National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: 1997 Listing **Issued: 01/21/97**

GIDEP Nr:	GIDEP Category:	TRB Nr:

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):

Proposed Date of Change:

Description of Change:

Effect of Change:

In Case of further questions please contact:

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

Other Ref:

Associated Notes / Table(s):

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

PCN Nr	Date	Description
MA97001	20 Jan 97	LH0021K-MIL Obsolescence
MA97002	06 Feb 97	Comlinear - CLC449AMC Test limit change
MA97003	07 Feb 97	Comlinear - CLC409 Test limit change
MA97004	25 Feb 97	54ACTQ245 / 374 Test Error
MA97005	27 Feb 97	54ACQ245 Testing
MA97005A	27 Feb 97	54ACQ245 Testing - amended
MA97006	28 Feb 97	256K SRAM Obsolescence
MA97007	04 Mar 97	Q3FY97 Military Product Obsolescence
MA97008	17 Mar 97	54AC280 Testing
MA97009	28 Mar 97	54ABT245 Testing
MA97009A	05 May 97	54ABT245 Testing - Amended
MA97010	28 Mar 97	54ABT543 Testing
MA97011	03 Apr 97	1 Meg SRAM Subcontractor
MA97011A	03 Sep 97	AMENDED - 1 Meg SRAM Subcontractor
MA97012	23 Apr 97	SCANPC110 Die Revision
MA97013	28 Apr 97	MLS FACT -55 Test Ellimination [S]
MA97014	05 May 97	Q4FY97 Military Product Obsolescence [S]
MA97015	06 May 97	Comlinear - 14L DIL Package [S]
MA97016	06 May 97	Comlinear CLC532 Test Limit [S]
MA97017	07 May 97	Comlinear TO-8 Package Dimensions
MA97018	08 May 97	Comlinear - CLC402 & CLC502 Wafer Probe Test site [S]
MA97019	14 May 97	FACT ICCZ and AC Testing
MA97020	14 May 97	54AC86 ICCH/ICCL Testing
MA97021	19 Jun 97	LFAST Step Coverage [S]
MA97022	14 Jul 97	LM6172AMJ-QML Package
MA97023	17 Jul 97	LMD18200-2D/883 Die Changes
MA97024	24 Jul 97	Comlinear CLC533 Test Limit
MA97025	12 Aug 97	LMC6462/64 Wafer Fab/Die Changes
MA97026	22 Aug 97	Comlinear Hybrid Obsolescence
MA97027	03 Sep 97	Comlinear Monolithic Obsolescence
MA97028	10 Sep 97	Standard 883/JAN B FACT Processing
MA97029	12 Sep 97	DBI from Silicon to Plated Kovear [S]
MA97030	18 Sep 97	Q1FY98 Military Product Obsolescence [S]
MA97030A	28 Jan 98	First Amendment - Q1FY98 Military Product Obsolescence [S]
MA97030B	25 Mar 98	Second Amendment- Q1FY98 Military Product Obsolescence [S]
MA97030C	25 Aug 98	Third Amendment - Q1FY98 Military Product Obsolescence [S]
MA97031	22 Sep 97	MM54C04 / CD4069 Wafer fab Transfer
MA97032	06 Oct 97	DP8572 Obsolescence
MA97033	23 Oct 97	DBI Change (Interface Products)
MA97034	30 Oct 97	Comlinear Process Transfer [S]
MA97034A	24 Nov 97	AMENDED- Comlinear Process Transfer [S]
MA97034B	14 Apr 99	AMENDED- Comlinear Process Transfer [S]
MA97035	12 Nov 97	Commercial Analog - Ceramic Product Re-Instatement
MA97036	13 Nov 97	JL2111BEA Obsolescence
MA97037	24 Nov 97	Q2FY98 Military Division Obsolescence [S]
MA97037A	30 JAN 98	AMENDED- Q2FY98 Military Division Obsolescence [S]

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MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97001 **Issued: 20.01.97**

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):

LH0021K-MIL 1.0A POWER OPERATIONAL AMPLIFIER

Proposed Date of Change:

EFFECTIVE IMMEDIATELY - No lifetime buys available.

Description of Change:

PRODUCT OBSOLESCENCE

Effective immediately National Semiconductor's Military/Aerospace Division will obsolete the LH0021K-MIL. This device is no longer manufacturable.
Suggested replacement is ELH0021K/883 sold by Elantec.
The current Standard Microcircuit Drawing # 8508801YX is also manufactured by Elantec, CTS Micro, and MS Kennedy.

Customers that are using the devices have been notified of this change and have either placed last time buys or found alternate solutions for long term support. No other Life Time Buy options will be accepted.

Effect of Change:

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

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Other European contacts

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Other N.American contacts

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97002 **Issued: 06.02.97**

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):

1.2GHz Ultra-Wideband Monolithic Op Amp CLC449AMC

Proposed Date of Change:

December 20, 1996

Description of Change:

Test Limit Changes
The following test limits have been changed at -55 Degree C and +125 Degree C.
Gain Flatness (GFLAT) changed from +/- 0.5 to +/- 0.7 dB.
Input Offset Voltages (Vio) changed from 9 to 12 mV.

Effect of Change:

To improve Cpk (product capability coefficient) on Vio and GFLAT parameters.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

QA/Spec Control	Tel: +49 (0)8141 35-1483 / 1402
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Other European contacts

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	Email: sherry.dobbins@nsc.com

Other N.American contacts Sherri Smith - Comlinear Contracts Tel: +1 970-225-7419

Other Ref: Comlinear ref: MC# 7890

Associated Notes / Table(s):

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97003 **Issued: 07.02.97**

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):

Very Wideband, Low Distortion, Monolithic Op Amp
CLC409ALC
CLC409AMC
CLC409A8D 5962-9203401MPC
CLC409A8L-2 5962-9203401M2A

Proposed Date of Change:

January 20, 1997

Description of Change:

Test Limit Change:
The 2nd harmonic distortion limit has been changed from -60 to -57 dBc for the maximum rated operating temperature.

Effect of Change:

To improve product yield.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
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PCN Administrator Tel: 408-721-4189
Email: sherry.dobbins@nsc.com

Other N.American contacts Sherri Smith - Comlinear Contracts Tel: +1 970-225-7419

Other Ref: Comlinear ref: MC# 7911

Associated Notes / Table(s):

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97004 **Issued: 25.02.97**

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):

NSID	SMD #	
54ACTQ245DMQB	5962-9218701MRA	Quiet Series Octal Bidirectional Transceiver
54ACTQ245FMQB	5962-9218701MSA	with Tri-State Outputs
54ACTQ245LMQB	5962-9218701M2A	
54ACTQ374DMQB	5962-9218901MRA	Quiet Series Octal D Flip-Flop with Tri-State
54ACTQ374FMQB	5962-9218901MSA	Outputs
54ACTQ374LMQB	5962-9218901M2A	

Proposed Date of Change:

February 12th, 1997
All shipments of these devices before the above referenced date were affected.

Description of Change:

It has been determined that 2 54ACTQ devices (245/374) were not being tested properly for the VIOL (Dynamic Output Current Low) parameter.
The correct forcing value and limit are +50mA and 1.65V. Devices have been incorrectly tested with the current force of -57mA and 1.65V limit.

Effect of Change:

The VIOL test is designed to test dynamic output current and is used to guarantee incident wave switching on transmission lines with impedances as low as 75 ohms over the military temperature range. It is essentially a VOL (low level output voltage) test but at a much higher current. With the incorrect forcing current, this test has effectively not been performed.

There should be no impact to customers. Characterization data shows that the outputs of both of these devices would fail the VOL33 test (5.5V VCC, force = 24mA, limit = 0.5V) long before the output would fail the VIOL test. Thus, even though the VIOL test has not been performed, devices that have successfully passed the VOL33 test are guaranteed to pass the VIOL test. VOL33 is tested in both test programs, 100% screened on all devices.

In case of further questions please contact:

Europe

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QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
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Other N.American contacts Don Miller Logic Product Engineering 207 775 8492

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97005A Issued: 27.02.97

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):

Quiet Series Octal Bidirectional Transceiver with TRI-STATE Outputs

/883 PART #	SMD PART #
54ACQ245DMQB	5962-9217701MRA
54ACQ245FMQB	5962-9217701MSA
54ACQ245LMQB	5962-9217701M2A

Proposed Date of Change:

FEBRUARY 25, 1997

Description of Change:

AC prop delay minimum limits are specified in the SMD and in National's military datasheet at 2.0ns for 25C and 125C temperatures, 3.0V and 4.5V Vcc's, for the following AC paths:
tpLH, tpHL, tpZL, tpZH. National has been testing these AC paths with an incorrect minimum limit of 1.5ns at those temperatures and Vcc's. National has ammended the test program so that we will now be testing those AC paths to the 2.0 ns minimum limit as specified in the SMD and National's military datasheet.

Effect of Change:

The impact to customers is negligible. Both 25C and 125C specs (and both 3.0V and 4.5V Vcc's) were 100% production screened with 1.8ns minimum limits and QA audited to 1.5ns minimum limits. -55C specs are guaranteed and no longer tested. Thus, worst case test condition for all of these AC paths to the minimum limit is at 25C.
Our 25C characterization data for the fastest path (TPLH) at 5.5V VCC shows a mean of 4.7ns, a minimum of 4.0ns and a sigma of 0.17ns. Thus the data shows that a minumum limit of 2.0ns is actually 15 sigma away from the mean and 11 sigma away from the minimum reading. The 2.0ns test limit is extremely conservative and thus there is no jeopardy that any units in the field would fail this spec due to our incorrect test limit.

In case of further questions please contact:

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	Email: support@nsc.com
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	Email: sherry.dobbins@nsc.com
Other N.American contacts	Don Miller Logic Product Engineering (207) 775 8492

Other Ref:

Associated Notes / Table(s):

**** AMENDED: DESCRIPTION OF CHANGE CLARIFICATION ****

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97006 **Issued: 28.02.97**

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):

256K SRAM (see Table I)

Proposed Date of Change:

February 24, 1997 - No lifetime buys offered.

Description of Change:

Product Obsolescence.
Product is no longer being supported in wafer fabrication.

Effect of Change:

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

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Other N.American contacts John Vorwerk Mil/Aero Marketing (408) 721-5660
internet: john.vorwerk@nsc.com

Other Ref:

Associated Notes / Table(s):

TABLE 1

National Part #	Standard Microcircuit Drawing#
NS41256 MDC	
NS41256L15 MDA	
NS41256L15J-MCP	
NS41256L15J-SMD	5962-8855212UA
NS41256L17J-MCP	
NS41256L17J-SMD	5962-8855211UA
NS41256L17J/883	
NS41256L20E-SMD	5962-8855210YA
NS41256L20E/883	
NS41256L20J-SMD	5962-8855210UA
NS41256L35E-MCP	
NS41256S15E/883	
NS41256S15J-SMD	5962-8866208NA
NS41256S20J-SMD	5962-8866207NA
NS41256S20J/883	
NS41256S25J-MCP	
NS41256S35E-MCP	
NS41256S35J-SMD	5962-8866205NA
NS41256S45E-SMD	5962-8866204YA
NS41258L20J/883	
NS41258L35J-MCP	

Logic Devices is the suggested alternate manufacturing source.

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97007 **Issued: 04.03.97**

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

Proposed Date of Change:

March 10, 1998
Lifetime buy purchase orders will be accepted until MARCH 10, 1998.

Description of Change:

PRODUCT OBSOLESCENCE
Devices listed in Table I have exhibited minimal sales volume from our customer base and are therefore being discontinued.

Effect of Change:

In case of further questions please contact:

Europe

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Other European contacts

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Other N.American contacts Jacqueline L. Collard Mil/Aero Logic Marketing Manager
Tel: +1 207 775-8760 internet: jacqueline.l.collard@nsc.com

Other Ref:

Associated Notes / Table(s):

TABLE I

Affected NSIDs	Alternate Part	Number and Manufacturer
DM54LS03J/883	SNJ54LS03	TEXAS INSTRUMENTS
DM54LS05J/883	54AC05DMQB	NATIONAL SEMICONDUCTOR
DM54LS05W/883	54AC05FMQB	NATIONAL SEMICONDUCTOR
DM54LS113J/883		NONE
DM54LS113W/883		NONE
DM54LS125AJ/883	SNJ54LS125	TEXAS INSTRUMENTS
DM54LS125AW/883	SNJ54LS125	TEXAS INSTRUMENTS
DM54LS133J/883	SNJ54LS125	TEXAS INSTRUMENTS
DM54LS133W/883		NONE
DM54LS168J/883		NONE
DM54LS194AJ/883	SNJ54LS194	TEXAS INSTRUMENTS
DM54LS194AW/883	SNJ54LS194	TEXAS INSTRUMENTS
DM54LS21J/883	SNJ54LS21	TEXAS INSTRUMENTS
DM54LS253J/883	54F253DMQB	NATIONAL SEMICONDUCTOR
DM54LS253W-MLS	54F253FMQB	NATIONAL SEMICONDUCTOR
DM54LS253W/883	54F253FMQB	NATIONAL SEMICONDUCTOR
DM54LS27J/883	SNJ54LS27	TEXAS INSTRUMENTS
DM54LS366AJ/883	SNJ54LS366	TEXAS INSTRUMENTS
DM54LS503J/883		NONE
DM54LS51E/883	SNJ54LS51	TEXAS INSTRUMENTS
DM54LS51J/883	SNJ54LS51	TEXAS INSTRUMENTS
DM54LS51W-MLS	SNJ54LS51	TEXAS INSTRUMENTS
DM54LS51W/883	SNJ54LS51	TEXAS INSTRUMENTS
DM54LS83AJ/883		NONE
11C06FM-MLS		NONE
93L09DMQB		NONE
9311J/883		NONE
9311W/883		NONE
9316DM		NONE
937DMQB		NONE
948DMQB		NONE
949DMQB		NONE
HPC46100W40-MCR		NONE

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97008 **Issued: 17.03.97**

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):

9 BIT PARITY GENERATOR/CHECKER

/883 PART #
54AC280DMQB
54AC280FMQB
54AC280LMQB

Please note that the SMD part numbers for this device are not affected by this change.

The SMD part is specified with 1.0ns minimum limits for all AC paths, all Vcc's and has been tested correctly.

Proposed Date of Change:

March 11, 1997

Description of Change:

AC prop delay minimum limits are specified in National's military datasheet at 1.5ns for 25C and 125C temperatures, 4.5V Vcc's, for all tpLH and tpHL paths on the /883 part.
National has been testing these paths with an incorrect minimum limit of 1.0ns at those temperatures and Vcc's. The 3.0V Vcc prop delays have been tested to the correct limits, only the 4.5V Vcc prop delays are affected. National has ammended the test program such that we will now be testing all 4.5V Vcc AC paths to a 1.5ns minimum limit as is specified in our military datasheet.

Effect of Change:

The impact to customers is negligible.
Both 25C and 125C specs were 100% production screened at Vcc = 4.5V to 1.3ns minimum limits and QA audited to 1.0ns minimum limits. -55C specs are guaranteed and no longer tested. Thus, worst case test condition for all of these AC paths to the minimum limit is at 25C. Our 25C characterization data for the fastest path (TPHL, input to even parity output) at 5.5V VCC shows a mean of 6.64ns, a minimum of 5.7ns and a sigma of 0.33ns. Thus the data shows that a minumum limit of 1.5ns is actually 15 sigma away from the mean and 12 sigma away from the minimum reading. The 1.5ns test limit is extremely conservative and thus there is no jeopardy that any units in the field would fail this spec due to our incorrect test limit.

In case of further questions please contact:

Europe
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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97009A **Issued: 05.05.97**

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):

Octal Bidirectional Transceiver with TRI-STATE Outputs

Standard Military Part Number	National Part Number
5962-9214801QRX	54ABT245J-QML
5962-9214801QSX	54ABT245W-QML
5962-9214801Q2X	54ABT245E-QML

Proposed Date of Change:

APRIL 04, 1997

Description of Change:

National Semiconductor has discovered that the 54ABT245 device has the tpLZ path tested to the incorrect specified maximum limit at 4.5V/5.5V VCC, 125C and -55C temperature.

The tpLZ path was being tested to the limit : 7.5ns, rather than the SMD limit : 6.5nS at 4.5V/5.5V VCC, -55C/125C temperature.

DC electrical parameters and all other AC tests are not affected.

We have made corrections in our test programs, and do not believe this to be of any jeopardy to customer applications.

Effect of Change:

The impact to customers is negligible. Both 25C, 125C & -55C specs were 100% production screened at Vcc = 4.5V & 5.5V to 7.0ns maximum limits and QA audited to 7.5ns maximum limits. The worst case test condition for this AC path to the maximum limit is at 125C/4.5V VCC. Our 125C characterization data for this tpLZ path shows a mean of 4.86, a maximum of 5.08ns and a sigma of 0.166ns. Thus the data shows that a maximum limit of 6.5 is actually 9.8 sigma away from the mean and 8.5 sigma away from the maximum reading. The 6.5ns test limit is conservative and thus there is no jeopardy that any units in the field would fail this spec due to our incorrect test limit.

In case of further questions please contact:

Europe

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Other N.American contacts

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PRODUCT MARKETING MGR
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Bill Petcher
LOGIC PRODUCT ENG
(207) 541-4597

Other Ref:

Associated Notes / Table(s):

**** AMENDED - TO CORRECT STANDARD MILITARY DRAWING PACKAGE DESIGNATORS**

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97010 **Issued: 28.03.97**

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):

Octal Registered Transceiver with TRI-STATE Outputs

Standard Military Part Number	National Part Number
5962-9231401QLX	54ABT543J-QML
5962-9231401QKX	54ABT543W-QML
5962-9231401Q3X	54ABT543E-QML

Proposed Date of Change:

APRIL 04, 1997

Description of Change:

National Semiconductor has discovered that the 54ABT543 device has the tpHZ path tested to incorr
at 5V VCC, 25C only.

5V VCC, 25C tpHZ path is being tested to the 4.5V/5.5V VCC 25C
tpHZ (SPEC : 2.0ns) limit rather than the 5V VCC room temperature
(SPEC : 2.5ns) limit as specified in the SMD.

DC electrical parameters and all other AC and input timing tests are not affected. Testing at -5
is not affected.

We have corrected this error in our test programs, and do not believe this to be of any jeopardy

The limits at 5.0V VCC were provided to meet SMD requirements.
Addditionally these 5.0V limits were provided as a performance reference since real world designs
power supply variation in the system.

Effect of Change:

The impact to customers is negligible. Both 25C, 125C & -55C specs were 100% production screened
2.3ns minimum limits and QA audited to 2.0ns minimum limits.

Since all affected parts were 100% screened at 25C to the room temperature +/- 10% VCC limits, we
jeopardy with product shipped that were tested to the above conditions.

In case of further questions please contact:

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European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

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Customer Support Center	Tel: 1-800-272-9959 ext 668 Email: support@nsc.com
QA	Tel: 408-721-5649
PCN Administrator	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com

Other N.American contacts

Jon Ewald Product Marketing Mgr (207) 541-8750	Bill Petcher Logic Product Eng (207) 541-4597

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97011 **Issued: 03.04.97**

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 Meg SRAM (Reference Table) DESC SMD grade product, /883 product, and mil temp product

Proposed Date of Change:

Transistion Beginning April 1997

Description of Change:

Change in Manufacturing Subcontractor and Die source

The Mil/Aero SRAM Product Line is in the process of phasing out 1M "W" step die from the 5" wafer fab from Paradigm Technology, Inc.

National Semiconductor will continue to use the existing die inventory for 5" "W" step die until our die bank is depleted, which is anticipated to happen prior to the end of calendar year 1997. Paradigm Technology, Inc. our foundry source has shut-down their 5" wafer fab and sold the facility which is the reason for the die no longer being made available.

National Semiconductor will be transitioning to a new approved source of product for the part numbers listed in Table I. This change in subcontractor's is indicated by the letter "X" prior to our 6 character date code in the part marking (as opposed to the existing letter "H" utilized for Paradigm die manufactured for National Semiconductor) with assembly done by Anam in the Philippines and test inside National Semiconductor in Singapore. All SRAM product sold by National Semiconductor using this new approved source will bear this "X" assembly site mark which will serve as a means of differentiating it from the existing Paradigm 5" "W" step die product which National currently produces bearing the "H".

Effect of Change:

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

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
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Other European contacts

N.America

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Other N.American contacts

Jeff Bunce
Product Line Director
(408) 721-3432
internet: jeff.bunce@nsc.com

John Vorwerk
Senior Technical Marketing Manager
(408) 721-5660
internet: john.vorwerk@nsc.com

Other Ref:

Associated Notes / Table(s):

NSC Part Number	DESC Part Number
Quad LCC (Pkg Code "E")	
NS41024S20E-MCP	
NS41024S20E/883	
NS41024S20E-SMD	5962-8959838MMA
NS41024L20E-MCP	
NS41024L20E/883	
NS41024L20E-SMD	5962-8959821MMA
NS41024S25E-MCP	
NS41024S25E/883	
NS41024S25E-SMD	5962-8959837MMA
NS41024L25E-MCP	
NS41024L25E/883	
NS41024L25E-SMD	5962-8959820MMA
NS41024S35E-MCP	
NS41024S35E/883	
NS41024S35E-SMD	5962-8959836MMA
NS41024L35E-MCP	
NS41024L35E/883	
NS41024L35E-SMD	5962-8959819MMA
NS41024S45E-MCP	
NS41024S45E/883	
NS41024S45E-SMD	5962-8959835MMA
NS41024L45E-MCP	
NS41024L45E/883	
NS41024L45E-SMD	5962-8959818MMA
NS41024S55E-MCP	
NS41024S55E/883	
NS41024S55E-SMD	5962-8959834MMA
NS41024L55E-MCP	
NS41024L55E/883	
NS41024L55E-SMD	5962-8959817MMA

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97011A **Issued: 03.09.97**

GIDEP Nr: AH6-C-97-10A	**GIDEP Category:** PCN	**TRB Nr:**

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 Meg SRAM (Reference Table) DESC SMD grade product, /883 product, and mil temp product

Proposed Date of Change:

Transistion Beginning April 1997

Description of Change:

THIS TEXT HAS BEEN AMENDED * (see bolded text additions)

Change in Manufacturing Subcontractor and Die source

The Mil/Aero SRAM Product Line is in the process of phasing out 1M "W" step die from the 5" wafer fab from Paradigm Technology, Inc.

National Semiconductor will continue to use the existing die inventory for 5" "W" step die until our die bank is depleted, which is anticipated to happen prior to the end of calendar year 1997. Paradigm Technology, Inc. our foundry source has shut-down their 5" wafer fab and sold the facility which is the reason for the die no longer being made available.

National Semiconductor will be transitioning to a new approved source of product for the part numbers listed in Table I. This change in subcontractor's is indicated by the letter "X" prior to our 6 character date code in the part marking (as opposed to the existing letter "H" utilized for Paradigm die manufactured for National Semiconductor) with assembly done by Anam in the Philippines and test inside National Semiconductor in Singapore. All SRAM product sold **from April thru May 1997** by National Semiconductor using this new approved source will bear this "X" assembly site mark which will serve as a means of differentiating it from the existing Paradigm 5" "W" step die product which National currently produces bearing the "H".

***As of Datecode 9720, SRAM product sold from this new source will bear the assembly site mark of "H" and will have a single alpha suffix character from the range A thru F after the four digit datecode. (example: H9720A) Paradigm die will have the "H" assembly site code with a single alpha suffix character from the range P thru Z.**

Effect of Change:

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

In case of further questions please contact:

Europe

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Other European contacts

N.America

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PCN Administrator	Tel: 408-721-4189
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Other N.American contacts

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Product Line Director	Senior Technical Marketing Manager
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internet: jeff.bunce@nsc.com	internet: john.vorwerk@nsc.com

Other Ref:

Associated Notes / Table(s):

NSC Part Number	DESC Part Number
Quad LCC (Pkg Code "E")	
NS41024S20E-MCP	
NS41024S20E/883	
NS41024S20E-SMD	5962-8959838MMA
NS41024L20E-MCP	
NS41024L20E/883	
NS41024L20E-SMD	5962-8959821MMA
NS41024S25E-MCP	
NS41024S25E/883	
NS41024S25E-SMD	5962-8959837MMA
NS41024L25E-MCP	
NS41024L25E/883	
NS41024L25E-SMD	5962-8959820MMA
NS41024S35E-MCP	
NS41024S35E/883	
NS41024S35E-SMD	5962-8959836MMA
NS41024L35E-MCP	
NS41024L35E/883	
NS41024L35E-SMD	5962-8959819MMA
NS41024S45E-MCP	
NS41024S45E/883	
NS41024S45E-SMD	5962-8959835MMA
NS41024L45E-MCP	
NS41024L45E/883	
NS41024L45E-SMD	5962-8959818MMA
NS41024S55E-MCP	
NS41024S55E/883	
NS41024S55E-SMD	5962-8959834MMA
NS41024L55E-MCP	
NS41024L55E/883	
NS41024L55E-SMD	5962-8959817MMA

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97012 **Issued: 23.04.97**

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):

SCANPSC110F product fabricated in South Portland, Maine, on the FACT 1.5 micron CMOS process, assembled in Manila, Philippines, and tested in Singapore, Republic of Singapore.

SCANPSC110F MDA	SCANPSC110FFM
SCANPSC110F MW8	SCANPSC110FFMQB
SCANPSC110FDM	SCANPSC110FLM
SCANPSC110FDMQB	SCANPSC110FLMQB

Proposed Date of Change:

Device Datecode: 9722

Description of Change:

DIE REVISION

The product was redesigned to improve a timing relationship between the changing edge on the Test Mode Select (TMSb) input and a negative edge on the Test Clock backplane (TCKb) input. With the implementation of this redesign, the timing dependency between TMSb and the falling edge of TCKb no longer exists.

The redesigned version of the SCANPSC110F will be available in May 1997. It may be distinguished by a new ID code.

ID code for current version*	ID code for new version
'0F C0 E0 1F' (hex)	'8F C0 E0 1F' (hex)

The redesign was accomplished by minor layout changes to one (1) mask layer of the metal layer 1.

*The SCANPSC110F BSDL file has been updated to reflect the IDCODE change. Filename = NPSC110F.BSM (Rev 2)

Effect of Change:

This change has no impact on the Quality and Reliability of the product. A comprehensive data package is available upon request.
Please contact Eric Falconer at 207-541-8548.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

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European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

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PCN Administrator	Tel: 408-721-4189 Email: sherry.dobbins@nsc.com
Other N.American contacts	Eric Falconer, DMD Engineering Manager Email: eric.falconer@nsc.com Tel: 207-541-8548

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97013 **Issued: 28.04.97**

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):

Standard MLS FACT Products

Proposed Date of Change:

May 15, 1997

Description of Change:

ELIMINATION OF -55C TEST

Under the provisions of MIL-PRF-38535, National Semiconductor has eliminated 100% DC/AC production testing and Group A sampling at -55C degrees on the Standard MLS FACT family, which includes: AC, ACT, ACQ, ACTQ, FCT & SCAN logic products.

"Standard MLS" is defined as customers requesting Level 'S' processing with 883 electricals, with no source control drawing. The electrical drawing for standard MLS is the approved National Semiconductor Military Data Sheet (MDS) for the FACT 883 device type.

This does NOT apply to MLS FACT device types with specific customer drawing requirements. This also does NOT apply to JAN S or QML V FACT devices.

This process modification was fully qualified and approved by the National Semiconductor Technology Review Board.

Effect of Change:

Beginning 15-May-97, the 100% -55 degree DC/AC test process will be eliminated on the above mentioned devices. Group B5 Operational life testing will continue to include -55 degree DC/AC testing.

In case of further questions please contact:

Europe

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Other European contacts

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97014 **Issued: 05.05.97**

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

Proposed Date of Change:

JUNE 9, 1998

Lifetime buy purchase orders will be accepted until June 9, 1998.

Description of Change:

PRODUCT OBSOLESCENCE

Devices listed in Table I have exhibited minimal sales volume from our customer base and are therefore being discontinued.

Effect of Change:

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

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European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

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Other N.American contacts

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Mil/Aero Analog Marketing
(408) 721-4172
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Brian Stearns
Mil/Aero Logic Marketing
(207) 541-8671
internet: brian.stearns@nsc.com

Other Ref:

Associated Notes / Table(s):

TABLE I

Affected NSIDs	Alternate Part Number	Alternate Manufacturer		
CB0073 MD8		NONE		
CB0074 MD8		NONE		
DHOOO8H-MLS		NONE		
DH0035G-MIL		NONE		
DS3884AW/883	DS3884AVF	NATIONAL		
DS3886AW/883	DS3886AVB	NATIONAL		
DS7640J/883	DS8640N	NATIONAL		
DS7833J/883	DS8833N	NATIONAL		
DS7833W/883		NONE		
DS7834J/883	DS8834N	NATIONAL		
DS7834W/883		NONE		
DS7835J/883		NONE		
DS7835W/883		NONE		
DS7836J/883	DS8836N	NATIONAL		
DS7836W/883		NONE		
DS7838J/883	DS8838N	NATIONAL		
DS7838W/883		NONE		
LH0002H-MIL		ELANTEC		
LH0003H-MIL	HA2525/LM101	ANALOG DEVICES	HARRIS	MOTOROLA
LH0004H-MIL	HA2640/OPA445	HARRIS		
LH0024H-MIL	HA25160/3551	HARRIS		
LH0032G-MIL	HA22542/OPA605	ANALOG DEVICES	ELANTEC	HARRIS
LH0033CG	HA25033/LH0033	ANALOG DEVICES	ELANTEC	HARRIS
LH0033G-MIL	HA25033/LH0033	ANALOG DEVICES	ELANTEC	HARRIS
LH0041G-MIL		ELANTEC		
LH0070-1H-MIL		ELANTEC		
LH0070-2H-MIL		LINEAR TECHNOLOGY		
LHOO71-0H-MIL		NONE		
LH0071-2H-MIL		ELANTEC		
LH2111F/883		RAYTHEON		
LH2111D/883		RAYTHEON		
LM140H-24/883		NONE		
LM140H-6.0/883		LINFINITY		
LM140H-8.0/883		LINFINITY		
NS8184D-MSP		NONE		
NS8187D-MSP		NONE		

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97015 **Issued: 06.05.97**

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):

Various Monolithic Operational Amplifiers - Table I

Proposed Date of Change:

April 1997

Description of Change:

Comlinear has updated the following 14 lead side-brazed ceramic dual-in-line package to match National Semiconductor's package outline standard.

This is a paperwork change only.
The package outline drawing continues to be compliant with MIL-STD-1835.

Change:

INCHES		MILLIMETERS		PARAMETER
FROM	TO	FROM	TO	
.009	.008 min	.23	.20 min	Terminal Lead Thickness
.693	N/A min	17.60	N/A min	Body Length, minimum deleted
.150	.290 min	2.41	7.37 min	Center to Center, Terminal Lead Thickness
.200	.320 max	2.67	8.12 max	Center to Center, Terminal Lead Thickness
.015	N/A min	3.81	N/A min	Terminal Lead Spacing deleted
.045	N/A max	5.08	N/A min	Terminal Lead Spacing deleted
.045	.060 max	1.14	1.52 max	Standoff Height

Effect of Change:

This change does not effect fit, form, or function of the products listed.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
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Email: support@nsc.com
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PCN Administrator

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Email: sherry.dobbins@nsc.com

Other N.American contacts

Sherri Smith - Comlinear Contracts

(970) 225-7419

internet : sherri.smith@nsc.com

Other Ref: Comlinear ref: MC# 7685

Associated Notes / Table(s):

Various Monolithic Operational Amplifiers

CLC114A8D
CL114S01D
CLC115A8D
CLC414A8D
CLC415A8D
CL415S01D
CLC520A8D
CLC522A8D
CLC532A8D
CL532S01D

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97016 **Issued: 06.05.97**

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):

Linear, High Speed 2:1 analog Multiplexer - Table I

Proposed Date of Change:

Datecode effectivity is 9642

Description of Change:

The following major change has been approved via NOR5962-R290-97 for 5962-92035 on 04/29/97.
Power Supply Rejection Ratio revised from "-64" to "-63" dB for Group A subgroup 4 (+25°C)

Effect of Change:

There are no effects to the quality or reliability of these products.
This change will improve continued supply to customers.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

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	Tel: +49 (0)180 532 7832 (English)
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Other European contacts

N.America

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PCN Administrator	Tel: 408-721-4189
	Email: sherry.dobbins@nsc.com

Other N.American contacts **Sherri Smith - Comlinear Contracts**
(970) 225-7419
internet : sherri.smith@nsc.com

Other Ref: Comlinear ref: MC# 7926

Associated Notes / Table(s):

Comlinear Part Number	**Standard Microcircuit Drawing Number**
CLC532AMC	
CLC532A8B	5962-9203501MCA
CLC532A8D	5962-9203501MCC
CLC532A8L-2A	5962-9203501M2A
CL532M01C	
CL532S01D	
CL532S02D	

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97017 **Issued: 07.05.97**

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):

OPERATIONAL AMPLIFIERS (see Table I)

Proposed Date of Change:

April 13, 1997

Description of Change:

PACKAGE STANDARDIZATION

Comlinear has updated their databook package outline drawing (package dimension) for the 12 lead TO-8 metal can to reflect the standard National Semiconductor databook dimensions for the identical package.

The following changes occurred as a result:

Total package width changed from .605 to .608 inches maximum.
Total package width changed from 15.37 to 15.44 millimeters maximum

Package height at flange changed from .016 inches minimum to no minimum specified.
Package height at flange changed from .41 millimeters minimum to no minimum specified.

Effect of Change:

Please note that the packages themselves have not changed and they continue to be compliant with Mil-Std-1835.

In case of further questions please contact:

Europe

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Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

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PCN Administrator Tel: 408-721-4189
Email: sherry.dobbins@nsc.com

Other N.American contacts

Sherri Smith - Comlinear Contracts
(970) 225-7419 internet: sherri.smith@nsc.com

Other Ref: Comlinear ref: MC# 7687

Associated Notes / Table(s):

TABLE I

Comlinear Part Number	**Standard Microcircuit Drawing Number**
CLC200A8AC	5962-8991001XA
CLC200A8CC	5962-8991001XC
CL200M06G	
CL200M07G	
CL200801G	
CLC205A8AC	5962-9083501HXA
CLC205A8CC	5962-9083501HXC
CLC206A8AC	5962-8985801XA
CLC206A8CC	5962-8985801XC
CLC207A8AC	5962-9097701HXA
CLC207A8CC	5962-9097701HXC
CLC220A8AC	5962-8991101XA
CLC220A8CC	5962-8991101XC
CL220M01G	
CL220M03G	
CL220M17G	
CLC231A8AC	5962-8959401XA
CLC231A8CC	5962-8959401XC
CL231M07G	
CL231801G	
CLC232A8AC	5962-9166501HXA
CLC232A8CC	5962-9166501HXC

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MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97018 **Issued: 08.05.97**

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):

Comlinear - Operational Amplifiers Table I

Proposed Date of Change:

Datecode 9715

Description of Change:

Wafer Probe testing and control of hardware and software has been transferred from Lucent (formerly AT&T) in Reading, PA to National Semiconductor Fort Collins Site.

This concludes the wafer probe transfer project for all products previously probed at Lucent.

Effect of Change:

There are no effects to the quality or reliability of these products.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
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European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

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Email: sherry.dobbins@nsc.com

Other N.American contacts **Sherri Smith - Comlinear Contracts**
(970) 225-7419 internet : sherri.smith@nsc.com

Other Ref: Comlinear ref: **MC# 8085 /8088**

Associated Notes / Table(s):

Table I:

Comlinear Low-Gain, Fast 14 bit Settling, Operational Amplifier

CLC402AMC	
CLC402A8B	5962-9203301MPA
CLC402A8D	5962-9203301MPC
CL402M01C	

Comlinear Clamping Low-Gain, Fast 14 bit Settling, Operational Amplifier

CLC502AMC	
CLC502A8B	5962-9203301MPA
CLC502A8D	5962-9203301MPC
CLC502A8L-2A	5962-9203301M2A
CL502M01C	
CL502S03H	
CL502S04H	

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97019 **Issued: 14.05.97**

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 - Quad 2 Input Exclusive-OR Gate

Proposed Date of Change:

Product shipped between February 1993 and May 1997.

Description of Change:

National has been testing the ICCH parameter (ICC quiescent current with the outputs in the high state) and the ICCL parameter (ICC quiescent current with the outputs in the low state) on the part numbers listed in Table I to incorrect limits. See table below for details:

NSC Military Datasheet ICCH/ICCL limits @25C	@-55C/125C	SMD ICCH/ICCL limit @25C/-55C/125C	NSC test tape ICCH/ICCL limits @25C	@-55C/125C
2uA	40uA	160uA	2mA	40mA

National has amended the test tapes such that ICCH and ICCL are now tested to the NSC Military Datasheet limits.

Effect of Change:

Although ICCH and ICCL were not properly screened, these parameters were both screened at wafer probe prior to ceramic assembly at 25C to a 1uA limit. Thus, units in the field will not have any 'catastrophic' readings for these parameters. However, National cannot guarantee that they will meet the datasheet limits. Customers are encouraged to review their applications to determine the possible impact of the above information.

In case of further questions please contact:

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Other N.American contacts

```
Don Miller Logic Product Engineering

   207-541-8492
```

Other Ref:

Associated Notes / Table(s):

Table I

/883 PART #	SMD PART #
54AC86DMQB	5962-8955001CA
54AC86FMQB	5962-8955001DA
54AC86LMQB	5962-89550012A

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97020 **Issued: 14.05.97**

GIDEP Nr: AH6-P-97-06	**GIDEP Category:** Problem Advisory	**TRB Nr:**

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

Proposed Date of Change:

54FCT374 AC test All product shipped Prior to May 1997.
ICCZ test Product shipped between February 1993 and May 1997.

54FCT533 ICCZ test Product shipped between February 1993 and May 1997.

54FCT573 ICCZ test Product shipped between February 1993 and May 1997.

54FCT574 ICCZ test All product shipped Prior to May 1997.

Description of Change:

1) National has been testing the ICCZ parameter (ICC quiescent current with the outputs in high impedance or "tri-state") on the part numbers listed in Table I to incorrect limits.
See table below for details:

NSC Military Datasheet ICCZ limits @25C	NSC Military Datasheet ICCZ limits @-55C/125C	SMD ICCZ limit @25C/-55C/125C	NSC test tape ICCZ limits @25C	NSC test tape ICCZ limits @-55C/125C
8uA	80uA	1.5mA	8mA	80mA

National has amended the test tapes such that ICCZ is now tested to the NSC Military Datasheet limits.

2) Additionally, for the 54FCT374 only, National has been testing tpLH and tpHL minimum AC specs, on both /883 and SMD versions to an incorrect limit.
See table below for details:

NSC Military Datasheet tpLH/tpHL minimum limit @25C/-55C/125C	SMD tpLH/tpHL minimum limit @25C/-55C/125C	NSC test tape tpLH/tpHL min limit @25C/-55C/125C
2.0ns	2.0ns	1.5ns

National has amended the test tape such that the tpLH and tpHL minimum AC specs are now tested to the NSC Military Datasheet limits.

Effect of Change:

The AC minimum limit issue on the 54FCT374 is advisory in nature and does not pose any application problems.
Characterization data shows that the worse case mean is 4.277ns, sigma is 0.279,

while worse case minimum is 3.540ns for the affected paths. Thus, the 2.0ns minimum limit is 8.16 sigma away from the mean and 5.52 sigma away from the worse case minimum reading. The 2.0ns test limit is very conservative and thus there is no jeopardy that any units in the field would fail this AC spec (tpLH/tpHL) due to our
testing to the incorrect minimum limit.

Although ICCZ was improperly screened, the following screenings were performed on each part type and device:

1) ICCZ was 100% screened at wafer probe (25C) to a 1.0uA limit.

2) ICCH (ICC quiescent current with all outputs HIGH) was 100% screened to an 8uA limit at 25C and an 80uA limit at -55C and 125C temperature.

3) ICCL (ICC quiescent current with all outputs LOW) was 100% screened to an 8uA limit at 25C and an 80uA limit at -55C and 125C temperature.

So although ICCZ was not properly screened, it was at least room temperature screened at wafer probe prior to ceramic package assembly to a 1uA limit. Also, ICCH and ICCL were 100% screened to the same limits that ICCZ was supposed to be screened to. With this in mind, it is very unlikely that units in the field would fail ICCZ had it been properly screened. However, National cannot make that guarantee. Customers are encouraged to review their applications to determine the possible impact of the above information.

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	Email: sherry.dobbins@nsc.com

Other N.American contacts Don Miller Logic Product Eng. 207-541-8492

Other Ref:

Associated Notes / Table(s):

Table I:

883 PART #	SMD PART #	DESCRIPTION
54FCT374DMQB	5962-8762801RA	Octal D Flip-Flop with Tri-State Outputs
54FCT374FMQB	5962-8762801SA	
54FCT374LMQB	5962-87628012A	
54FCT533DMQB	5962-8865101RA	Octal Tranparent Latch with Tri-State Outputs
54FCT533FMQB	5962-8865101SA	
54FCT533LMQB	5962-88651012A	
54FCT573DMQB	5962-8863901RA	Octal Transparent Latch with Tri-State Outputs
54FCT573FMQB	5962-8863901SA	
54FCT573LMQB	5962-88639012A	
54FCT574DMQB	5962-8951301RA	Octal D Flip-Flop with Tri-State Outputs
54FCT574FMQB	5962-8951301SA	
54FCT574LMQB	5962-89513012A	

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97021 **Issued: 19.06.97**

GIDEP Nr: AH6-C-97-14	**GIDEP Category:** PCN	**TRB Nr:** 112

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):

INTERFACE PRODUCT LISTED IN TABLE I

Proposed Date of Change:

June 1997

Description of Change:

National Semiconductor's TRB (Technical Review Board) and DSCC (Defense Supply Center Columbus) have approved a modification to the metallization step coverage criteria from 50% to a minimum of 30% (remaining metallization) for the S Level products shown in Table I.

Approval was based upon design rules, reliability data and current density calculations.

REF: Mil-Std-883, TM2018

Effect of Change:

Availability of QMLV level product to a Standard Microcircuit Drawing.

In case of further questions please contact:

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Other N.American contacts

Susan Davis
Manager, Program Management Group

Military/Aerospace Division
Ph.# 408/721-3161
email: susan.davis@nsc.com

Other Ref:

Associated Notes / Table(s):

TABLE I:

DS16F95J-QMLV	5962-8961501VPA	RS-485/RS-422 DIFFERENTIAL BUS TRANSCEIVER
DS16F95W-QMLV	5962-8961501VHA	
DS26F31MJ-QMLV	5962-7802302VEA	QUAD HIGH SPEED DIFFERENTIAL LINE DRIVER
DS26F31MW-QMLV	5962-7802302VFA	
DS26F32MJ-QMLV	5962-7802005VEA	QUAD DIFFERENTIAL LINE RECEIVER
DS26F32MW-QMLV	5962-7802005VFA	
DS96F172MJ-QMLV	5962-9076501VEA	RS-485/RS-422 QUAD DIFFERENTIAL DRIVER
DS96F173MJ-QMLV	5962-9076602VEA	RS-485/RS-422 QUAD DIFFERENTIAL RECEIVER
DS96F174MJ-QMLV	5962-9076502VEA	RS-485/RS-422 QUAD DIFFERENTIAL DRIVER
DS96F175MJ-QMLV	5962-9076601VEA	RS-485/RS-422 QUAD DIFFERENTIAL RECEIVER

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97022 **Issued: 14.07.97**

GIDEP Nr: AH6-C-97-15	**GIDEP Category:** PCN	**TRB Nr:**

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):

DUAL HIGH SPEED, LOW POWER VOLTAGE FEEDBACK AMPLIFIER

LM6172AMJ-QML 5962-9560401QPA

Proposed Date of Change:

Parts built prior to datecode 9647 are Alumina and built datecode 9647 and later are Aluminum Nitride (AlN).

Description of Change:

This is to inform you that National has completed the qualification for the AlN package and it has been released to production. National will no longer build the Alumina Package.

The advantage of the AlN package over the Alumina, is the thermal properties.

PKG	TJA Still Air	TJA 500LFPM	TJC
AlN:	**100C/W**	**46C/W**	**2C/W**
Alumina:	121C/W	61C/W	12C/W

TJA = Thermal junction to ambient
TJC = Thermal junction to case

Effect of Change:

The LM6172AMJ-QML new package material has improved thermal characteristics.
There is some improvement for TJA and dynamic improvement for TJC that allows full output current at high temperature, depending on the application.

In case of further questions please contact:

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97023 **Issued: 17.07.97**

GIDEP Nr: AH6-C-97-16	**GIDEP Category:** PCN	**TRB Nr:**

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):

3A, 55V H-BRIDGE LMD18200-2D/883 5962-9232501MXA

Proposed Date of Change:

Datecode 9717

Description of Change:

Wafer Fab Location/Die Revision/Die Size

The military version of the LMD18200-2D/883 (5962-9232501MXA) was previously supplied as a die revision D (die size 270 x 140 Mils) wafer fabricated in Salt Lake City,Utah.

This notice it to inform you that a new revision E (die size 273 x 120 mils) wafer fabricated in National's Greenock, Scotland facility has been qualified and released for customer use.

The following wafer fab process changes are also incorporated into the revision E die.

The glassivation under the the first metal layer changed from undoped to 8% doped.This was a yield and process enhancement. Doped glass required an adjustment of critical poly resistors used in the current limiting circuit to maintain the same temperature window as the existing part. The nitride mask was altered to stabilize the critical surface zeners used in the UVL detection and reference blocks. The buried layer was changed on the ESD structures to minimize leakage yield loss from misalignment of isolation to buried layer. To prevent any chance of bond pad cratering on doped glass, the contact mask and active mask was modified under pad areas.Finally the shallow P+ mask was altered to improve logic circuit speed.

Additionally, a new novellus system was used for oxide deposition at Inter Layer dielectric. Novellus PECVD replaced the Low Temperature Oxidation process.Angstrom thickness of 10000 and 3.5% Phosphorous concentration remain unchanged. The change from LTO to Novellus at the Inter Layer Dielectric will reduce the particulate levels present in the oxide and also improve the uniformity of the oxide film.

Effect of Change:

The quality, reliability,and electrical performance of the device will not be adversely affected by these changes.

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97024 **Issued: 24.07.97**

GIDEP Nr: AH6-C-97-17	**GIDEP Category:** PCN	**TRB Nr:**

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):

Comlinear CLC533 High Speed 4:1 Analog Multiplexer - Table I

Proposed Date of Change:

Effective device datecode: 9650

Description of Change:

Revised Harmonic distortion parameter limit at +125°C from “-67” to “-65” dB.

Effect of Change:

There are no effects to the quality or reliability of these products. This change will improve continued supply to customers.

In case of further questions please contact:

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Other N.American contacts

Sherri Smith
Comlinear Contracts
(970) 225-7419
internet : sherri.smith@nsc.com

Other Ref: Comlinear ref: MC#: 7946

Associated Notes / Table(s):

Comlinear Part Number	Standard Microcircuit Drawing Number
CLC533AMC	
CLC533A8B	5962-9320301MEA
CLC533A8L-2A	5962-9320301M2A

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97025 **Issued: 12.08.97**

GIDEP Nr: AH6-C-97-18	**GIDEP Category:** PCN	**TRB Nr:**

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):

Dual Micropower, Rail-to-Rail, Input and Output CMOS Operational Amplifier

LMC6462AMJ-QML 5962-9560301QPA

Quad Micropower, Rail-to-Rail, Input and Output CMOS Operational Amplifier

LMC6464AMJ-QML 5962-9560302QCA
LMC6464AMWG-QML 5962-9560302QXA

Proposed Date of Change:

Product with datecode 9718 and after

Description of Change:

WAFER FAB LOCATION / DIE REVISION

	WAS	**IS**
Wafer Fab Location:	4" Greenock,Scotland	6" Greenock, Scotland
Wafer Fab Lot # Prefix:	M	J
Die Revision:	C	D
Wafer Type:	non Epi	Epi

Notes:

The wafer fabrication move was to accommodate wafer capacity.

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

The change from revision C to D represents some design changes to improve yield at cold temperature testing. The dimensions of 3 mosfet transistors per channel were changed to improve the product's output short circuit current at cold. The changes to the transistors necessitated a reduction in the compensation capacitors in order to keep datasheet typical gain band width values. Neither the locations of the active components of the active components nor the size of the die have changed. The layout of the new die is very similiar to that of the old.

The epi substrate material on the 6" wafers has an identical specification as the 4" non-epi material.

4" Non epi n-type Si res 1.9 to 2.6 0hm-cm, no backside poly
6" epi n-type Si res 2.0 to 2.6 ohm-cm, backside poly

Effect of Change:

All current device specifications, performance, and characteristics will remain unchanged. Product reliability and quality performance will be equivalent to current levels.

In case of further questions please contact:

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97026 **Issued: 22.08.97**

GIDEP Nr: AH6-D-97-09	**GIDEP Category:** DMSMS	**TRB Nr:**

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):

Hybrid Product - Table I

Proposed Date of Change:

The opportunity for lifetime buy on the products listed in Table I is **February 27, 1998**. Shipments can be made until **August 31, 1998**.

Please place lifetime buy orders as soon as possible. Prices will remain as currently published through **December 9, 1997**. Prices will then be increased significantly for the remainder of the lifetime buy period.

Description of Change:

National Semiconductor wishes to inform you of the necessity to discontinue the Comlinear hybrid devices listed in Table I.

Effect of Change:

Consistent with the National Semiconductor strategy of exiting the hybrid business,Comlinear will no longer be manufacturing these products.

National Semiconductor regrets any inconvenience this action may have on you or your company.

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Other Ref:

Associated Notes / Table(s):

Table I

CLC103	AM
CLC200	A8AC (5962-8991001XA / A8CC (5962-8991001XC)
CLC206	A8AC (5962-8985801XA) / A8CC (5962-8985801XC)
CLC231	A8AC (5962-8959401XA) / A8CC (5962-8959401XC)
CLC561	A8CC
CLC935	B8AC (5962-9203901HXA)/ B8CC (5962-9203901HXC)
CLC942	AM

CL200 M06G / 801G
CL231 M07G / 807G
CL935 803D

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97027 **Issued: 03.09.97**

GIDEP Nr: AH6-D-97-10	**GIDEP Category:** DMSMS	**TRB Nr:**

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):

Monolithic Product - Table I

Proposed Date of Change:

The opportunity for lifetime buy on the products listed in Table I is February 27, 1998. Shipments can be made until August 31, 1998.

Please place lifetime buy orders as soon as possible. Prices will remain as currently published through December 9, 1997. Prices will then be increased significantly for the remainder of the lifetime buy period.

Description of Change:

National Semiconductor wishes to inform you of the necessity to discontinue the Comlinear high reliability monolithic devices named listed in Table I. National Semiconductor is experiencing difficulty in acquiring materials and increasing manufacturing costs, thus eliminating our ability to further supply these products.

A pin for pin replacement has been identified for each of these devices in Table I should you choose to convert your product needs.

Effect of Change:

National Semiconductor regrets any inconvenience this action may have on you or your company.

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Other N.American contacts

Other Ref:

Associated Notes / Table(s):

Table I

PRODUCT	SMD	REPLACEMENT	SMD
CLC110A8D	5962-8997501PX	CLC110A8B	5962-8997501PA
CLC114A8D	5962-9233901MCC	CLC114A8B	5962-9233901MCA
CLC115A8D		CLC115A8B (qual)	TBD
CLC400A8D	5962-8997001PC	CLC400A8B	5962-8997001PA
CLC401A8D	5962-8997301PC	CLC401A8B	5962-8997301PA
CLC402A8D	5962-9203301MPC	CLC402A8B	5962-9203301MPA
CLC404A8D	5962-9099401MPC	CLC404A8B (qual)	5962-9099401MPA
CLC406A8D	5962-9200401MPC	CLC406A8B	5962-9200401MPA
CLC409A8D	5962-9203401MPC	CLC409A8B (qual)	5962-9203401MPA
CLC410A8D	5962-9060001PC	CLC410A8B	5962-9060001PA
CLC414A8D	5962-9169301MCC	CLC414A8B	5962-9169301MCA
CLC415A8D	5962-9305501MCC	CLC415A8B	5962-9305501MCA
CLC420A8D CLC420B8D	5962-9175801MPC 5962-9175802MPC	CLC420A8B CLC420B8B	5962-9175801MPA 5962-9175802MPA
CLC430A8D	5962-9203001MPC	CLC430A8B	5962-9203001MPA
CLC501A8D	5962-8997401PC	CLC501A8B	5962-8997401PA
CLC502A8D	5962-9174301MPC	CLC502A8B	5962-9174301MPA
CLC505A8D	5962-9099301MPC	CLC505A8B (qual)	5962-9099301MPA
CLC520A8D	5962-9169401MCC	CLC520A8B (qual)	5962-9169401MCA
CLC522A8D	5962-9451701MCC	CLC522A8B (qual)	5962-9451701MCA
CLC532A8D	5962-9203501MCC	CLC532A8B	5962-9203501MCA
Customer Specific Products			
CL114S01D			
CL400S01F CL400S09D			
CL401S05D CL404S02D			
CL409S01D			
CL412S01D			

CL415S01D			
CL420S01D CL420S02D CL420S03D			
CL425S01D CL425S02D			
CL426S01D			
CL505S12D			
CL532S01D CL532S02D			
CLC404801F			

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97028 **Issued: 10.09.97**

GIDEP Nr: AH6-C-97-19	**GIDEP Category:** PCN	**TRB Nr:** 93

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):

Logic Families: AC, ACT, ACQ, ACTQ, FCT & SCAN PRODUCTS

Proposed Date of Change:

OCTOBER 15, 1997

Description of Change:

Under the provisions of MIL-PRF-38535, National Semiconductor has moved the process flow location of 100% and group "A" AC/DC testing at 125C temperature on the following logic families: AC, ACT, ACQ, ACTQ, FCT & SCAN logic products.

This change does NOT apply to MLS FACT devices with specific customer drawing requirements. This change also does NOT apply to JAN S or QML V devices.

This process modification was fully qualified and approved by the National Semiconductor Technology Review Board.

Effect of Change:

Beginning October 15, 1997, the 100% and Group "A" 125C AC/DC testing will be performed prior to burn-in for the listed product families. Group C Operating
Life testing will continue in the standard order.

In case of further questions please contact:

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European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

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PCN Administrator Tel: 408-721-4189

Email: sherry.dobbins@nsc.com

Other N.American contacts

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97029 **Issued: 12.09.97**

GIDEP Nr: AH6-C-97-20	**GIDEP Category:** PCN	**TRB Nr:**

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):

High Speed Dual Comparator (reference Table I)

Proposed Date of Change:

Datecode 9731 (July 1997) and after

Description of Change:

DBI from Silicon to Plated Kovar

National Semiconductor has successfully completed the qualification testing for the changing of Down Bond Interface Chip (DBI) from Silicon to Plated Kovar. Silicon was the National standard process used in our Singapore assembly process. Plated Kovar is the standard process used by the new assembly site AMKOR/ANAM where these devices are now assembled.

Materials changed from the aluminum surface of the existing DBI to a gold plate over nickel plate over the kovar base metal on the new DBI. The new system is from a material standpoint very similiar to existing H packages (TO-5)which is currently used for both Class B (M) and S (V) materials.

Effect of Change:

The quality, reliability, interchangeability and electrical performance of the device will not be adversely affected by this change.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
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N.America

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Other N.American contacts

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Mil/Aero Analog Eng. Manager
(408) 721-7231
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Other Ref:

Associated Notes / Table(s):

TABLE I

National Part Number	Standard Microcircuit Drawing
LM119J-QMLV	5962-9679801VCA
LM119J-SMD	8601401CA
LM119J-MLS	
LM119W-QMLV	5962-9679801VHA
LM119W-SMD	8601401HA
LM119W/883	
LM119WG/883	

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97030 **Issued: 18.09.97**

GIDEP Nr: AH6-D-98-01	**GIDEP Category:** DMSMS	**TRB Nr:**

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

Proposed Date of Change:

Lifetime buy purchase orders will be accepted until **SEPTEMBER 9, 1998**.

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 mature 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. Where no upgrade is available National has established aftermarket support.

Effect of Change:

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

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Other Ref:

Associated Notes / Table(s):

ALTERNATE SOURCE MANUFACTURER LEGEND:

NSC NATIONAL SEMICONDUCTOR
AD ANALOG DEVICES
REI ROCHESTER
TI TEXAS INSTRUMENTS
LTC LINEAR TECHNOLOGY
MAX MAXTOR

TABLE I

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
5962-9096601MRA	ADC0802LJ/883	AD5735D/883	AD
5962-9157801MXA	ADC1241CMJ/883	ADC12441CMJ/883	NSC
	CD4018BMJ-MIL		REI
	DM54LS00E/883	DM54LS00J/883	NSC
	DM54LS00W-MLS	DM54LS00J-MLS	NSC
	DM54LS00W/883	DM54LS00J/883	NSC
	DM54LS04W-MLS	DM54LS04J/883	NSC
	DM54LS05J-MLS		REI
	DM54LS10J/883	54F10DMQB.	NSC
	DM54LS10W-MLS	JD54F10SDA	NSC
	DM54LS10W/883	54F10FMQB	NSC
	DM54LS11J/883	54F11DMQB	NSC
	DM54LS11W/883	54F11FMQB	NSC
	DM54LS138W-MLS	JD54F138SFA	NSC
	DM54LS15W-MLS		REI
	DM54LS151E/883	54F151ALMQB	NSC
	DM54LS151J/883	54F151ADMQB	NSC
	DM54LS151W/883	54F151AFMQB	NSC
	DM54LS153J/883	54F153DMQB	NSC
	DM54LS153W/883	54F153FMQB	NSC
	DM54LS157J/883	54F157ADMQB	NSC
	DM54LS157W/883	54F157AFMQB	NSC
	DM54LS158E/883	54ACT158LMQB	NSC
	DM54LS158J/883	54F158ADMQB	NSC
	DM54LS164W/883	DM54LS164J/883	NSC
	DM54LS165W-MLS		REI
	DM54LS165W/883	DM54LS165J/883	NSC
	DM54LS169AW-MLS	54F169FMQB	NSC
	DM54LS174E/883	DM54LS174J/883	NSC
	DM54LS174W-MLS	JD54F174SFA	NSC
	DM54LS175E/883	DM54LS175J/883	NSC
	DM54LS175W-MLS	54F175FM-MLS	NSC
	DM54LS193W-MLS	DM54LS193W/883	NSC
	DM54LS195AW-MLS	DM54LS195AJ-MLS	NSC
	DM54LS20J/883	54F20DMQB	NSC
	DM54LS20W-MLS	JD54F20SDA	NSC
	DM54LS20W/883	54F20FMQB	NSC
	DM54LS21J/883		REI
	DM54LS244W/883	DM54LS244J/883	NSC
	DM54LS251J/883	54F251ADMQB	NSC
	DM54LS251W/883	54F251AFMQB	NSC
	DM54LS258AJ-MLS	JD54F258SEA	NSC
	DM54LS258AJ/883	54F258ADMQB	NSC
	DM54LS258AW/883	54F258AFMQB	NSC
	DM54LS259E/883	DM54LS259J/883	NSC
	DM54LS259W/883	DM54LS259J/883	NSC

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
	DM54LS26W-MLS	DM54LS26J-MLS	NSC
	DM54LS260W/883	DM54LS260J/883	NSC
	DM54LS273E/883	DM54LS273J/883	NSC
	DM54LS279W-MLS	DM54LS279W/883	NSC
	DM54LS283J/883	54F283DMQB	NSC
	DM54LS283W-MLS	JD54F283SFA	NSC
	DM54LS283W/883	54F283FMQB	NSC
	DM54LS30J/883	SNJ5430J	REI
	DM54LS30W-MLS		REI
	DM54LS30W/883	SNJ5430W	REI
	DM54LS32W/883	DM54LS32J/883	NSC
	DM54LS365AJ/883	DM54LS365AW/883	NSC
	DM54LS365AW-MLS	DM54LS365W/883	NSC
	DM54LS368AJ/883	DM54LS368AE/883	NSC
	DM54LS368AW/883	DM54LS368AE/883	NSC
	DM54LS374J-MLS	JD54F374SRA	NSC
	DM54LS377J-MLS	DM54LS377E/883	NSC
	DM54LS377J/883	DM54LS377E/883	NSC
	DM54LS42W-MLS	DM54LS42W/883	NSC
	DM54LS502J-MLS	DM54LS502J/883	NSC
5962-9080001MFA	DM54LS502W/883	DM54LS502J/883	NSC
	DM54LS503J/883		NONE
	DM54LS670W-MLS		REI
	DM54LS73J/883	SNJ5473AJ	REI
	DM54LS73W/883	SNJ5473AW	REI
	DM54LS85J/883	SNJ43LS85W	REI
	DM54LS85W/883	SNJ43LS85W	REI
	DM54LS86J/883	JD54LS86BCA	NSC
	DM54LS93W-MLS		REI
	DM54L00W-MLS		REI
	DM54L00W/883		REI
	DM54L72J/883	DM54L72W/883	NSC
	DM54L93W/883	DM54L93J/883	NSC
	DM5401J/883	DM5401W/883	NSC
	DM5402J/883	54F02DMQB	NSC
	DM5402W/883	54F02FMQB	NSC
	DM5406W/883	DM5406J/883	NSC
	DM5409J/883	JD5409BCA	NSC
	DM5410J/883	JD5410BCA	NSC
	DM5410W/883	JD5410BDA	NSC
	DM54121J/883	JD54121BCA	NSC
	DM54122J/883	SNJ54122J	REI
	DM54125J/883		NONE
	DM54125W/883		NONE
	DM54151AW/883	JD54151BFA	NSC
	DM54153J/883	JD54153BEA	NSC
	DM54157W/883	54F157AFMQB	NSC
	DM5416J-MIL	JD5416BCA	NSC
	DM54165W/883	DM54LS165J/883	NSC
	DM5417W/883	JD5417BDA	NSC
	DM54173W/883	SNJ5473W	REI
	DM54174W/883	JD54174BFA	NSC

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
	DM54175J/883	JD54175BEA	NSC
	DM54175W/883	JD54175BFA	NSC
	DM54180J/883	JD54180BCA	NSC
	DM54180W/883	JD54180BDA	NSC
	DM54191J/883	54F191DMQB	NSC
	DM54191W/883	54F191FMQB	NSC
	DM54194W/883	JD54194BFA	NSC
	DM5420J/883	JD5420BCA	NSC
	DM54279J/883	DM54LS279J/883	NSC
	DM54279W/883	DM54LS279W/883	NSC
	DM54283J/883	54F283DMQB	NSC
	DM54298J/883	SNJ54298J	REI
	DM54298W/883	SNJ54298W	REI
	DM5437J/883	JD5437BCA	NSC
	DM5437W/883	JD5437BDA	NSC
	DM5438J/883		NONE
	DM5438W/883		NONE
	DM5447AJ-MIL	JD5447BEA	NSC
	DM5476J/883	SNJ5476J	REI
	DM5476W/883		REI
	DM5483AJ/883	JD5483BEA	NSC
	DM5486J/883	JD5486BCA	NSC
	DM5490J/883	DM5490W/883	NSC
	DM5495J-MIL	JD5495BCA	NSC
	DM5497J/883		REI
	DM5497W/883		REI
	DM9300J/883	DM5400J/883	NSC
	DM9300W/883	DM5400W/883	NSC
	DM9312W/883		REI
	DM9316W/883	JD5416BDA	NSC
	DM9321J/883		REI
	DM9322J/883	JD9322BEA	NSC
	DM9322W/883	JD9322BFA	NSC
	DM9338W/883	DM5438J/883	NSC
	DM9348J-MIL	DM9348J/883	NSC
	DP7311J/883		REI
	DS0026G-MIL		REI
	DS0026G-MLS		REI
7800802GA	DS0026H-SMD		REI
	DS0026H/883		REI
	DS0026J-MLS		REI
7800802CA	DS0026J-SMD		REI
	DS0026J/883		REI
5962-8863101GA	DS1631H/883		REI
5962-8863101PA	DS1631J-8/883		REI
5962-9052201GA	DS1632H-SMD		REI
	DS1632H/883		REI
5962-9052201PA	DS1632J-8-SMD		REI
	DS1632J-8/883		REI
	DS1634H/883		REI
5962-8982101PA	DS1634J-8-SMD		REI
	DS1634J-8/883		REI
	DS1679J-MIL		REI

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
	DS26C31MJ-MLS	DS26C31MJ/883	NSC
	DS26C31MW-MLS	DS26C31MW/883	NSC
	DS26C32AMJ-MLS	DS26C32AMJ/883	NSC
	DS26C32AMW-MLS	DS26C32AMW/883	NSC
	DS26F32MJ-MLS	DS26F32MJ/883	NSC
	DS26LS32AMW-MLS	DS26LS32AMW/883	NSC
	DS26LS33MW/883	DS26LS33MJ/883	NSC
	DS55122J/883	SNJ55122J	REI TI
	DS76S10J/883	DS86S10J	NSC
	DS78LS120W-MLS	DS78120W/883	NSC
	DS7820AJ-MLS	DS7820AJ-SMD	NSC
7900801DA	DS7820AW-SMD	DS7820AJ-SMD	NSC
	DS7820AW/883	DS7820AJ-SMD	NSC
	DS7830F-MLS	DS7830W/883	NSC
	DS7830J-MLS	DS7830J/883	NSC
	DS7831W/883	DS7831W-SMD	NSC
	DS9615MW/883	JD55115BFA	NSC
	DS9616HMJ-MIL	DS9616HMJ/883	NSC
5962-8752201AA	DS9622MW/883	DS9622MJ/883	NSC
	DS9667MJ/883	DS2003MJ	NSC
JM38510/33301SDA	JD54F02SDA	JD54F02SCA	NSC
JM38510/33902SEA	JD54F153SEA	JD54F153SFA	NSC
JM38510/33903SEA	JD54F157SEA	JD54F157SFA	NSC
JM38510/33904BEA	JD54F158BEA	54F158ADMQB	NSC
JM38510/33904BFA	JD54F158BFA	54F158AFMQB	NSC
JM38510/33904B2A	JD54F158B2A	54F158ALMQB	NSC
JM38510/34401BEA	JD54F160BEA	54F160ADMQB	NSC
JM38510/34401B2A	JD54F160B2A	54F160ALMQB	NSC
JM38510/33907BFA	JD54F258BFA	54F160AFMQB	NSC
JM38510/35001BSA	JD54F398BSA	54F398FMQB	NSC
JM38510/34106BSA	JD54F534BSA	54F534FMQB	NSC
JM38510/34603BRA	JD54F563BRA	54F563DMQB	NSC
JM38510/33401SCA	JD54F64SCA	JD54F64BCA	NSC
JM38510/30001B2A	JD54LS00B2A	JD54F00B2A	NSC
JM38510/30301B2A	JD54LS02B2A	JD54F02B2A	NSC
JM38510/30002B2A	JD54LS03B2A	JD54F03BCA	NSC
JM38510/30701B2A	JD54LS138B2A	JD54F138B2A	NSC
JM38510/30702B2A	JD54LS139B2A	JD54F139B2A	NSC
JM38510/30903SFA	JD54LS157SFA	JD54F157SFA	NSC
JM38510/30904B2A	JD54LS158B2A	JD54F158BEA	NSC
JM38510/31504BEA	JD54LS161ABEA	JD54LS161BEA	NSC
JM38510/30601BFA	JD54LS194BFA	JD54F194BFA	NSC
JM38510/30601SFA	JD54LS194SFA	JD54LS194SEA	NSC
JM38510/30007BCA	JD54LS20BCA	JD54F20BCA	NSC
JM38510/30007BDA	JD54LS20BDA	JD54F20BDA	NSC
JM38510/30007SCA	JD54LS20SCA	JD54F20SCA	NSC
JM38510/31003BCA	JD54LS21BCA		NONE
JM38510/31003BDA	JD54LS21BDA		NONE
JM38510/32402BRA	JD54LS241BRA	JD54F241BRA	NSC
JM38510/32402BSA	JD54LS241BSA	JD54F241BSA	NSC
JM38510/30905SEA	JD54LS251SEA	JD54F251SEA	NSC
JM38510/30908BEA	JD54LS253BEA	JD54F253BEA	NSC
JM38510/30908BFA	JD54LS253BFA	JD54F253BFA	NSC
JM38510/30908B2A	JD54LS253B2A	JD54F253B2A	NSC
JM38510/30906B2A	JD54LS257B2A	JD54F257B2A	NSC
JM38510/30302SDA	JD54LS27SDA	DM54LS27W/883	NSC
JM38510/31602BFA	JD54LS279BFA	DM54LS279W/883	NSC
JM38510/31602B2A	JD54LS279B2A	DM54LS279E/883	NSC
JM38510/30009B2A	JD54LS30B2A	JD54LS30BCA	NSC
JM38510/30501B2A	JD54LS32B2A	JD54F32B2A	NSC

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
JM38510/32203SFA	JD54LS367SFA	DM54LS367AW/883	NSC
JM38510/32204B2A	JD54LS368B2A	JD54LS368BEA	NSC
JM38510/30401BCA	JD54LS51BCA		REI TI
JM38510/30401BDA	JD54LS51BDA		REI TI
JM38510/30401B2A	JD54LS51B2A		REI TI
JM38510/30402BDA	JD54LS54BDA		REI TI
JM38510/31201BEA	JD54LS83BEA		REI
JM38510/31201BFA	JD54LS83BFA		REI
JM38510/31101BFA	JD54LS85BFA		REI
JM38510/31101B2A	JD54LS85B2A		REI
JM38510/31101SEA	JD54LS85SEA		REI
JM38510/30502B2A	JD54LS86B2A	JD54F86B2A	NSC
JM38510/02004BDA	JD54L00BDA		NONE
JM38510/02004SDA	JD54L00SDA	DM54L00J/883	NSC
JM38510/02005SDA	JD54L04SDA	JD54L04SCA	NSC
JM38510/01602BDA	JD5409BDA	JD5409BCA	NSC
JM38510/00804BDA	JD5417BDA	JD5417BCA	NSC
JM38510/00303BCA	JD5438BCA		NONE
JM38510/00303BDA	JD5438BDA		NONE
JM38510/01007BEA	JD5447BEA		NONE
JM38510/00901BCA	JD5495BCA		NONE
JM38510/00901BDA	JD5495BDA		NONE
JM38510/10401BDA	JD55107BDA	SNJ55107AW	REI TI
JM38510/03005BCA	JD9962BCA	962DMQB	NSC
JM38510/03005BDA	JD9962BDA	962FMQB	NSC
JM38510/10107SHA	JL118SHA	JL118SGA	NSC
JM38510/11502SXA	JL120-12SXA		LTC
JM38510/10708SYA	JL140-15SYA		LTC
JM38510/10201BCA	JL723BCA	LM723J/883	NSC
JM38510/05202BDA	JM4001ABDA	JM4001ABCA	NSC
JM38510/05202BDA	JM4001BBDA	JM4001BBCA	NSC
JM38510/05603BFA	JM4020ABFA	JM4020ABEA	NSC
JM38510/05704BEA	JM4021ABEA		NONE
JM38510/05604BEA	JM4022ABEA	JM4022ABFA	NSC
JM38510/05003BDA	JM4023ABDA	JM4023ABCA	NSC
	LF198H-MLS	JL198SGA	NSC
5962-8950305GA	LMC555H/883	LMC555J/883	NSC
5962-9153301M2A	LMF100AE/883		LTC
5962-9153301MRA	LMF100AJ/883	LT1164-5MJ	LTC
5962-9096801MCA	LMF90CMJ/883		MAX
	LM101AH-MLS	JL101ASGA	NSC
	LM106H-MLS	LM106H/883	NSC
	LM106W/883	LM106H/883	NSC
	LM118J-MLS	JL118SCA	NSC
	LM118W-MLS	JL118SHA	NSC
	LM120H-15-MLS	JL120-15SXA	NSC
	LM120K-12-MLS	LM120K-12/883	NSC
	LM120K-5.0-MLS	JL120-5SYA	NSC
	LM124AD-MLS	JL124ASCA	NSC
	LM124AJ-MLS	JL124ASCA	NSC
	LM124J-MLS	JL124SCA	NSC
	LM125H-MLS		REI
	LM125H/883		REI
	LM126H-MLS		REI
5962-8993001MIA	LM126H/883		REI
	LM136AH-5.0-MLS	LM136AH-5.0-SMD	NSC
	LM140AK-15-MLS	LM140AK-15/883	NSC
	LM140K-12-MLS	JL140-12SYA	NSC
	LM140LAH-15-MLS	LM140LAH-15/883	NSC

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
	LM140LAH5.0-MLS	LM140LAH5.0/883	NSC
5962-8958601GA	LM1578H/883	LM1578AH/883	NSC
5962-9456101MGA	LM169H/883		AD REI
5962-8856102XA	LM199H-SMD	LM199H/883	NSC
	LM555J-MLS	JL555SPA	NSC
5962-9300301M2A	LM613AME/883	LM613AMJ/883	NSC
	LM615AMJ/883		REI
	LM709W/883	LM709AW/883	NSC
	LM723J-MLS	JL723SCA	NSC
	LM741AJ-14/883	JL741BCA	NSC
	MM54C00W/883	MM54C00J/883	NSC
	MM54C14W/883	MM54C14J/883	NSC
	MM54C174W/883	MM54C174J/883	NSC
	MM54C193J/883	MM54C193W/883	NSC
	MM54C30J/883		REI
	MM54C30W/883		REI
	MM54C42W/883	MM54C42J/883	NSC
	MM54C85W/883	MM54C85J/883	NSC
	MM54C906W/883	MM54C906J/883	NSC
	MM54C914W/883	MM54C914J/883	NSC
	MM5452D-MIL	MM5452N	NSC
	MM70C97W/883	MM70C97J/883	NSC
	MM70C98W/883	MM70C98J/883	NSC
	RMLM113-1H-MLS	LM113-1H-QMLV	NSC
	54F08LM-MLS	JD54F08SDA	NSC
	54F138FM-MLS	JD54F138SFA	NSC
	54F138LM-MLS	JD54F138SFA	NSC
	54F139LM-MLS	JD54F139SFA	NSC
	54F158AFMQB.	54ACT158FMQB	NSC
	54F160ALMQB.	JD54F160BEA	NSC
	54F161AFMQB.	54ACT161DMQB	NSC
	54F163AFMQB.	JD54F163BFA	NSC
	54F175FM-MLS	54F175FMQB	NSC
	54F181FM-MIL	JD54F181BLA	NSC
	54F181FMQB.	JD54F181BLA	NSC
	54F182FM-MIL	54F182FMQB	NSC
	54F182LMQB.	JD54F182B2A	NSC
	54F190LMQB.	54F190FMQB.	NSC
	54F194DM-MIL	54F194DMQB.	NSC
	54F194LM-MIL	54F194LMQB.	NSC
	54F240DM-MIL	54ABT240J-QML	NSC
	54F240DMQB.	54ABT240J-QML	NSC
	54F240FM-MIL	54ABT240W-QML	NSC
	54F240FMQB.	54ABT240W-QML	NSC
	54F240LM-MIL	54ABT240E-QML	NSC
	54F240LMQB.	54ABT240E-QML	NSC
	54F241DMQB.	JD54F241BRA	NSC
	54F241FMQB.	JD54F241BSA	NSC
	54F241LMQB.	JD54F241B2A	NSC
	54F243DMQB.		REI
	54F243FMQB.		REI
	54F32LM-MLS	JD54F32DA	NSC
5962-8607401SA	54F322FMQB.	54F322DMQB	NSC
	54F323DMQB.	54F323FMQB.	NSC
5962-8855501FA	54F378LMQB.	54F378FMQB.	NSC
	54F38DM-MLS	JD54F38SCA	NSC

TABLE I (Continued)

STANDARD MILITARY DWG. OR SLASHSHEET	NATIONAL PART NUMBER	ALTERNATE P/N	ALTERNATE SOURCE
	54F399FMQB.	JD54F399BFA	NSC
	54F521FMQB.	JD54F521BSA	NSC
	54F540DMQB.	JD54F540BRA	NSC
	54F540FMQB.	JD54F540BSA	NSC
	54F544DMQB.	54F544SDMQB.	NSC
5962-9173801MSA	54F573FMQB.	JD54F573BSA	NSC
	54F574FMQB.	54ABT574W-QML	NSC
	54F574LMQB.	54ABT574E-QML	NSC
	54F64FMQB.	JD54F64BDA	NSC
5962-8953501KA	54F657FMQB.		REI
5962-89535013A	54F657LMQB.		REI
5962-8953501LA	54F657SDMQB.		REI
	54F676LMQB.	54F676FMQB.	NSC
	54F825FMQB.	54F825LMQB.	NSC
	9093DMQB.		REI
	93L08DMQB.	93L08FMQB	NSC
	93L28FMQB.	93L28DMQB	NSC
	93L38DMQB.	93L38FMQB	NSC
	930DMQB.	JD9930BCA	NSC
	930FMQB.	JD9930BDA	NSC
	944DMQB.	JD9944BCA	NSC
	944FMQB.	JD9944BDA	NSC
	949FMQB.		REI

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97031 **Issued: 22.09.97**

GIDEP Nr: AH6-C-97-21	**GIDEP Category:** PCN	**TRB Nr:**

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):

CMOS Hex Inverter
MM54CO4J/883
MM54C04W/883
CD4069AMJ/883
CD4069MJ/883
CD4069MW/883

Proposed Date of Change:

Datecode 9733 and after
(August 1997)

Description of Change:

Wafer Fabrication Transfer

National Semiconductor has completed the qualification testing for the wafer fabrication transfer of this product from National's Greenock, Scotland facility to the Fairchild South Portland,Maine facility.

The die revision (revision D) and die size (41 x 41 mils) remain unchanged. This die type is used for all the device types listed above.

The metal step coverage and metal thickness remain unchanged.
However, there were some wafer fabrication process changes as stated below:

	Greenock,Scotland	South Portland, Maine
1.) P+ Diffusion	BCL3	B+
2.) Metalization	Al 1% Si	AL 0.3% Cu (no barrier metals)
3.) Passivation	Bi-layer passivation layer of 8.7K A 3% PSG (Phosph Silicate Glass) capped with a 10K layer of SiN(Silicon Nitride)	Single layer of 10K A of SiN(Silicon Nitride) with a post of H2 alloy

Effect of Change:

All current device specifications, performance, and characteristics will remain unchanged. Product reliability and quality performance will be equivalent to current levels.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

QA/Spec Control	Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre	Tel: +49 (0)180 530 8585 (German)
	Tel: +49 (0)180 532 7832 (English)
	Email: europe.support@nsc.com
European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center	Tel: 1-800-272-9959
	Email: support@nsc.com
QA	Tel: 408-721-5649
PCN Administrator	Tel: 408-721-4189
	Email: sherry.dobbins@nsc.com

Other N.American contacts

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97032 **Issued: 06.10.97**

GIDEP Nr: AH6-D-98-03	**GIDEP Category:** DMSMS	**TRB Nr:**

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):

Real Time Clock Device

Military Product	**Recommended replacement**
DP8572AME/883	DP8572AV
DP8572AMD/883	DP8572AN
5962-9164101MJA	DP8572AN

Proposed Date of Change:

Immediately (September 1997)

Description of Change:

Product Obsolescence

National Semiconductor's Military/Aerospace Division regretfully announces the obsolescence of our DP8572 Real Time Clock Device effective immediately.

Effect of Change:

Due to the low volume and poor manufacturing yield of this device, we are unable to justify a possible redesign to fix the problem. In addition, we are unable to offer a Last Time Buy for this device because of the poor yields.

National Semiconductor regrets any inconvenience this may cause our customers.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center	Tel: 1-800-272-9959
	Email: support@nsc.com
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	Email: sherry.dobbins@nsc.com

Other N.American contacts

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National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97033 **Issued: 23.10.97**

GIDEP Nr: AH6-C-98-01	**GIDEP Category:** PCN	**TRB Nr:**

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):

Interface Product (reference Table I)

Proposed Date of Change:

Datecode 9734 (August 1997) and after

Description of Change:

DBI from Silicon to Plated Kovar

National Semiconductor has successfully completed the qualification testing for the changing of Down Bond Interface Chip (DBI) from Silicon to Plated Kovar. Silicon was the National standard process used in our Singapore assembly process. Plated Kovar is the standard process used by the new assembly site AMKOR/ANAM where these devices are now assembled.

Materials changed from the aluminum surface of the existing DBI to a gold plate over nickel plate over the kovar base metal on the new DBI. The new system is from a material standpoint very similiar to existing H packages (TO-5)which is currently used for both Class B (M) and S (V) materials.

Effect of Change:

The quality, reliability, interchangeability and electrical performance of the device will not be adversely affected by this change.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center Tel: 1-800-272-9959
Email: support@nsc.com
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Email: sherry.dobbins@nsc.com

Other N.American contacts

Assefa Nedi
Mil/Aero Interface Product Eng.
(207)541-8187
email: assefa.nedi@nsc.com

Other Ref:

Associated Notes / Table(s):

TABLE I:

National Part Number	Standard Microcircuit Drawing	Product Description
DS26C31MJ/883	5962-9163901MEA	CMOS Quad TRI-STATE Differential Line Driver
DS26C31ME/883	5962-9163901M2A	
DS26C31MW/883	5962-9163901MFA	
DS26C32AMJ/883	5962-9164001MEA	CMOS Quad TRI-STATE Differential Line receiver
DS26C32AME/883	5962-9164001M2A	
DS26C32AMW/883	5962-9164001MFA	
DS3886AW/883	5962-9554201QXA	BTL 9 Bit Latching Data Transceiver

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97034 **Issued: 10/30/97**

GIDEP Nr: AH6-C-98-02	**GIDEP Category:** PCN	**TRB Nr:** 130

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):

Comlinear Analog Products - See Table I
Comlinear Die Products - See Table II

Additionally, all applicable Source Control drawings (Levels B & S)

Proposed Date of Change:

Die Products (Table II) - December 1997
Packaged devices (Table I) - January 1998

Description of Change:

Transfer of Assembly and Test operations from Comlinear facilities, an acquisition of National Semiconductor, to existing National Semiconductor facilities. Assembly transfers from Pantronix, San Jose, CA to AMKOR/ANAM Philippines. Test transfers from Comlinear Fort Collins, Colorado to National Semiconductor Singapore. Transfer of Die Products processing from Comlinear Fort Collins and Pantronix to National Semiconductor Maine. Die Attach changes from Gold Eutectic to Silver Glass. Comlinear has previously qualified silver glass die attach, but has not implemented production.
Some minor changes to internal package elements will be made to accommodate the change in die attach materials. These will include removal of gold cavity surfaces and addition of down bond chip interfaces as needed.

Both AMKOR/ANAM Philippines and National Semiconductor Singapore are National QML approved facilities for assurance levels Q, B, S and V.

National will conduct qualification testing in accordance with MIL-PRF-38535. All products will meet both our quality standards and all applicable government standards and specifications.

Upon completion of the transfers, the packaged part marking will change from the Comlinear logo to the National Semiconductor logo. The die labeling will change from the Comlinear Logo to the National Semiconductor logo.

The cage code for Comlinear was 62839 and will be changing to National Semiconductor's cage code of 27014.

Effect of Change:

The quality, reliability, interchangeability and performance will not be significantly effected by this transfer.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

QA/Spec Control	Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre	Tel: +49 (0)180 530 8585 (German)
	Tel: +49 (0)180 532 7832 (English)
	Email: europe.support@nsc.com
European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center	Tel: 1-800-272-9959
	Email: support@nsc.com
QA	Tel: 408-721-5649
PCN Administrator	Tel: 408-721-4189
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Other N.American contacts

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Mil/Aero Die Products Eng.
(207)541-8933
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Other Ref:

Associated Notes / Table(s):

TABLE I

PART NUMBER	STD. MICROCIRCUIT DWG.	PACKAGE
CLC109A8B		8 PIN CERDIP
CLC110A8B	5962-8997501PA	8 PIN CERDIP
CLC111A8B		8 PIN CERDIP
CLC114A8B	5962-9233901MCA	14 PIN CERDIP
CLC114A8L-2	5962-9233901M2A	20 PIN LCC
CLC115A8B		14 PIN CERDIP
CLC400A8B	5962-8997001PA	8 PIN CERDIP
CLC400A8L-2A	5962-89970012A	20 PIN LCC
CLC401A8B	5962-8997301PA	8 PIN CERDIP
CLC402A8B	5962-9203301MPA	8 PIN CERDIP
CLC404A8B		8 PIN CERDIP
CLC405A8B		8 PIN CERDIP
CLC406A8B	5962-9200401MPA	8 PIN CERDIP
CLC409A8B		8 PIN CERDIP
CLC409A8L-2	5962-9203401M2A	20 PIN LCC
CLC410A8B	5962-9060001PA	8 PIN CERDIP
CLC411A8B	5962-9456601MPA	8 PIN CERDIP
CLC412A8B	5962-9471901MPA	8 PIN CERDIP
CLC412A8L-2A	5962-9471901M2A	20 PIN LCC
CLC414A8B	5962-9169301MCA	14 PIN CERDIP
CLC414A8L-2A	5962-9169301M2A	20 PIN LCC
CLC415A8B	5962-9305501MCA	14 PIN CERDIP
CLC420A8B	5962-9175801MPA	8 PIN CERDIP
CLC420A8L-2A	5962-9175801M2A	20 PIN LCC
CLC420B8B	5962-9175802MPA	8 PIN CERDIP
CLC420B8L-2A	5962-9175802M2A	20 PIN LCC
CLC425A8B	5962-9325901MPA	8 PIN CERDIP
CLC426A8B	5962-9459701MPA	8 PIN CERDIP
CLC428A8B	5962-9470801MPA	8 PIN CERDIP
CLC430A8B	5962-9203001MPA	8 PIN CERDIP
CLC430A8L-2A	5962-9203001M2A	20 PIN LCC
CLC431A8B	5962-9472501MCA	14 PIN CERDIP
CLC431A8L-2A	5962-9472501M2A	20 PIN LCC
CLC432A8B	5962-9472502MPA	8 PIN CERDIP
CLC440A8B		8 PIN CERDIP
CLC446A8B		8 PIN CERDIP
CLC449A8B		8 PIN CERDIP
CLC452A8B		8 PIN CERDIP
CLC501A8B	5962-8997401PA	8 PIN CERDIP
CLC502A8B	5962-9174301MPA	8 PIN CERDIP
CLC502A8L-2A	5962-9174301M2A	20 PIN LCC
CLC505A8B		8 PIN CERDIP
CLC520A8B		14 PIN CERDIP
CLC522A8B		14 PIN CERDIP
CLC522A8L-2A	5962-9451701M2A	20 PIN LCC
CLC532A8B	5962-9203501MCA	14 PIN CERDIP
CLC532A8L-2A	5962-9203501M2A	20 PIN LCC
CLC533A8B	5962-9320301MEA	16 PIN CERDIP
CLC533A8L-2A	5962-9320301M2A	20 PIN LCC

TABLE II

COMMERCIAL DIE PRODUCTS	MILITARY DIE PRODUCTS
CLC109ALC	CLC109AMC
CLC110ALC	CLC110AMC
CLC111ALC	CLC111AMC
CLC114ALC	CLC114AMC
CLC115ALC	CLC115AMC
CLC400ALC	CLC400AMC
CLC401ALC	CLC401AMC
CLC402ALC	CLC402AMC
CLC404ALC	CLC404AMC
CLC405ALC	CLC405AMC
CLC406ALC	CLC406AMC
CLC407ALC	CLC407AMC
CLC409ALC	CLC409AMC
CLC410ALC	CLC410AMC
CLC411ALC	CLC411AMC
CLC412ALC	CLC412AMC
CLC414ALC	CLC414AMC
CLC415ALC	CLC415AMC
CLC420ALC	CLC420AMC
CLC425ALC	CLC425AMC
CLC426ALC	CLC426AMC
CLC428ALC	CLC428AMC
CLC430ALC	CLC430AMC
CLC431ALC	CLC431AMC
CLC432ALC	CLC432AMC
CLC440ALC	CLC440AMC
CLC446ALC	CLC446AMC
CLC449ALC	CLC449AMC
CLC452ALC	CLC452AMC
CLC501ALC	CLC501AMC
CLC502ALC	CLC502AMC
CLC505ALC	CLC505AMC
CLC520ALC	CLC520AMC
CLC522ALC	CLC522AMC
CLC532ALC	CLC532AMC
CLC533ALC	CLC533AMC

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97034A **Issued: 11/24/97**

GIDEP Nr: AH6-C-98-02A	**GIDEP Category:** PCN	**TRB Nr:** 130

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):

Comlinear Analog Products - See Table I
Comlinear Die Products - See Table II

Additionally, all applicable Source Control drawings (Levels B & S)

Proposed Date of Change:

Die Products (Table II) - December 1997
Packaged devices (Table I) - January 1998

Description of Change:

THIS AMENDMENT IS BEING ISSUED TO EXPLAIN THE REVISED DEVICE PART MARKING.

REFERENCE THE ** PARAGRAPH IN THE DESCRIPTION OF CHANGE SECTION, THE REVISED TABLE I AND ADDITIONAL FIGURES 1 AND 2.

Transfer of Assembly and Test operations from Comlinear facilities, an acquisition of National Semiconductor, to existing National Semiconductor facilities. Assembly transfers from Pantronix, San Jose, CA to AMKOR/ANAM Philippines. Test transfers from Comlinear Fort Collins, Colorado to National Semiconductor Singapore. Transfer of Die Products processing from Comlinear Fort Collins and Pantronix to National Semiconductor Maine. Die Attach changes from Gold Eutectic to Silver Glass. Comlinear has previously qualified silver glass die attach, but has not implemented production.
Some minor changes to internal package elements will be made to accommodate the change in die attach materials. These will include removal of gold cavity surfaces and addition of down bond chip interfaces as needed.

Both AMKOR/ANAM Philippines and National Semiconductor Singapore are National QML approved facilities for assurance levels Q, B, S and V.

National will conduct qualification testing in accordance with MIL-PRF-38535. All products will meet both our quality standards and all applicable government standards and specifications.

**As part of this transfer activity, the generic Comlinear part number package codes and military suffix will change to standardize to National's package

codes and military suffix of -QML. (Reference Table I for specific part number changes)

- All devices that are tested to a Standard Military Drawing (SMD) will now be dual marked with the SMD number (5962-) and the newly created National part number ending in -QML.(Reference Figure 1) National is requesting that customers order all SMD devices using the SMD part number.
- Devices not tested to a SMD will be dual marked with the original Comlinear part number and the new National part number. (Reference Figure 2)

Upon completion of the transfers,the packaged part marking will change from the Comlinear logo to the National Semiconductor logo. The die labeling will change from the Comlinear Logo to the National Semiconductor logo.

The cage code for Comlinear was 62839 and will be changing to National Semiconductor's cage code of 27014.

Effect of Change:

The quality, reliability, interchangeability and performance will not be significantly effected by this transfer.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

QA/Spec Control	Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre	Tel: +49 (0)180 530 8585 (German)
	Tel: +49 (0)180 532 7832 (English)
	Email: europe.support@nsc.com
European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center	Tel: 1-800-272-9959
	Email: support@nsc.com
QA	Tel: 408-721-5649
PCN Administrator	Tel: 408-721-4189
	Email: sherry.dobbins@nsc.com

Other N.American contacts

Larry McGee
Mil/Aero Analog Eng. Mgr
(408) 721-7231

Dennis Twomey
Mil/Aero Die Products Eng.
(207)541-8933

Other Ref:

Associated Notes / Table(s):

TABLE I			
COMLINEAR PART NUMBER	NATIONAL PART NUMBER	STD. MICROCIRCUIT DWG.	PACKAGE
CLC109A8B	CLC109AJ-QML		8 PIN CERDIP
CLC110A8B	CLC110AJ-QML	5962-8997501PA	8 PIN CERDIP
CLC111A8B	CLC111AJ-QML	5962-9687601MPA	8 PIN CERDIP
CLC114A8B	CLC114AJ-QML	5962-9233901MCA	14 PIN CERDIP
CLC114A8L-2	CLC114AE-QML	5962-9233901M2A	20 PIN LCC
CLC115A8B	CLC115AJ-QML		14 PIN CERDIP
CLC400A8B	CLC400AJ-QML	5962-8997001PA	8 PIN CERDIP
CLC400A8L-2A	CLC400AE-QML	5962-89970012A	20 PIN LCC
CLC401A8B	CLC401AJ-QML	5962-8997301PA	8 PIN CERDIP
CLC402A8B	CLC402AJ-QML	5962-9203301MPA	8 PIN CERDIP
CLC404A8B	CLC404AJ-QML	5962-9099401MPA**	8 PIN CERDIP
CLC405A8B	CLC405AJ-QML		8 PIN CERDIP
CLC406A8B	CLC406AJ-QML	5962-9200401MPA	8 PIN CERDIP
CLC409A8B	CLC409AJ-QML	5962-9203401MPA**	8 PIN CERDIP
CLC409A8L-2	CLC409AE-QML	5962-9203401M2A	20 PIN LCC
CLC410A8B	CLC410AJ-QML	5962-9060001PA	8 PIN CERDIP
CLC411A8B	CLC411AJ-QML	5962-9456601MPA	8 PIN CERDIP
CLC412A8B	CLC412AJ-QML	5962-9471901MPA	8 PIN CERDIP
CLC412A8L-2A	CLC412AE-QML	5962-9471901M2A	20 PIN LCC
CLC414A8B	CLC414AJ-QML	5962-9169301MCA	14 PIN CERDIP
CLC414A8L-2A	CLC414AE-QML	5962-9169301M2A	20 PIN LCC
CLC415A8B	CLC415AJ-QML	5962-9305501MCA	14 PIN CERDIP
CLC420A8B	CLC420AJ-QML	5962-9175801MPA	8 PIN CERDIP

CLC420A8L-2A	CLC420AE-QML	5962-9175801M2A	20 PIN LCC
CLC420B8B	CLC420BJ-QML	5962-9175802MPA	8 PIN CERDIP
CLC420B8L-2A	CLC420BE-QML	5962-9175802M2A	20 PIN LCC
CLC425A8B	CLC425AJ-QML	5962-9325901MPA	8 PIN CERDIP
CLC426A8B	CLC426AJ-QML	5962-9459701MPA	8 PIN CERDIP
CLC428A8B	CLC428AJ-QML	5962-9470801MPA	8 PIN CERDIP
CLC430A8B	CLC430AJ-QML	5962-9203001MPA	8 PIN CERDIP
CLC430A8L-2A	CLC430AE-QML	5962-9203001M2A	20 PIN LCC
CLC431A8B	CLC431AJ-QML	5962-9472501MCA	14 PIN CERDIP
CLC431A8L-2A	CLC431AE-QML	5962-9472501M2A	20 PIN LCC
CLC432A8B	CLC432AJ-QML	5962-9472502MPA	8 PIN CERDIP
CLC440A8B	CLC440AJ-QML	5962-9751801MPA *	8 PIN CERDIP
CLC446A8B	CLC446AJ-QML	5962-9751901MPA *	8 PIN CERDIP
CLC449A8B	CLC449AJ-QML	5962-9752001MPA *	8 PIN CERDIP
CLC452A8B	CLC452AJ-QML	5962-9752101MPA *	8 PIN CERDIP
CLC501A8B	CLC501AJ-QML	5962-8997401PA	8 PIN CERDIP
CLC502A8B	CLC502AJ-QML	5962-9174301MPA	8 PIN CERDIP
CLC502A8L-2A	CLC502AE-QML	5962-9174301M2A	20 PIN LCC
CLC505A8B	CLC505AJ-QML	5962-9099301MPA**	8 PIN CERDIP
CLC520A8B	CLC520AJ-QML	5962-9169401MCA**	14 PIN CERDIP
CLC522A8B	CLC522AJ-QML	5962-9451701MCA**	14 PIN CERDIP
CLC522A8L-2A	CLC522AE-QML	5962-9451701M2A	20 PIN LCC
CLC532A8B	CLC532AJ-QML	5962-9203501MCA	14 PIN CERDIP
CLC532A8L-2A	CLC532AE-QML	5962-9203501M2A	20 PIN LCC
CLC533A8B	CLC533AJ-QML	5962-9320301MEA	16 PIN CERDIP
CLC533A8L-2A	CLC533AE-QML	5962-9320301M2A	20 PIN LCC
		* = NEW SMD	** = PENDING SMD

TABLE II

COMMERCIAL DIE PRODUCTS	MILITARY DIE PRODUCTS
CLC109ALC	CLC109AMC
CLC110ALC	CLC110AMC
CLC111ALC	CLC111AMC
CLC114ALC	CLC114AMC
CLC115ALC	CLC115AMC
CLC400ALC	CLC400AMC
CLC401ALC	CLC401AMC
CLC402ALC	CLC402AMC
CLC404ALC	CLC404AMC
CLC405ALC	CLC405AMC
CLC406ALC	CLC406AMC
CLC407ALC	CLC407AMC
CLC409ALC	CLC409AMC
CLC410ALC	CLC410AMC
CLC411ALC	CLC411AMC
CLC412ALC	CLC412AMC
CLC414ALC	CLC414AMC
CLC415ALC	CLC415AMC
CLC420ALC	CLC420AMC
CLC425ALC	CLC425AMC
CLC426ALC	CLC426AMC
CLC428ALC	CLC428AMC
CLC430ALC	CLC430AMC
CLC431ALC	CLC431AMC
CLC432ALC	CLC432AMC
CLC440ALC	CLC440AMC
CLC446ALC	CLC446AMC
CLC449ALC	CLC449AMC
CLC452ALC	CLC452AMC
CLC501ALC	CLC501AMC
CLC502ALC	CLC502AMC
CLC505ALC	CLC505AMC
CLC520ALC	CLC520AMC
CLC522ALC	CLC522AMC
CLC532ALC	CLC532AMC
CLC533ALC	CLC533AMC

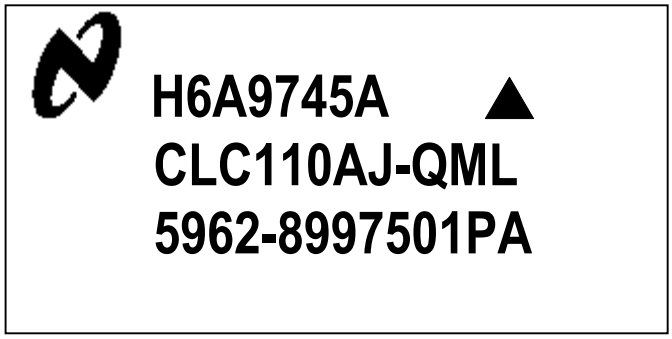

Figure 1
New NSC Marking for SMD Parts
Suggest Customer order as 5962-8997501PA

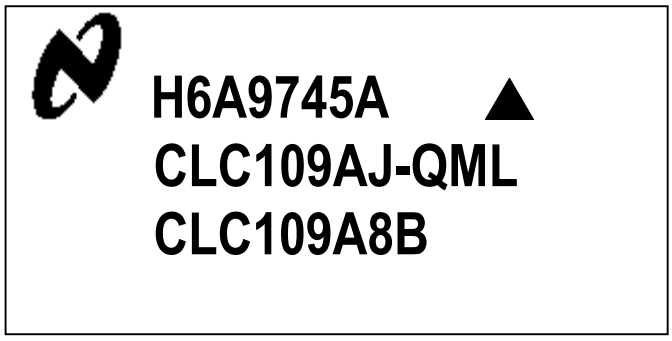

Figure 2
New NSC mark for “883” part.
Customer can order as CLC109A8B or CLC109AJ-QML

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97035 **Issued: 11/12/97**

GIDEP Nr: AH6-D-98-03/09/13	**GIDEP Category:** DMSMS	**TRB Nr:**

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):

Commercial Grade Ceramic Packaged Analog Products - See Table I

Proposed Date of Change:

November 1997

Description of Change:

National has previously notified you that the following commercial grade devices were being placed on obsolescence. We are **NOW** pleased to inform you that, effective immediately, the National Military Aerospace Division will continue to manufacture these commercial grade devices with their current databook commercial grade electricals and packaging.

Effect of Change:

They are immediately removed from the National obsolescence list.
Please contact your local sales office for pricing and availability.

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center Tel: 1-800-272-9959
Email: support@nsc.com
QA Tel: 408-721-5649
PCN Administrator Tel: 408-721-4189
Email: sherry.dobbins@nsc.com

Other N.American contacts

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

Other Ref:

Associated Notes / Table(s):

Table I

National Part Number	Description
LM101AJ	Operational Amplifier
LM119J	High Speed Dual Comparator
LM146J	Programmable Quad Operational Amplifier
LM219J	High Speed Dual Comparator
LM248J	Quad 741 Operational Amplifier
LM319J	High Speed Dual Comparator
LM348J	Quad 741 Operational Amplifier
LF147J	Wide Bandwidth Quad JFET Operational Amplifier
LM741J	Operational Amplifier
LM158J	Low Power Dual Operational Amplifier
LM224AJ	Lower Power Quad Operational Amplifier
LM239AJ	Low Power Low Offset Voltage Quad Comparator
LM324J	Low Power Quad Operational Amplifier
LM339J	Low Power Low Offset Voltage Quad Comparator
LM148J	Quad 741 Operational Amplifier
LM139AJ	Low Power Low Offset Voltage Quad Comparator

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: **Issued: 11/13/97**

GIDEP Nr: AH6-D-98-05	**GIDEP Category:** DMSMS	**TRB Nr:**

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):

JM38510/10305BEA (JL2111BEA) Dual Voltage Comparator

Proposed Date of Change:

Lifetime buy purchase orders will be accepted until **June 9, 1998**.

(Customers were notified of the LH2111H/883 obsolescence in the Q4FY97 Obsolescence notification with a lifetime buy date of June 8, 1998 also.)

Description of Change:

Product Obsolescence

This device is no longer manufacturable by National.

The suggested replacement part is the LH2111H sold by Raytheon Semiconductor.

Effect of Change:

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

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany

QA/Spec Control	Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre	Tel: +49 (0)180 530 8585 (German)
	Tel: +49 (0)180 532 7832 (English)
	Email: europe.support@nsc.com
European Mil Aero Marketing:	Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center	Tel: 1-800-272-9959
	Email: support@nsc.com
QA	Tel: 408-721-5649

PCN Administrator Tel: 408-721-4189
Email: sherry.dobbins@nsc.com

Other N.American contacts

Other Ref:

Associated Notes / Table(s):

National Semiconductor

MILITARY / AEROSPACE
DESIGN/PROCESS CHANGE NOTIFICATION

PCN Nr: MA97037 **Issued: 11/24/97**

GIDEP Nr: AH6-D-98-06	**GIDEP Category:** DMSMS	**TRB Nr:**

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

Proposed Date of Change:

DECEMBER 8, 1998

Lifetime buy purchase orders will be accepted until DECEMBER 8, 1998.

Description of Change:

PRODUCT OBSOLESCENCE

Devices listed in Table I have exhibited minimal sales volume from our customer base and are therefore being discontinued.

Effect of Change:

In case of further questions please contact:

Europe

National Semiconductor GmbH, Fuerstenfeldbruck, Germany
QA/Spec Control Tel: +49 (0)8141 35-1483 / 1402
Customer Support Centre Tel: +49 (0)180 530 8585 (German)
Tel: +49 (0)180 532 7832 (English)
Email: europe.support@nsc.com
European Mil Aero Marketing: Tel: +49 8141 35 1492 / 1495

Other European contacts

N.America

Customer Support Center Tel: 1-800-272-9959
Email: support@nsc.com
QA Tel: 408-721-5649
PCN Administrator Tel: 408-721-4189
Email: sherry.dobbins@nsc.com

Other N.American contacts

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

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

Other Ref:

Associated Notes / Table(s):

TABLE I

ALTERNATE SOURCE MANUFACTURER LEGEND:
NSC NATIONAL SEMICONDUCTOR
TI TEXAS INSTRUMENTS
LFY LINFINITY
LTC LINEAR TECHNOLOGY
RAY RAYTHEON

NOTE: ** indicates Commercial Product sold by the Mil/Aero Division

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

(Column A) STANDARD MILITARY DWG. OR SLASHSHEET		(Column B) NATIONAL PART NUMBER	(Column C) ALTERNATE P/N	(Column D) ALTERNATE SOURCE
		11C06DCQB.		NONE
		11C06FM-MLS		NONE
	**	ADC0803 MWC		NONE
5962-9551301QEA		ADC0851CMJ-QML		NONE
5962-9551302QRA		ADC0858CMJ-QML		NONE
		CLC502A8L-2A	CLC502A8B	NSC
	**	DAC1006 MWC		NONE
		DS55115J-MLS	DS9615J-MIL	NSC
JM38510/10802BCA		JL3045BCA	LM3046N	NSC
JM38510/10802SCA		JL3045SCA	LM3046N	NSC
JM38510/10102SDA		JL747SDA	JL747SCA	NSC
	**	LMC660 MWC	LMC6482 MWC	NSC
		LM102H/883	LM6121H/883	NSC
		LM105W-MLS	LM105H-MLS	NSC
		LM108A MDS	LM108 MDS	NSC
		LM109KG MW8		NONE
		LM110 MW8	LM6121 MW8	NSC
	**	LM110H	LM6121H/883	NSC
		LM110H-MLS	LM6121H/883	NSC
5962-8760601GA		LM110H/883	LM6121H/883	NSC
5962-8760601PA		LM110J-8/883	LM6121J/883	NSC
5962-8760601CA		LM110J/883	LM6121J/883	NSC
		LM110W-MLS	LM6121J/883	NSC
		LM113 MW8	LM113G MW8	NSC
		LM117H-MLS	LM117H-SMD	NSC
		LM118 MDS	LM118 MW8	NSC
		LM119 MDS	LM119 MW8	NSC
		LM119H-MLS	LM119H-SMD	NSC
		LM119W-MLS	LM119WG-SMD	NSC
		LM120KG-15 MW8		NONE
		LM124W-MLS	LM124AW-MLS	NSC
		LM137H-MLS	LM137H-SMD	NSC
	**	LM143H	S6143	LFY
78003030XA		LM143H-SMD	S6143	LFY
		LM143H/883	S6143	LFY
5962-8767401GA		LM160H/883	LT1016	LTC
5962-8767401CA		LM160J-14/883	LT1016	LTC

5962-8767401PA		LM160J/883	LT1016	LTC
		LM161H-MLS	LT1016	LTC
5962-8757203IA		LM161H-SMD	LT1016	LTC
		LM161H/883	LT1016	LTC
5962-8757203CA		LM161J-SMD	LT1016	LTC
		LM161J/883	LT1016	LTC
		LM185-ADJ MDS	LM185-ADJ MW8	NSC
		LM185-2.5 MW8	LM185-2.5G MW8	NSC
		LM185H-2.5-MLS	LM185H-2.5-SMD	NSC
		LM194H-MLS		NONE
	**	LM3045 MWC		NONE
		LM3045J/883	LM3046N	NSC
	**	LM310 MWC	LM6121 MW8	NSC
	**	LM310H	LM6121H/883	NSC
	**	LM343H	S6143	LFY
	**	LM343 MWC		NONE
	**	LM346 MWC		NONE
	**	LM360 MWC		NONE
	**	LM360H	LT1016	LTC
	**	LM361 MWC		NONE
	**	LM361H	LT1016	LTC
5962-9300201MPA		LM612AMJ/883		NONE
		LM615AMJ/883		NONE
		LM723 MDS	LM723C MWC	NSC
		LM723 MW8	LM723C MWC	NSC
		LM725 MW8	LM725 MWC	NSC
	**	LM759CH		NONE
	**	LM759G MWC		NONE
	**	LM759MH		NONE
	**	LM831 MWC		NONE
	**	LP311 MWC		NONE