that you do not wait until the last moment before placing your final orders.

Suggested alternate devices and manufacturers are viable at the time of publication of this document.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Mil Aero Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

<b>Other contacts</b>	<p>Kirk Lemon Mil/Aero Analog Marketing (408) 721-4172 email: kirk.lemon@nsc.com</p> <p>Brian Stearns Mil/Aero Logic Marketing (207) 541-8671 email: brian.stearns@nsc.com</p> <p>Jacqueline Collard Die products Business Unit Marketing (207)541-8760 email: jacqueline.l.collard@nsc.com</p>	
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**Other Ref:**

**Associated Notes / Table(s):**

Columns A and B are the devices being obsoleted;  
Column C and Column D is the suggested alternate replacement part;  
Column E is the alternate source manufacturer.

<b>TABLE I: MILITARY PACKAGED PRODUCTS</b>				
<b>COLUMN A</b>	<b>COLUMN B</b>	<b>COLUMN C</b>	<b>COLUMN D</b>	<b>COLUMN E</b>
<b>SLASHSHEET OR STANDARD MICROCIRCUIT DRAWING NUMBER</b>	<b>NATIONAL SEMICONDUCTOR PART NUMBER</b>	<b>SLASHSHEET OR STANDARD MICROCIRCUIT DRAWING NUMBER</b>	<b>ALTERNATE PART NUMBER</b>	<b>ALTERNATE SOURCE</b>
	CD4025BMJ/883			NONE
	CD4025BMW/883			NONE
	CD4053BMW/883			NONE
	DM54LS05W-MLS	5962-9059001SDA	JM54AC05SDA	NATIONAL
	DM54LS257AE/883		54F257ALMQB	NATIONAL
	DM9309J/883			NONE
	DS16F95W-MCP		DS16F95W/883	NATIONAL
M38510/30502SDA	JD54LS86SDA	M38510/75202SDA	JM54AC86SDA	NATIONAL
M38510/00104SDA	JD5400SDA	M38510/75001SDA	JM54AC00SDA	NATIONAL
M38510/00401SDA	JD5402SDA	M38510/75101SDA	JM54AC02SDA	NATIONAL
M38510/00801SCA	JD5406SCA	M38510/00801BCA	JD5406BCA	NATIONAL
M38510/00801SDA	JD5406SDA	M38510/00801BDA	JD5406BDA	NATIONAL
M38510/00803SCA	JD5407SCA	M38510/00803BCA	JD5407BCA	NATIONAL
M38510/00803SDA	JD5407SDA	M38510/00803BDA	JD5407BDA	NATIONAL
	LF156AH-MLS		LF156	LINEAR TECH
	LF156AH-MLS		LT1056	LINEAR TECH
	LF156AH-MLS		MP156	MICRO POWER
	LF156AH-MLS		OPA156	BURR-BROWN
	LF156AH-MLS		OPA156A	BURR-BROWN

	LF156AH-MLS		PM156	ADI
	LF156AH-MLS		PM156	ANALOG DEVICES
	LF156AH/883		LF156	LINEAR TECH
	LF156AH/883		LT1056	LINEAR TECH
	LF156AH/883		MP156	MICRO POWER
	LF156AH/883		OPA156	BURR-BROWN
	LF156AH/883		OPA156A	BURR-BROWN
	LF156AH/883		PM156	ADI
	LF156AH/883		PM156	ANALOG DEVICES

<b>TABLE II: MIL/AERO DIVISION DIE SALES</b>	
<b>DIE IDENTIFICATION</b>	<b>SUGGESTED ALTERNATE</b>
DM74LS163A MWC	NONE
DM74LS32 MWC	NONE



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99012**

**Issued: 06/07/99**

<b>GIDEP Nr:</b> AH6-I-99-01	<b>GIDEP Category:</b> PIN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

All products previously supplied by National's Military Aerospace Division.

**Proposed Date of Change:**

June 1, 1999

**Description of Change:**

National's Military Aerospace Division will change its name to Enhanced Solutions. This new name for our division better describes our future direction and the value we bring to our customers. We are committed to servicing our hi-rel / military customers, which include Defense, Government and Commercial customers, with products and services that meet their changing needs.

**Effect of Change:**

This division name change does not affect the form, fit or function of products delivered by National. Nor will the quality, reliability, and electrical performance of these products be adversely affected.

However the Heading on the C of C will change

from: "Military Aerospace Division Certificate of Conformance"

to: "Enhanced Solutions Certificate of Conformance"

Please visit our updated website at <http://enhancedsolutions.national.com>

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com



<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Paul Wakefield Director of Marketing, Enhanced Solutions 408-721-7200 email: paul.wakefield@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99013**

**Issued: 06/10/99**

GIDEP Nr: AH6-C-99-09	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

1) Quad 2 Input NOR Gate	JM38510/05202BCA	JM4001ABCA
2) Dual D Flip-Flop	JM38510/05101BCA	JM4013ABCA
	JM38510/05151BCA	JM4013BBCA
	JM38510/05151BDA	JM4013BBDA

**Proposed Date of Change:**

June 8, 1999

**Description of Change:**

The current die NSC uses to build JM4001ABCA product has nearly been exhausted from our die bank. However, a suitable alternate die has been qualified to continue the manufacture of JM4001ABCA. The current die was manufactured in our old Danbury, CT. facility and has a die size of 32x50 mils and a physical die identification of A01, revision E. The recently qualified alternate die was also manufactured in our old Danbury, CT. facility and has a die size of 49x37 mils and a physical die identification of 46B01, revision C.

The current die NSC uses to build JM4013ABCA/JM4013BBCA/JM4013BBDA product has nearly been exhausted from our die bank. However, a suitable alternate die has been qualified to continue the manufacture of JM4013ABCA/JM4013BBCA/JM4013BBDA. The current die used to build all three of the above products was manufactured in our old Danbury, CT. facility and has a die size of 50x59 mils and a physical die identification of 4613, revision D. The recently qualified alternate die for the above three device types was manufactured in our Greenock, Scotland facility and has the same die size of 50x59 mils and the same physical die identification of 4613, revision D.

The currently qualified die for all four above products will continue to ship until the die is exhausted. However, the alternate qualified die for all four above products can also ship. From the above date forward, customers may receive product with either the current die or the new alternate die.

**Effect of Change:**

JM4001ABCA/JM4013ABCA/JM4013BBCA/JM4013BBDA product built with the alternate qualified die meets or exceeds all electrical and reliability standards as imposed by JM38510/05202, JM38510/05101 and JM38510/05151 respectively. The FAB baselines between Danbury and Greenock, Scotland for these die are very close, with no differences in both passivation and metallization compositions or thicknesses. This die change will have no adverse affects upon customers and will be virtually transparent.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Don Miller, Logic Product Engineer (207) 541-8492 email: don.miller@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99014**

**Issued: 07/12/99**

<b>GIDEP Nr:</b> AH6-P-99-01	<b>GIDEP Category:</b> Problem Advisory	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

12-Bit + Sign Data Acquisition System with Self-Calibration

**Standard Military  
Part Number**

5962-9319502MXC  
5962-9319502MYA  
5962-9319502QZA

**National  
Part Number**

LM12H458MEL/883  
LM12H458MW/883  
LM12H458MWG/883

**Proposed Date of Change:**

July 06, 1999

**Description of Change:**

National Semiconductor has discovered that the SMD for LM12H458MEL/883, LM12H458MW/883 and LM12H458MWG/883 devices contains an error where the DNL test was incorrectly specified as  $\pm 1/2$  LSB at 125C. The correct specification is DNL =  $\pm 3/4$  LSB at 125C.

This error was introduced, within National Semiconductor, prior to transmittal of the SMD data to DSCC (Defense Supply Center, Columbus).

**DNL (Differential Non-Linearity)** is, and has been, tested with

- VA+ = VD+ = 5V
- Vref+ = 5V
- Vref- = 0Vs = 25 Ohms
- 12-bit + sign conversion mode
- fCLK = 8.0Mhz
- source impedance for Vref+ and Vref-  $\leq 25$  Ohms
- fully-differential input with fixed 2.5V common-mode voltage
- minimum acquisition time with a limit of  $\pm 3/4$  LSB at 125C

The SMD limit of  $\pm 1/2$  LSB is being changed by DSCC to  $\pm 3/4$  LSB at 125C only. All other DC, AC and input timing tests are unchanged.

The error is not believed to jeopardize customer applications.

**Effect of Change:**

Impact to customers is negligible. A review of our records has shown that no customer has either questioned performance or returned devices for problems with DNL.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Larry McGee, Analog Eng. Mgr. (408) 721-7231 email: larry.mcgee@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**





**ENHANCED SOLUTIONS**  
**DESIGN/PROCESS CHANGE NOTIFICATION**

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99015**

**Issued: 08/03/99**

GIDEP Nr: AH6-C-99-10	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

LVDS (Low Voltage Differential Signaling) Quad Differential Line Receiver.

DS90C032W-QML (5962-9583401QFA)

DS90C032E-QML (5962-9583401Q2A)

**Proposed Date of Change:**

Datecode 9916

**Description of Change:**

Die Revision from "B" to "C".

National Semiconductor has approved a redesigned die for use in our QML Product.

The redesign consisted of the following changes:

- 1) Modifications/improvements to the Receiver Input Failsafe Circuitry.
- 2) Changed ESD structures. The DS90C032 now provides power-off high impedance LVDS inputs. This assures minimal loading effect on the LVDS bus lines when VCC is not present. The ESD classification remains CLASS 2, however the ESD rating (HBM, 1.5K ohm, 100pF) has changed from >3500V to >2000V.

Effective as of July 1999, customers may receive either "B" or "C" step material. The "B" step material will continue to be shipped until die inventories are depleted.

**Effect of Change:**

Other than the differences in the die layout, and mask step identifiers, the change will be transparent to the customer. The electrical parameters specified for this device remain unchanged from the previous die step.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402

<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Enhanced Solutions Product Line Michael Fitzgerald Tel: (207) 541-8278 email: michael.fitzgerald@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



**ENHANCED SOLUTIONS**  
**DESIGN/PROCESS CHANGE NOTIFICATION**

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99016**

**Issued: 08/04/99**

GIDEP Nr: AH6-C-99-11	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Reference TABLE I

**Proposed Date of Change:**

DATECODE 9916

**Description of Change:**

Wafer fabrication process transfer from UK fab2 (4 inch) to UK fab3 (6 inch).

Major process differences caused by this transfer are as follows:

**4" Process Step**

4" Silicon substrate.  
Plasma Nitride: Single freq. PECVD

**6" Process Step**

6" Silicon substrate.  
Plasma Nitride: Novellus

The wafer fab lot# prefix is listed below as an aid for our die sales customers for ease of site location identification.

4" wafer fab lot# prefix was **K** ; 6" wafer fab lot# prefix is **J**

**Effect of Change:**

This wafer fab transfer and process modification was fully qualified by Enhanced Solutions formerly the Military & Aerospace Division.

The Defense Logistics Agency concurred with National's Technical Review Board via letter DSCC-VQC 99-008 regarding the certification of Class V for the Greenock, Scotland 6" wafer fabrication line.

These changes will not adversely affect the device performance, quality or reliability.

**Note:**

The LFAST transfer of Level Q to the 6" wafer fabrication line was approved with datecode 9818.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Michael Fitzgerald Enhanced Solutions Engineering (207) 541-8278 email: michael.fitzgerald@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I:**

<b><u>NATIONAL PART NUMBER</u></b>	<b><u>SMD DEVICE NUMBER</u></b>
DS16F95J-QMLV	5962-8961501VPA
DS16F95JFQMLV	5962F8961501VPA
DS16F95WFQMLV	5962F8961501VHA
DS16F95WGFQMLV	5962F8961501VXA
DS96F172MJ-QMLV	5962-9076501VEA
DS96F173MJ-QMLV	5962-9076602VEA
DS96F174MJ-QMLV	5962-9076502VEA
DS96F175MJ-QMLV	5962-9076601VEA
DS26F31MJ-QMLV	5962-7802302VEA
DS26F32MJ-QMLV	5962-7802005VEA



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99017**

**Issued: 08/09/99**

GIDEP Nr: AH6-C-99-12	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

TO46 Metal Cans (2, 3 and 4 leads)

All military product assurance levels (JAN, SMD, -QML, -QMLV, /883, QB, -MIL, -MLS) marked in National Semiconductor's Singapore facility.

**Note:**

Customer Source Controlled Drawing processed devices are will NOT be affected by this change until approved by the customer.

**Proposed Date of Change:**

Conversion begins September 1999

**Description of Change:**

TO46 SIDE MARKING

The current Singapore marking of TO46 metal cans may use both the top and/or the side of the package. This PCN announces the removal of any marking on the top of the TO46 metal can. All TO46 marking will now be side marking only.

In order to have side marking only, some devices will have a modified marking due to spacing constrains. Refer to Table I for the comparison of the old and new markings.

Note: The capability of doing top mark has been retained in case there are future new products or devices whose marking can not be accommodated on the side only.

**Effect of Change:**

There is no effect on the quality or reliability of the devices.

This change will reduce rework in the marking process due to scratched mark on the top mark during side marking and testing.

Devices with top and side mark will not be mixed with the devices with side mark only at the immediate box level. Shipping cartons may contain both.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Sally Morrison, Spec Control Tel: (408) 721-6829 email: sally.morrison@nsc.com	



**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I**

<b>NSID</b>	<b>OLD TOP/SIDE MARK</b>	<b>NEW SIDE MARK</b>
LM103H-3.0-SMD	NZSSXXYYA*QME*27014 7702806XA	NZSSXXYYA 7702806XA Q
LM103H-3.0/883	NZSSXXYYA*E*LM103H-3.0/883QM	NZSSXXYYA LM103H-3.0/QE
LM103H-3.3/883	NZSSXXYYA*E*LM103H-3.3/883QM	NZSSXXYYA LM103H-3.3/QE
LM103H-3.3-SMD	NZSSXXYYA*QME*27014 7702807XA	NZSSXXYYA 7702807XA Q
LM103H-3.6/883	NZSSXXYYA*E*LM103H-3.6/883QM	NZSSXXYYA LM103H-3.6/QE
LM103H-3.9/883	NZSSXXYYA*E*LM103H-3.9/883QM	NZSSXXYYA LM103H-3.9/QE
LM103H-3.9-SMD	NZSSXXYYA*QME*27014 7702809XA	NZSSXXYYA 7702809XA Q
LM113-1H/883	NZSSXXYYA*E*LM113-1H/883QM	NZSSXXYYA LM113-1H/QE
LM113-1H-MLS	NZSSXXYYA*E*LM113-1H-MLS	NZSSXXYYA LM113-1H-MLSE
LM113-1H-QMLV	NZSSXXYYA*E*5962-9684302VXA	NZSSXXYYA 9684302VXA
LM113-1H-SMD	NZSSXXYY*AE*5962-8671102XA QM	NZSSXXYYA 8671102XA Q
LM113-2H/883	NZSSXXYYA*E*LM113-2H/883QM	NZSSXXYYA LM113-2H/QE
LM113-2H-QMLV	NZSSXXYYA*E*5962-9684303VXA	NZSSXXYYA 9684303VXA
LM113-2H-SMD	NZSSXXYYA*QME*5962-8671103XA	NZSSXXYYA 8671103XA Q
LM113H/883	NSZ*SSXXYY*AE*LM113H/883QM	NZSSXXYYALM113H/QE
LM113H-MLS	NZSSXXYYA*E*LM113H-MLS	NZSSXXYYALM113H-MLSE
LM113H-QMLV	NZSSXXYYA*E*5962-9684301VXA	NZSSXXYYA 9684301VXA
LM113H-SMD	NZSSXXYYA*QME*5962-8671101XA	NZSSXXYYA 8671101XA Q
LM129AH/883	NZSSXXYYA*E*LM129AH/883QM	NZSSXXYYALM129AH/QE
LM129AH-SMD	NZSSXXYYA*QME*5962-8992101XA	NZSSXXYYA 8992101XA Q
LM129BH/883	NZSSXXYYA*E*LM129BH/883QM	NZSSXXYYA LM129BH/QE
LM129BH-SMD	NZSSXXYYA*QME*5962-8992102XA	NZSSXXYYA 8992102XA Q
LM135H-MIL	NZSSXXYYA*E*LM135H-MIL	NZSSXXYYALM135H-MILE
LM135H-MLS	NZSSXXYYA*E*LM135H-MLS	NZSSXXYYALM135H-MLSE

LM136AH-2.5	NSXYTT*LM136AH-2.5	NSXYTTLM136AH-2.5
LM136AH-2.5/883	NZSSXXYYA*E*LM136AH-2.5/883QM	NZSSXXYYALM136AH-2.5/QE
LM136AH-2.5-MLS	NZSSXXYYA*E*LM136AH-2.5-MLS	NZSSXXYYALM136AH-2.5-MLSE
LM136AH-5.0	NSXYTT*LM136AH-5.0	NSXYTTLM136AH-5.0
LM136AH-5.0/883	NZSSXXYYA*E*LM136AH-5.0/883QM	NZSSXXYYALM136AH-5.0/QE
LM136AH-5.0-SMD	NZSSXXYYA*E*8418002XA27014QM	NZSSXXYYA 8418002XA Q
LM136H-2.5	NSXYTT LM136H-2.5	NSXYTTLM136H-2.5
LM136H-2.5/883	NZSSXXYYA*E*LM136H-2.5/883QM	NZSSXXYYALM136H-2.5/QE
LM136H-5.0	NSXYTT*LM136H-5.0	NSXYTTLM136H-5.0
LM136H-5.0/883	NZSSXXYYA*E*LM136H-5.0/883QM	NZSSXXYYALM136H-5.0/QE
LM185BH/883	NZSSXXYYA*E*LM185BH/883QM	NZSSXXYYALM185BH/QE
LM185BXH-1.2	NSXYTT*LM185BXH-1.2	NSXYTT*LM185BXH-1.2
LM185BXH-2.5	NSXYTT*LM185BXH-2.5	NSXYTT*LM185BXH-2.5
LM185BYH/883	NZSSXXYYA*E*LM185BYH/883QM	NZSSXXYYALM185BYH/QE
LM185BYH-1.2	NSXYTT*LM185BYH-1.2	NSXYTT*LM185BYH-1.2
LM185BYH1.2/883	NZSSXXYYA*E*LM185BYH1.2/883QM	NZSSXXYYALM185BYH1.2/QE
LM185BYH1.2-SMD	NZSSXXYYA*QME*5962-8759405XA	NZSSXXYYA 8759405XA Q
LM185BYH-2.5	NSXYTT*LM185BYH-2.5	NSXYTT*LM185BYH-2.5
LM185BYH2.5/883	NZSSXXYYA*E*LM185BYH2.5/883QM	NZSSXXYYALM185BYH2.5/QE
LM185BYH2.5-MLS	NZSSXXYYA*E*LM185BYH2.5-MLS	NZSSXXYYALM185BYH2.5-MLSE
LM185BYH2.5-SMD	NZSSXXYYA*QME*5962-8759406XA	NZSSXXYYA 8759406XA Q
LM185BYH-SMD	ZSS*XXYYA*NSQS*5962-9091401MXAE	NZSSXXYYA 9091401MXA Q
LM185H-1.2	NSXYTT*LM185H-1.2	NSXYTT*LM185H-1.2
LM185H-1.2/883	NZSSXXYYA*E*LM185H-1.2/883QM	NZSSXXYYALM185H-1.2/QE
LM185H-1.2-MLS	NZSSXXYYA*E*LM185H-1.2-MLS	NZSSXXYYALM185H-1.2-MLSE
LM185H-1.2-SMD	NZSSXXYYA*QME*5962-8759401XA	NZSSXXYYA 8759401XA Q
LM185H-2.5	NSXYTT*LM185H-2.5	NSXYTTLM185H-2.5
LM185H-2.5/883	NZSSXXYYA*E*LM185H-2.5/883QM	NZSSXXYYALM185H-2.5/QE

LM185H-2.5-MLS	NZSSXXYYA*E*LM185H-2.5-MLS	NZSSXXYYALM185H-2.5-MLSE
LM185H-2.5-SMD	NZSSXXYYA*QME*5962-8759402XA	NZSSXXYYA 8759402XA Q
LM199AH/883	NZSSXXYYA*E*LM199AH/883QM	NZSSXXYYA LM199AH/QE
LM199AH-SMD	NZSSXXYYAQME*5962-8856101XA	NZSSXXYYA 8856101XA Q
LM199H/883	NZSSXXYYA*E*LM199H/883QM	NZSSXXYYA LM199H/QE
LM199H-SMD	NZSSXXYYAQE*5962-8856102XA	NZSSXXYYA 8856102XA Q
LM236AH-2.5	NSXYTT*LM236AH-2.5	NSXYTTLM236AH-2.5
LM236AH-5.0	NSXYTT*LM236AH-5.0	NSXYTTLM236AH-2.5
LM236AH-5.0	NSXYTT*LM236AH-5.0	NSXYTTLM236AH-5.0
LM236AH-5.0	NSXYTT*LM236AH-5.0	NSXYTTLM236AH-5.0
LM236AH-5.0	NSXYTT*LM236AH-5.0	NSXYTTLM236AH-5.0
LM236AH-5.0	NSXYTT*LM236AH-5.0	NSXYTTLM236AH-5.0
LM236H-2.5	NSXYTT LM236H2.5	NSXYTTLM236H2.5
LM236H-5.0	NSXYTT LM236H-5.0	NSXYTTLM236H2.5
LM285BXH-1.2	NSXYTT*LM285BXH-1.2	NSXYTTLM285BXH-1.2
LM285BXH-2.5	NSXYTT*LM285BXH-2.5	NSXYTTLM285BXH-2.5
LM285BYH-1.2	NSXYTT*LM285BYH-1.2	NSXYTTLM285BYH-1.2
LM285BYH-2.5	NSXYTT*LM285BYH-2.5	NSXYTTLM285BYH-2.5
LM285H-1.2	NSXYTT*LM285H-1.2	NSXYTTLM285H-1.2
LM285H-2.5	NSXYTT*LM285H-2.5	NSXYTTLM285H-2.5
NS = NATIONAL LOGO		
Z = ASSEMBLY PLANT CODE		
SS = 2 DIGIT WAFER SORT CODE		
XXYY = 4 DIGIT DATE CODE		

A = INSPECTION SUBLOT LETTER		
E = ESD SYMBOL		
QM = QML CERTIFICATION LETTER AND TEST LOCATION INDICATOR		
XY = 2 DIGIT DATE CODE		
TT = DIERUN TRACEABILITY CODE		
* = LINE CHANGE		



***ENHANCED SOLUTIONS***  
***DESIGN/PROCESS CHANGE NOTIFICATION***  
*(formerly Military & Aerospace Division)*

**PCN Nr: MA99018**

**Issued: 08/18/99**

GIDEP Nr: AH6-C-99-13	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

FACT 100 krad(Si) RHA Qualified and Non-RHA Level S Devices  
 Reference Table I

**Proposed Date of Change:**

August 1, 1999

**Description of Change:**

Consolidation of FACT 100 krad(Si) RHA qualified and Non-RHA Level S devices.

National has in the past offered a Rad and a Non-Rad version of our Space qualified FACT devices. Effective immediately we will be offering only the 100K Rad version at no increase in price.

This consolidation will simplify the vendor stocking program, reduce inventory and logistics, reduce leadtimes with no change in electrical performance of the product.

**Effect of Change:**

Non-Rad Level S devices will no longer be orderable. The 100 krad(Si)RHA qualified Level S devices will be interchangeable in application for the Non-RHA version.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

<b>Other contacts</b>	Susan Davis Tel: (408) 721-3161 email: susan.davis@nsc.com	
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Other Ref:

Associated Notes / Table(s):

TABLE I

OBSOLETE PART NUMBER	OBSOLETE S/S or SMD#	REPLACEMENT PART NUMBER	REPLACEMENT S/S or SMD#
54AC169W-QMLV	5962-9160301VFA	54AC169WRQMLV	5962R9160301VFA
54ACT109J-QMLV	5962-8853401VEA	54ACT109JRQMLV	5962R8853401VEA
54ACT109W-QMLV	5962-8853401VFA	54ACT109WRQMLV	5962R8853401VFA
54ACTQ32E-QMLV	5962-8973601V2A	54ACTQ32ERQMLV	5962R8973601V2A
54ACTQ32J-QMLV	5962-8973601VCA	54ACTQ32JRQMLV	5962R8973601VCA
54ACTQ32W-QMLV	5962-8973601VDA	54ACTQ32WRQMLV	5962R8973601VDA
JM54AC00S2A	JM38510/75001S2A	JM54AC00S2A-RH	JM38510R75001S2A
JM54AC00SCA	JM38510/75001SCA	JM54AC00SCA-RH	JM38510R75001SCA
JM54AC00SDA	JM38510/75001SDA	JM54AC00SDA-RH	JM38510R75001SDA
JM54AC02SDA	JM38510/75101SDA	JM54AC02SDA-RH	JM38510R75101SDA
JM54AC04SCA	JM38510/75701SCA	JM54AC04SCA-RH	JM38510R75701SCA
JM54AC04SDA	JM38510/75701SDA	JM54AC04SDA-RH	JM38510R75701SDA
JM54AC05S2A	5962-9059001S2A	JM54AC05S2A-RH	5962R9059001S2A
JM54AC05SCA	5962-9059001SCA	JM54AC05SCA-RH	5962R9059001SCA
JM54AC05SDA	5962-9059001SDA	JM54AC05SDA-RH	5962R9059001SDA
JM54AC08S2A	JM38510/75203S2A	JM54AC08S2A-RH	JM38510R75203S2A
JM54AC08SCA	JM38510/75203SCA	JM54AC08SCA-RH	JM38510R75203SCA
JM54AC08SDA	JM38510/75203SDA	JM54AC08SDA-RH	JM38510R75203SDA
JM54AC109S2A	JM38510/75304S2A	JM54AC109S2A-RH	JM38510R75304S2A
JM54AC109SEA	JM38510/75304SEA	JM54AC109SEA-RH	JM38510R75304SEA
JM54AC109SFA	JM38510/75304SFA	JM54AC109SFA-RH	JM38510R75304SFA
JM54AC10S2A	JM38510/75002S2A	JM54AC10S2A-RH	JM38510R75002S2A
JM54AC10SCA	JM38510/75002SCA	JM54AC10SCA-RH	JM38510R75002SCA
JM54AC10SDA	JM38510/75002SDA	JM54AC10SDA-RH	JM38510R75002SDA

JM54AC11S2A	JM38510/75204S2A	JM54AC11S2A-RH	JM38510R75204S2A
JM54AC11SCA	JM38510/75204SCA	JM54AC11SCA-RH	JM38510R75204SCA
JM54AC11SDA	JM38510/75204SDA	JM54AC11SDA-RH	JM38510R75204SDA
JM54AC125S2A	5962-9325301S2A	JM54AC125S2A-RH	5962R9325301S2A
JM54AC125SCA	5962-9325301SCA	JM54AC125SCA-RH	5962R9325301SCA
JM54AC138S2A	JM38510/75802S2A	JM54AC138S2A-RH	JM38510R75802S2A
JM54AC138SEA	JM38510/75802SEA	JM54AC138SEA-RH	JM38510R75802SEA
JM54AC138SFA	JM38510/75802SFA	JM54AC138SFA-RH	JM38510R75802SFA
JM54AC139S2A	JM38510/75803S2A	JM54AC139S2A-RH	JM38510R75803S2A
JM54AC139SFA	JM38510/75803SFA	JM54AC139SFA-RH	JM38510R75803SFA
JM54AC14SDA	JM38510/75702SDA	JM54AC14SDA-RH	JM38510R75702SDA
JM54AC153S2A	JM38510/70202S2A	JM54AC153S2A-RH	JM38510R70202S2A
JM54AC153SEA	JM38510/70202SEA	JM54AC153SEA-RH	JM38510R70202SEA
JM54AC157S2A	JM38510/76203S2A	JM54AC157S2A-RH	JM38510R76203S2A
JM54AC157SEA	JM38510/76203SEA	JM54AC157SEA-RH	JM38510R76203SEA
JM54AC161S2A	JM38510/76302S2A	JM54AC161S2A-RH	JM38510R76302S2A
JM54AC161SFA	JM38510/76302SFA	JM54AC161SFA-RH	JM38510R76302SFA
JM54AC174S2A	JM38510/75307S2A	JM54AC174S2A-RH	JM38510R75307S2A
JM54AC174SEA	JM38510/75307SEA	JM54AC174SEA-RH	JM38510R75307SEA
JM54AC174SFA	JM38510/75307SFA	JM54AC174SFA-RH	JM38510R75307SFA
JM54AC191S2A	JM38510/76305S2A	JM54AC191S2A-RH	JM38510R76305S2A
JM54AC191SEA	JM38510/76305SEA	JM54AC191SEA-RH	JM38510R76305SEA
JM54AC191SFA	JM38510/76305SFA	JM54AC191SFA-RH	JM38510R76305SFA
JM54AC20S2A	JM38510/75003S2A	JM54AC20S2A-RH	JM38510R75003S2A
JM54AC20SCA	JM38510/75003SCA	JM54AC20SCA-RH	JM38510R75003SCA
JM54AC20SDA	JM38510/75003SDA	JM54AC20SDA-RH	JM38510R75003SDA
JM54AC240S2A	JM38510/75703S2A	JM54AC240S2A-RH	JM38510R75703S2A
JM54AC240SRA	JM38510/75703SRA	JM54AC240SRA-RH	JM38510R75703SRA
JM54AC240SSA	JM38510/75703SSA	JM54AC240SSA-RH	JM38510R75703SSA



JM54AC241S2A	JM38510/75704S2A	JM54AC241S2A-RH	JM38510R75704S2A
JM54AC241SRA	JM38510/75704SRA	JM54AC241SRA-RH	JM38510R75704SRA
JM54AC241SSA	JM38510/75704SSA	JM54AC241SSA-RH	JM38510R75704SSA
JM54AC244SRA	JM38510/75705SRA	JM54AC244SRA-RH	JM38510R75705SRA
JM54AC244SSA	JM38510/75705SSA	JM54AC244SSA-RH	JM38510R75705SSA
JM54AC257S2A	JM38510/76201S2A	JM54AC257S2A-RH	JM38510R76201S2A
JM54AC257SEA	JM38510/76201SEA	JM54AC257SEA-RH	JM38510R76201SEA
JM54AC273S2A	JM38510/75601S2A	JM54AC273S2A-RH	JM38510R75601S2A
JM54AC273SSA	JM38510/75601SSA	JM54AC273SSA-RH	JM38510R75601SSA
JM54AC32S2A	JM38510/75201S2A	JM54AC32S2A-RH	JM38510R75201S2A
JM54AC32SCA	JM38510/75201SCA	JM54AC32SCA-RH	JM38510R75201SCA
JM54AC32SDA	JM38510/75201SDA	JM54AC32SDA-RH	JM38510R75201SDA
JM54AC373S2A	JM38510/75403S2A	JM54AC373S2A-RH	JM38510R75403S2A
JM54AC373SRA	JM38510/75403SRA	JM54AC373SRA-RH	JM38510R75403SRA
JM54AC373SSA	JM38510/75403SSA	JM54AC373SSA-RH	JM38510R75403SSA
JM54AC374S2A	JM38510/75602S2A	JM54AC374S2A-RH	JM38510R75602S2A
JM54AC374SRA	JM38510/75602SRA	JM54AC374SRA-RH	JM38510R75602SRA
JM54AC521S2A	5962-9098501S2A	JM54AC521S2A-RH	5962R9098501S2A
JM54AC521SRA	5962-9098501SRA	JM54AC521SRA-RH	5962R9098501SRA
JM54AC521SSA	5962-9098501SSA	JM54AC521SSA-RH	5962R9098501SSA
JM54AC541S2A	JM38510/75711S2A	JM54AC541S2A-RH	JM38510R75711S2A
JM54AC541SRA	JM38510/75711SRA	JM54AC541SRA-RH	JM38510R75711SRA
JM54AC574S2A	JM38510/75604S2A	JM54AC574S2A-RH	JM38510R75604S2A
JM54AC574SRA	JM38510/75604SRA	JM54AC574SRA-RH	JM38510R75604SRA
JM54AC74SCA	JM38510/75302SCA	JM54AC74SCA-RH	JM38510R75302SCA
JM54AC86SCA	JM38510/75202SCA	JM54AC86SCA-RH	JM38510R75202SCA
JM54ACT00S2A	5962-8769901S2A	JM54ACT00S2A-RH	5962R8769901S2A
JM54ACT00SCA	5962-8769901SCA	JM54ACT00SCA-RH	5962R8769901SCA
JM54ACT00SDA	5962-8769901SDA	JM54ACT00SDA-RH	5962R8769901SDA

JM54ACT138SEA	5962-8755401SEA	JM54ACT138SEA-R	5962R8755401SEA
JM54ACT240S2A	5962-8775901S2A	JM54ACT240S2A-R	5962R8775901S2A
JM54ACT240SRA	5962-8775901SRA	JM54ACT240SRA-R	5962R8775901SRA
JM54ACT240SSA	5962-8775901SSA	JM54ACT240SSA-R	5962R8775901SSA
JM54ACT244SRA	5962-8776001SRA	JM54ACT244SRA-R	5962R8776001SRA
JM54ACT244SSA	5962-8776001SSA	JM54ACT244SSA-R	5962R8776001SSA
JM54ACT245SRA	5962-8766301SRA	JM54ACT245SRA-R	5962R8766301SRA
JM54ACT574S2A	5962-8960101S2A	JM54ACT574S2A-R	5962R8960101S2A
JM54ACT574SRA	5962-8960101SRA	JM54ACT574SRA-R	5962R8960101SRA
JM54ACT74S2A	5962-8752501S2A	JM54ACT74S2A-RH	5962R8752501S2A



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99019**

**Issued: 08/31/99**

<b>GIDEP Nr:</b> AH6-D-99-08	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Reference TABLE I - Packaged Product  
 TABLE II - Commercial Die sales Managed by Enhanced Solutions

**Proposed Date of Change:**

Lifetime buy purchase orders will be accepted until **9 Sept 2000.**

**Description of Change:**

**PRODUCT OBSOLESCENCE**

National Semiconductor wishes to inform you that the devices listed in Tables I & II are being discontinued. The decision to obsolete these products was primarily due to low volume or minimal demand from our customer base.

**Effect of Change:**

While all best efforts will be made to ensure that product can be supplied for any order received during the Life Time Buy period, this cannot be guaranteed.

We would therefore advise that you do not wait until the last moment before placing your final orders.

Suggested alternate devices and manufacturers are viable at the time of publication of this document.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

<b>Other contacts</b>	<p>Kirk Lemon Enhanced Solutions Analog Marketing (408) 721-4172 email: kirk.lemon@nsc.com</p> <p>Joe Steele Enhanced Solutions Sr. Eng. Manager (408) 721-3819 email: joe.steele@nsc.com</p> <p>Jacqueline Collard Die products Business Unit Marketing (207)541-8760 email: jacqueline.l.collard@nsc.com</p>	
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**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I**

<b>Obsoleted National Part Number</b>	<b>Obsoleted SMD#</b>	<b>Suggested Alternate Part Number</b>	<b>Suggested SMD#</b>	<b>Suggested Alternate Source</b>
LF412MJ-SMD	5962-9676001QPA	LF442MH/883		NATIONAL
LMC660AMJ/883	5962-9209301MCA	LMC6484AMJ/883	5962-9453402MCA	NATIONAL
LM103H-3.9-SMD	7702809XA			NONE
LM103H-3.9/883				NONE
LM723H-MLS		LM723H/883		NATIONAL
MCM101C0ACH-MMQ				NONE
MM9719-NU20-MRR				NONE
MM9720-NU20-MRR				NONE
MM9721-NU20-MRR				NONE
SCL1174-E21-MSP				NONE
XDD2D5AEU/-MSP				NONE
XDD4U0AIF/-MSP				NONE
XD61E9MII/-MSP				NONE
XD61E9MIP/-MSP				NONE
X2C0U6AHH/-MSP				NONE
X2C2D5PLY/-MSP				NONE
X2C5SUU-U2-MSP				NONE

**TABLE II**

<b>Die Sales Obsoleted by National Semiconductor</b>	<b>Suggested Alternatives</b>	<b>Suggested Source</b>
DP8390 MWC	DP8390AV	NATIONAL
DP8391A MWC		NONE
DP83916 MDC	DP83916VF	NATIONAL
NS32202 MDC		NONE
SCL4412 MDC	SCL4412-XD	NATIONAL



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99020**

**Issued: 09/01/99**

GIDEP Nr: AH6-C-99-14	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

All B Level FAST products - /883, SMD and JAN B (reference Tables I & II) that are manufactured and sold in the ceramic dual-in-line (CDIP) package only.

**Proposed Date of Change:**

**August 30, 1999**

**Description of Change:**

National's current lead finish on the above mentioned devices is hot solder dip. The lead finish operation is currently performed in National's Singapore facility, but is being transferred to a subcontractor (AMKOR/ANAM) located in Manilla (Phillipines).

**Effect of Change:**

This process transfer has been fully qualified by National and has no impact on the quality or reliability or performance of the product.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Don Miller, Logic Product Engineering (207) 541-8492 email: don.miller@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I:**

**JAN B FAST devices:**

<b><u>JAN PART NUMBER</u></b>	<b><u>SLASHSHEET PART NUMBER</u></b>
JD54F00BCA	JM38510/33001BCA
JD54F02BCA	JM38510/33301BCA
JD54F04BCA	JM38510/33002BCA
JD54F08BCA	JM38510/34001BCA
JD54F10BCA	JM38510/33003BCA
JD54F109BEA	JM38510/34102BEA
JD54F11BCA	JM38510/34002BCA
JD54F138BEA	JM38510/33701BEA
JD54F139BEA	JM38510/33702BEA
JD54F151BEA	JM38510/33901BEA
JD54F153BEA	JM38510/33902BEA
JD54F157BEA	JM38510/33903BEA
JD54F161BEA	JM38510/34301BEA
JD54F163BEA	JM38510/34302BEA
JD54F174BEA	JM38510/34107BEA
JD54F181BLA	JM38510/33801BLA
JD54F175BEA	JM38510/34104BEA
JD54F182BEA	JM38510/33802BEA
JD54F193BEA	JM38510/34304BEA
JD54F194BEA	JM38510/33601BEA
JD54F20BCA	JM38510/33004BCA
JD54F241BRA	JM38510/33202BRA
JD54F244BRA	JM38510/33203BRA
JD54F245BRA	JM38510/34803BRA
JD54F251BEA	JM38510/33905BEA
JD54F253BEA	JM38510/33908BEA
JD54F257BEA	JM38510/33906BEA
JD54F258BEA	JM38510/33907BEA
JD54F280BCA	JM38510/34901BCA
JD54F283BEA	JM38510/34201BEA
JD54F32BCA	JM38510/33501BCA
JD54F365BEA	JM38510/35101BEA
JD54F373BRA	JM38510/34601BRA
JD54F374BRA	JM38510/34105BRA
JD54F38BCA	JM38510/35202BCA
JD54F398BRA	JM38510/35001BRA
JD54F399BEA	JM38510/35002BEA
JD54F521BRA	JM38510/34701BRA
JD54F534BRA	JM38510/34106BRA
JD54F540BRA	JM38510/33204BRA
JD54F573BRA	JM38510/34604BRA
JD54F64BCA	JM38510/33401BCA
JD54F74BCA	JM38510/34101BCA
JD54F86BCA	JM38510/34501BCA



**TABLE II:**

**/883 & SMD FAST devices**

**/883 ORDERING CODE**

**SMD ORDERING CODE**  
**(if available)**

54F00DMQB	
54F02DMQB	
54F04DMQB	5962-9759301QCA
54F08DMQB	
54F10DMQB	
54F109DMQB	
54F11DMQB	
54F132DMQB	5962-8948701CA
54F138DMQB	5962-9758201QEA
54F139DMQB	
54F14DMQB	5962-8875201CA
54F151ADMQB	
54F153DMQB	5962-9758301QEA
54F157ADMQB	
54F158ADMQB	
54F160ADMQB	
54F161ADMQB	
54F163ADMQB	
54F164ADMQB	5962-8607101CA
54F169DMQB	5962-8607201EA
54F174DMQB	
54F175DMQB	
54F181SDMQB	
54F181DMQB	5962-8671002JA
54F182DMQB	
54F189DLQB	
54F190DMQB	
54F191DMQB	5962-9058201EA
54F192DMQB	
54F193DMQB	
54F194DMQB	
54F20DMQB	5962-9758401QCA
54F219DLQB	
54F2244DMQB	5962-9325001MRA
54F244DMQB	
54F245DMQB	
54F251ADMQB	
54F253DMQB	
54F257ADMQB	
54F258ADMQB	
54F273DMQB	5962-8855001RA
54F280DMQB	
54F283DMQB	
54F299DMQB	
54F32DMQB	
54F322DMQB	5962-8607401RA
54F365DMQB	
54F373DMQB	
54F374DMQB	
54F377DMQB	5962-9091001MRA
54F378DMQB	5962-8855501EA
54F379DMQB	

54F38DMQB	
54F398DMQB	
54F399DMQB	
54F402DMQB	5962-9059301MEA
54F407DMQB	
54F410DMQB	
54F413DMQB	
54F521DMQB	
54F533DMQB	
54F534DMQB	
54F544SDMQB	
54F545DMQB	
54F573DMQB	5962-9173801MRA
54F574DMQB	
54F64DMQB	
54F646SDMQB	5962-8975401LA
54F648SDMQB	5962-8975402LA
54F651DMQB	
54F652SDMQB	5962-8955801LA
54F676DMQB	
54F676SDMQB	
54F74DMQB	
54F821SDMQB	5962-8943801LA
54F823SDMQB	
54F825SDMQB	
54F827SDMQB	5962-9209001MLA
54F86DMQB	



**ENHANCED SOLUTIONS**  
**DESIGN/PROCESS CHANGE NOTIFICATION**

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99021**

**Issued: 09/13/99**

GIDEP Nr: AH6-C-99-15	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

LM611AMJ/883	Operational Amplifier and Adjustable Reference
LM613AMJ/883	5962-9300301MEA Quad Operational Amplifiers and Adjustable Reference

**Proposed Date of Change:**

August 1999

**Description of Change:**

**Test Condition Changes**

Parameter: Vr Change with High Vro

Condition Was: Vr(Vro=Vr) -Vr (Vro=6.3V)  
(5.06V between Anode and FEEDBACK)

Condition Is: Vr(Vro=Vr) -Vr (Vro=5.0V)  
(3.76V between Anode and FEEDBACK)

Parameter: FEEDBACK Bias Current

Condition Was: Ifb; Vanode <= Vfb <=5.06V

Condition Is: Ifb; Vanode <= Vfb <=3.76V

**Effect of Change:**

There is no effect on quality or reliability. The conditions for "Vr Change with High Vro" are not considered to be critical to the operation of this device. This is a datasheet change. There is no change to the physical product.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Larry McGee, Analog Engineering Manager Tel: (408) 721-7231 Email: larry.mcgee@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99022**

**Issued: 10/04/99**

<b>GIDEP Nr:</b> AH6-P-00-01	<b>GIDEP Category:</b> Problem Advisory	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Clamping, Low-Gain OpAmp with Fast 14-bit Settling

**Standard Military**

**Part Number**

5962-9174301MPA

5962-9174301M2A

**National**

**Part Number**

CLC502AJ-QML

CLC502AE-QML

**Proposed Date of Change:**

9/9/99

**Description of Change:**

National Semiconductor has discovered an error in the CLC502 test program that affects the following tested parameters:

- Gain Flatness, peaking low (GFPL)
- Gain Flatness, peaking high (GFPH)
- Gain Flatness, rolloff (GFR)

The conditions guaranteed in the SMD are midpoint frequency of 25MHz and rolloff frequency of 50MHz for these parameters. The test program was using conditions of 5MHz and 0.75MHz for the midpoint and rolloff frequencies respectively.

**Effect of Change:**

Impact to customers is negligible. A review of our records has shown that no customer has either questioned performance or returned devices for problems with these parameters. Additionally, no failures occurred during the retest of our existing inventory with the corrected test program.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Shaw Mead, Analog Engineer (408)721-3956 email: shaw.mead@nsc.com	

**Other Ref:**

**Associated Notes / Table(s):**





***ENHANCED SOLUTIONS***  
***DESIGN/PROCESS CHANGE NOTIFICATION***  
*(formerly Military & Aerospace Division)*

**PCN Nr: MA99023**

**Issued: 10/12/99**

<b>GIDEP Nr:</b> AH6-D-00-01	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Product referenced in Table I

**Proposed Date of Change:**

**October 1999** - Life Time Buys can not be accepted.

**Description of Change:**

National Semiconductor regrets to inform you that we are obsoleting the JAN B versions of the CD4012, CD4019A and CD4019B functions. We are no longer able to fabricate this die and we have depleted all of our inventory of die and finished goods. Regrettably we will not be able to offer a Last Time Buy for these devices.

**Effect of Change:**

National Semiconductor apologizes in advance for any inconvenience this discontinuance may cause.

Please contact National Semiconductor's Customer Support Center at 1-800-272-9959 or your local Sales Representative with any questions.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>		

**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I:**

<b>Obsolete National Part Number</b>	<b>Obsolete JAN Part Number</b>	<b>Suggested Alternate Part Number</b>	<b>Suggested Alternate Manufacturer</b>
CD4012ABCA	JM38510/05002BCA	CD4012BF3A	Texas Instruments
CD4019ABEA	JM38510/05302BEA	CD4019BF3A	Texas Instruments
CD4019ABFA	JM38510/05302BFA	CD4019BF3A	Texas Instruments
CD4019BBEA	JM38510/05352BEA	CD4019BF3A	Texas Instruments



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99024**

**Issued: 11/02/99**

GIDEP Nr: AH6-C-00-01	GIDEP Category: PCN	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

All National Semiconductor 4, 5, and 6 inch (wafer size) products manufactured at Fairchild's South Portland, Maine wafer fabrication facility. All product assurance levels (/883, SMD, JAN B, JAN S, QML, QMLV and Rad) and package types are affected. Military and commercial grade wafer and die products of these products are also affected. The generic family types are listed below:

ABT (BiCMOS) and FACT 1.5 micron (CMOS) Logic Products ==> (54ABTxxx, 54ACQxxx, 54ACTQxxx, 54FCTxxx, and SCANxxx)

FACT 2.0 micron (CMOS) Logic Products ==> (54ACxxx and 54ACTxxx)

FAST (Bipolar) Logic Products ==> (54Fxxx)

ECL (Bipolar) Logic Products ==> (100xxx)

ABIC products with the prefix LMX

Interface and TTL/LS/DTL (CMOS/Bipolar) Logic Products with the prefix of DS, DP, DM or 54LS, or 93Lxx, 9xx, 96xx, 94xx

CMOS Products (CD4xxx) [MM54C] [MM54HC]

Low Voltage CMOS Products [54LCXxxx]

CMOS Buss Switches [54LVXxxx]

**Proposed Date of Change:**

**November 26, 1999**

**Description of Change:**

Fairchild Semiconductor has qualified a Disco Model DFG840 top down grinder located at its assembly facility in Penang, Malaysia to replace its existing Disco Model DFG83H grinders located at its wafer fabrication facility in South Portland, Maine.

**Effect of Change:**

Product Parametric performance won't be impacted. Mechanical performance will be enhanced since the new top down grinder technology produces a very smooth surface finish with less stress compared to old grind technology. The resultant wafer/die strength increases.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Tom Mason, Logic Product Eng. Mgr. Tel: 207-541-8222 Email: tom.mason@nsc.com	



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99025**

**Issued: 11/02/99**

GIDEP Nr: AH6-C-00-02	GIDEP Category: PCN	TRB Nr: 154
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

ALL QML "V" LEVEL AND JAN "S" LEVEL PRODUCTS

**Proposed Date of Change:**

October 18, 1999

**Description of Change:**

THERMAL STABILITY TEST OPTIMIZATION  
MIL-STD-883 TEST METHOD 5007 (WAFER LOT ACCEPTANCE)

Thermal Stability testing is required for each specific wafer lot, for wafer lot acceptance per MIL-STD-883, TM 5007. National Semiconductor's Enhanced Solutions Technical Review Board has approved use of in-line process qualification monitors in lieu of lot specific Thermal Stability testing, for Class "V" and JAN "S" products manufactured on QMLV certified lines.

National Semiconductor will provide monitor Drift data for each Space Level Wafer Lot Acceptance Report, this data will be the results of the corresponding in-line monitor.

The methodology and data were reviewed with DSCC and Aerospace Corporation in accordance with the requirements of MIL-PRF-38535. Concurrence for thermal stability test optimization was given after reviews of data demonstrated that monitors yield product of equal quality.

**Effect of Change:**

The quality, reliability, and electrical performance of these products will not be adversely affected.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Susan Davis, Space Level Manager Tel: (408) 721-3161 Email: susan.davis@nsc.com	



**ENHANCED SOLUTIONS**  
**DESIGN/PROCESS CHANGE NOTIFICATION**  
*(formerly Military & Aerospace Division)*

**PCN Nr: MA99026**

**Issued: 11/09/99**

<b>GIDEP Nr:</b> AH6-D-00-02	<b>GIDEP Category:</b> DMSMS	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Fairchild Logic Commercial product in either die or wafer form (**See Table I**)

**Proposed Date of Change:**

Effective November 1, 1999

**Description of Change:**

National Semiconductor will no longer offer standard Fairchild Logic Commercial product in either die or wafer form. We will continue to support Logic die and wafer products for military, space and other extended temperature applications.

This change is made to align our die product offerings with the markets for National's packaged products and enable us to better meet your requirements for system level products in your new designs.

**Effect of Change:**

We will continue to be available to service you with all your die needs. If you have designs utilizing Logic products for military and space, please call us at 1-877-Dial-Die (1-877-342-5343) or you can reach us on the internet at [www.national.com/die](http://www.national.com/die).

We regret any inconvenience this change may cause you. If you have any questions or clarifications, please call the above number.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: <a href="mailto:petra.pavel@nsc.com">petra.pavel@nsc.com</a>
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: <a href="mailto:support@nsc.com">support@nsc.com</a>	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: <a href="mailto:europe.support@nsc.com">europe.support@nsc.com</a>

<b>Other contacts</b>	Bruce Blaisdell Die Products Staff Business Marketing Mgr Tel: (207) 541-8896 Email: <a href="mailto:bruce.g.blaisdell@nsc.com">bruce.g.blaisdell@nsc.com</a>  Jackie Collard Die Products Business Unit Marketing Manager Tel: (207) 541-8760 Email: <a href="mailto:jacqueline.l.collard@nsc.com">jacqueline.l.collard@nsc.com</a>	
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**Other Ref:**

**Associated Notes / Table(s):**

**TABLE I: Listing by Die Product Identification**

100324 MWC	74ACT3301 MWC	CD4015 MWC	MM74HC02 MWC
100325 MWC	74ACT373 MWC	CD4017B MWC	MM74HC04 MDC
100395 MWC	74ACT573 MDC	CD4024B MWC	MM74HC04 MWC
74AC00 MDC	74ACT573 MWC	CD4050B MWC	MM74HC123A MWC
74AC00 MWC	74ACT574 MWC	CD4051BC MWC	MM74HC125 MDC
74AC02 MDC	74ACT818 MWC	CD4052B MDC	MM74HC132 MDC
74AC04 MWC	74ACTQ04 MWC	CD4052B MWC	MM74HC14 MWC
74AC08 MDC	74ACTQ08 MWC	CD4069UB MWC	MM74HC157 MWC
74AC138 MWC	74ACTQ16543 MWC	CD4093BC MWC	MM74HC174 MWC
74AC139 MDC	74ACTQ74 MWC	CD4538BC MWC	MM74HC175 MWC
74AC139 MWC	74ACTQ823 MWC	CGS3321 MWC	MM74HC221 MWC
74AC14 MWC	74F00 MWC	DM7402 MWC	MM74HC244 MWC
74AC163 MWC	74F02 MWC	DM7420 MWC	MM74HC245A MWC
74AC20 MWC	74F04 MWC	DM7426 MWC	MM74HC32 MWC
74AC240 MWC	74F138 MWC	DM7442 MWC	MM74HC373 MWC
74AC244 MWC	74F139 MDC	DM7473 MWC	MM74HC374 MWC
74AC245 MWC	74F139 MWC	DM7490 MWC	MM74HC393 MWC
74AC32 MDC	74F194 MWC	DM74ALS162 MWC	MM74HC4040 MWC
74AC32 MWC	74F20 MWC	DM74LS126A MWC	MM74HC4046 MWC
74AC373 MWC	74F382 MWC	DM74LS151 MWC	MM74HC4050 MWC
74AC74 MDC	74F399 MWC	DM74LS161A MWC	MM74HC4051 MWC
74AC74 MWC	74F74 MWC	DM74LS163A MWC	MM74HC4052 MWC
74AC86 MWC	74LCX04 MWC	DM74LS193 MWC	MM74HC4066 MWC
74ACT02 MWC	74LCX16244 MDC	DM74LS32 MWC	MM74HC4316 MWC
74ACT109 MWC	74LCX16244 MWC	DM74LS74A MWC	MM74HC4514 MWC
74ACT138 MWC	74LVX245 MWC	DM74LS75 MWC	MM74HC4538 MDC
74ACT153 MWC	74LVC3245 MWC	DM74LS86 MWC	MM74HC595 MWC
74ACT157 MWC	74VHC00 MDC	DM74S02 MWC	MM74HC86 MDC
74ACT158 MWC	74VHC00 MWC	MM74C14 MWC	MM74HCT00 MWC
74ACT244 MWC	74VHC02 MDC	MM74C373 MWC	MM74HCT05 MWC
74ACT245 MWC	74VHC139 MWC	MM74C374 MWC	MM74HCT245 MWC
74ACT257 MWC	74VHC86 MDC	MM74C74 MWC	MM74HCU04 MWC
74ACT299 MWC	74VHC86 MWC	MM74C86 MWC	
74ACT32 MDC	93L14 MWC	MM74HC00 MDC	
74ACT3301 MDC	CD4001BC MWC	MM74HC00 MWC	



## ***ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99027**

**Issued: 11/10/99**

<b>GIDEP Nr:</b> AH6-C-00-03	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

**Hex Inverter**

MM54C04J/883

MM54C04W/883

**Proposed Date of Change:**

**Datecode 9942**

**Description of Change:**

The contact mask (4th mask) has had the openings reduced by one micron per side to increase alignment tolerance. This change prevents a potential line on line mask layer alignment situation (with the contact mask and a previous underlying mask layer) under worse case alignment conditions in the FAB. The line on line situation could potentially create a very large step that would be difficult to cover during metallization.

**Effect of Change:**

The mask change does not compromise current density. The quality, reliability, and electrical performance of the device will not be adversely affected by these changes.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com
<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com

<b>Other contacts</b>	Don Miller, Logic Senior Product Engineer Tel: 207-541-8492 Email: don.miller@nsc.com	
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# ENHANCED SOLUTIONS DESIGN/PROCESS CHANGE NOTIFICATION

(formerly Military & Aerospace Division)

**PCN Nr: MA99028**

**Issued: 11/18/99**

GIDEP Nr: AH6-D-00-03	GIDEP Category: DMSMS	TRB Nr:
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***This is to advise you that a Design and/or Process Change will be made to the following High Reliability product(s):***

**Product ID (Description):**

Packaged Products

CLC533AE-QML (5962-9320301M2A)

CLC533AJ-QML (5962-9320301MEA)

Commercial Die sales

Managed by Enhanced Solutions

ADC10158 MWC

**Proposed Date of Change:**

Lifetime buy purchase orders will be accepted until **6 Dec 2000**.

**Description of Change:**

**PRODUCT OBSOLESCENCE**

National Semiconductor wishes to inform you that the devices listed are being discontinued. The decision to obsolete these products was primarily due to low volume or minimal demand from our customer base.

**Effect of Change:**

While all best efforts will be made to ensure that product can be supplied for any order received during the Life Time Buy period, this cannot be guaranteed.

We would therefore advise that you do not wait until the last moment before placing your final orders.

Unfortunately there are no suggested alternate devices and manufacturers for these products.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com

<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Kirk Lemon Enhanced Solutions Analog Marketing (408) 721-4172 email: kirk.lemon@nsc.com  Jacqueline Collard Die products Business Unit Marketing (207)541-8760 email: jacqueline.l.collard@nsc.com	



## **ENHANCED SOLUTIONS**

### **DESIGN/PROCESS CHANGE NOTIFICATION**

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99029**

**Issued: 11/29/99**

<b>GIDEP Nr:</b> AH6-C-00-04	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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**Product ID (Description):**

Quad LM741 Op Amp  
 LM148 MW8 (Military die)  
 LM148E/883  
 LM148J/883

**Proposed Date of Change:**

November 19, 1999

**Description of Change:**

The Short Circuit Current (IOS) limits have been changed from +/- 45mA at room temperature to +/- 55mA at room temperature.

This change will standardize National's /883 product with the Slashesheet devices (JM38510) that we currently manufacture.

**Effect of Change:**

Customers are encouraged to review their applications to determine the possible impact of the above information.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
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<b>Other contacts</b>	Larry McGee, Analog Eng. Mgr. (408) 721-7231 email: larry.mcgee@nsc.com	



## ***ENHANCED SOLUTIONS***

### ***DESIGN/PROCESS CHANGE NOTIFICATION***

*(formerly Military & Aerospace Division)*

**PCN Nr: MA99030**

**Issued: 12/03/99**

<b>GIDEP Nr:</b> AH6-C-99-05	<b>GIDEP Category:</b> PCN	<b>TRB Nr:</b>
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**Product ID (Description):**

LFAST Products - Level Q (see Tables I & II)

**Proposed Date of Change:**

Datecode 9942

**Description of Change:**

National Semiconductor's 6" wafer fabrication line in Greenock, Scotland has qualified the Novellus Field Oxide Deposition and a new back-end process from 1st interconnect metal deposition to 2nd metal deposition for all products running on LFAST 1-process flow. This includes the following process changes to the back end, 0.5%CuAl metal 1, Novellus ILD Deposition, and 0.5%CuAl metal 2.

<u>Process step</u>	<u>Standard Process</u>	<u>New Process</u>
Field Oxide	Low Temperature Oxidation	Novellus PECVD
Metal1 composition	1%Si 2%Cu Al	0.5%Cu Al
Inter Layer Dielectric	Low Temperature Oxidation	Novellus PECVD
Metal2 composition	1%Si 2%Cu Al	0.5%Cu Al

**Effect of Change:**

There will be no major change to form, fit or function of the final product shipped to customers. Greater device lifetime reliability is anticipated from the new metal deposition steps. These steps reduce particulates and therefore greatly reduce the chance of defect related failures in the field. Also increased metal step coverage signifies better electromigration performance.

**In Case of further questions please contact:**

	<b>North America</b>	<b>Europe</b>
<b>QA / Spec Control</b>	Tel: 408-721-5649	Tel: +49 (0)8141 35-1483 / 1402
<b>PCN Administrator</b>	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com	Eur Enhanced Solutions Marketing: Tel: +49 (0)8141 35 1495 Email: petra.pavel@nsc.com

<b>Customer Support Center</b>	Tel: 1-800-272-9959 Email: support@nsc.com	Tel: +49 (0)180 530 8585 (German) Tel: +49 (0)180 532 7832 (English) Email: europe.support@nsc.com
<b>Other contacts</b>	Michael Fitzgerald Senior Logic Product Engineer Tel: 207-541-8278 Email: michael.fitzgerald@nsc.com  Jacqueline Collard Die products Business Unit Marketing (207)541-8760 email: jacqueline.l.collard@nsc.com	



**Other Ref:** None

**Associated Notes / Table(s):**

**TABLE I:**

<b>National Part Number</b>	<b>Standard Microcircuit Drawing #</b>
DS16F95E/883	5962-89615012A
DS16F95J/883	5962-8961501PA
DS16F95W-SMD	5962-8961501HA
DS16F95W/883	n/a
DS16F95WG/883	5962-8961501QXA
DS26F31ME/883	5962-7802302M2A
DS26F31MJ/883	5962-7802302MEA
DS26F31MW/883	5962-7802302MFA
DS26F32ME/883	5962-7802005M2A
DS26F32MJ/883	5962-7802005MEA
DS26F32MW/883	5962-7802005MFA
DS96F172ME/883	5962-9076501M2A
DS96F172MJ/883	5962-9076501MEA
DS96F172MW-MIL	N/A
DS96F173ME/883	5962-9076602M2A
DS96F173MJ/883	5962-9076602MEA
DS96F173MW/883	5962-9076602MFA
DS96F174MJ/883	5962-9076502MEA
DS96F174ME/883	5962-9076502M2A
DS96F174MW/883	5962-9076502MFA
DS96F175ME/883	5962-9076601M2A
DS96F175MJ/883	5962-9076601MEA
DS96F175MW/883	5962-9076601MFA

**TABLE II:**

**DIE SALES:**

DS16F95 MDA  
DS16F95 MDS  
DS16F95 MWA

DS26F31 MDA  
DS26F31 MWA

DS26F32 MDS  
DS26F32 MD8  
DS26F32 MW8