

QUALIFICATIONS VALIDATED  
ANNUALLY

CUSTOM HYBRID MICROCIRCUITS  
QML-38534-10  
28 December 1990  
SUPERSEDING  
QML-38534-9  
16 July 1990

QUALIFIED MANUFACTURERS LIST

OF

FSC 5962

CUSTOM HYBRID MICROCIRCUITS

QUALIFIED UNDER MILITARY SPECIFICATION

MIL-H-38534

CUSTOM HYBRID MICROCIRCUITS

GENERAL REQUIREMENTS FOR

This list has been prepared for use by or for the Government in the acquisition of products covered by Specification MIL-H-38534. Listing of a product is not intended to and does not connote endorsement of the product by the Department of Defense. This list is subject to change without notice; revision or amendment of this list will be issued as necessary. The listing of a product does not in any way release the supplier from compliance with the individual item specification requirements.

THE ACTIVITY RESPONSIBLE FOR THIS QML IS THE UNITED STATES AIR FORCE, CODE 17. The activity designated as agent for all contacts relative to this QML is the Defense Electronics Supply Center (DESC-EQ), Dayton, OH 45444-5285.

If a manufacturer desires to have test data considered for qualification, he must perform all required qualification tests; the qualification sample must be produced under a valid authorization to test with DESC certified materials and manufacturing construction techniques; and he must comply with the requirements specified in MIL-H-38534 prior to the start of any testing.

The listing of custom hybrid microcircuit materials and manufacturing construction techniques in QML-38534 applies only to products produced on the MIL-STD-1772 certified line(s) at the plant(s) specified on the QML.

Only those products that have been manufactured, assembled, and tested within the United States and its territories, except as provided by international agreement establishing reciprocal and equivalent quality systems and procedures, can be supplied as qualified custom hybrid QML devices.

Custom hybrid microcircuits manufactured, assembled, and tested in accordance with MIL-H-38534 shall bear the "QML" certification mark for SMD controlled hybrid microcircuits and the "CH" (compliant hybrid) certification mark for non-SMD controlled hybrid microcircuits. The certification mark shall be located preceding the date code. The certification mark abbreviation "Q" or "C" may be used for small devices. Products manufactured, assembled, and tested for Class S or Class B, with all the provisions of MIL-H-38534; MIL-STD-883, Test Method 5008; MIL-STD-1772; and with DESC certified materials and manufacturing construction techniques, can be represented as being compliant to the appropriate product assurance levels as listed herein. The information contained in this QML reflects the material and manufacturing construction techniques of the particular test sample(s). Any product represented as being compliant shall be comprised combinatorially of a manufacturer's listing from the materials and manufacturing construction techniques listed herein, as is necessary to meet the requirements of the user. The user shall be responsible for determining if the QML listing is adequate to demonstrate capability for the intended application. Supplemental testing and listing can be accomplished by application and approval of DESC-EQ. Testing is not limited to those materials and manufacturing construction techniques currently listed herein. However, testing must be completed and approved before the product can be shipped or used in the intended application.

To obtain MIL-H-38534 qualified custom hybrid microcircuits, the procurement document must specify that the product be manufactured to MIL-H-38534, and be comprised of materials and manufacturing construction techniques listed herein. Ordering data is contained in paragraph 6.1 of MIL-H-38534. All procurement documents shall meet the requirements of MIL-H-38534, Appendix C (see cautionary note herein).

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CUSTOM HYBRID MICROCIRCUITS  
QML-38534-10

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

**Caution:** Hybrid microcircuit devices that are built tested, and shipped under the QML provision (using certified/qualified manufacturing materials and construction techniques) and in full compliance with MIL-H-38534 and MIL-STD-1772 can be determined by this QML.

Contractor acquiring activities, military program offices, and other government representatives can determine if hybrid microcircuits meet the requirements of MIL-H-38534 and MIL-STD-1772 by:

- a. Product listed in the product eligibility section herein, and
- b. Product marked with "QML" certification for SMD controlled hybrid microcircuits and the "CH" (compliant hybrid) certification mark for non-SMD controlled hybrid microcircuits. the certification mark shall proceed the date code. the certification mark abbreviation "Q" or "C" may be used for small devices.

Products that do not meet the above conditions are not manufactured on a MIL-STD-1772 certified/qualified line and are not in full compliance with MIL-H-38534 and MIL-STD-1772 requirements. Hybrids microcircuits that require MIL-H-38534 and MIL-STD-1772 and are not listed herein should be carefully reviewed and verified for contract compliance by the acquisition activity. To determine whether new products are in accordance with MIL-H-38534 and MIL-STD-1772 you may call the agent for the qualifying activity (DESC-EQ).

**NOTES:**

- 1/ The QML listing can be expanded provided appropriate qualification testing is performed and passed. Therefore the manufacture may accept an order for compliant product not covered by his QML listing, but shall not ship the compliant product until the testing has been successfully completed.
- 2/ Package seal perimeter is listed by largest perimeter successfully tested in inches
- 3/ Package lead counts are listed by maximum number of leads covered by qualification.
- 4/ Caution. Do not use this number for item acquisition. Item acquired to this number may not satisfy the performance requirements of the listed SMD.
- 5/ Inactive for new design, no longer available from manufacturer.

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Advanced Analog A Division of Intech 2270 Martin Avenue Santa Clara, California 95050-2781		52467	CEXA
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-89-065) EQ(EQC-90-652)	Class H	N/A	AD/DA Converters DC/DC Converters Sample and Hold Amplifier
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
<b>LOCATION:</b> Santa Clara, CA <b>FLOW:</b> 8002-0044 <b>CAPABILITY:</b> thick film on alumina, 2 conductor levels, resistors		<b>LOCATION:</b> Santa Clara, CA <b>FLOW:</b> 8002-0074 <b>CAPABILITY:</b> thick film on alumina, 4 conductor levels, resistors	
<b>ASSEMBLY OPERATION(S) 1/</b>			
<b>LOCATION:</b> Santa Clara, CA <b>FLOW:</b> 8002-0044 <b>CAPABILITY:</b> polymer conductive epoxy; gold wire bonding		<b>LOCATION:</b> Santa Clara, CA <b>FLOW:</b> 8002-0074 <b>CAPABILITY:</b> polymer conductive/nonconductive epoxy, solder; gold, aluminum, and copper wire bonding	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, molytab, transformer, chip resistor <b>SUBSTRATE ATTACH:</b> polymer conductive/nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	ceramic dual-in-line	metal, with axial leads	
<b>SEAL METHOD:</b>	seam weld	seam weld	
<b>LEAD COUNT:</b>	24	10	
<b>SEAL PERIMETER:</b>	3.69	6.44	
<b>LEAD FINISH:</b>	gold	nickel/gold	

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**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Advanced Analog A Division of Intech 2270 Martin Avenue Santa Clara, California 95050-2781	52467	CEXA

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Aeroflex Laboratories Incorporated 35 South Service Road Plainview, NY 11803		88379	CFAS
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-616)	Class H	N/A	Linear Analog Digital
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Plainview, NY FLOW: QAP21-241 CAPABILITY: thick film on alumina, 1 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Plainview, NY FLOW: QAP21-241 CAPABILITY: polymer conductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip capacitors, tabs SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	24		
<b>SEAL PERIMETER:</b>	4.08		
<b>LEAD FINISH:</b>	gold		

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HYBRID MICROCIRCUITS  
QML-38534-10

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Aeroflex Laboratories Incorporated 35 South Service Road Plainview, NY 11803	88379	CFAS

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
5962-8604903YX	1	ARX2402	Single channel driver-receiver Interfaces with manchester encoder-decode	No
<b>NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT:</b>				<b>19</b>

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Analog Devices Incorporated Micro Electronics Division 829 Woburn Street Wilmington, Massachusetts 01887	51640	CEUJ

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-2531) EQ(EQC-89-253)	Class H	N/A	AD/DA Converters Voltage Reference Signal Processor

<b>LOCATION:</b> Wilmington, MA <b>FLOW:</b> EE-QA-8419 <b>CAPABILITY:</b> thick film on alumina, 2 conductor levels, resistors	<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A
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<b>SUBSTRATE FABRICATION OPERATION (S)</b> 1/	
<b>ASSEMBLY OPERATION(S)</b> 1/	
<b>LOCATION:</b> Wilmington, MA <b>FLOW:</b> EE-QA-8122 <b>CAPABILITY:</b> polymer conductive/non-conductive epoxy; gold and aluminum wire bonding	<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistor <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy	

<b>PACKAGE INFORMATION</b> 1/ 2/ 3/	
<b>PACKAGE TYPE:</b> ceramic dual-in-line <b>SEAL METHOD:</b> seam weld <b>LEAD COUNT:</b> 32 <b>SEAL PERIMETER:</b> 4.35 <b>LEAD FINISH:</b> gold	<b>TO can</b> projection weld 12 0.942 gold

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Analog Devices Incorporated Micro Electronics Division 829 Woburn Street Wilmington, Massachusetts 01887	51640	CEUJ

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
8300201JX	1	DAC87	D/A Conv., 12-bit, programmable	Yes
8503001XX	1	2700SD	Reference, Precision Voltage, +10V	Yes
8503002XX	1	2700UD	Reference, Precision Voltage, +10V	Yes
8503003XX	1	2701SD	Reference, Precision Voltage, -10V	Yes
8503004XX	1	2702SD	Reference, Precision Voltage, +/-10V	Yes
8503005XX	1	2702UD	Reference, Precision Voltage, +/-10V	Yes
8503006XX	1	2701UD	Reference, Precision Voltage, -10V	Yes
5962-8850901XX	1	AD390S	D/A conv, 12-bit, bipolar, linear, quad	Yes
5962-8850902XX	1	AD390T	D/A conv, 12-bit, bipolar, linear, quad	Yes
5962-8851001XX	1	AD394S	D/A conv, 12-bit, bipolar	Yes
5962-8851002XX	1	AD394T	D/A conv, 12-bit, quad, bipolar	Yes
5962-8851003XX	1	AD395S	D/A conv, 12-bit, quad, unipolar	Yes
5962-8851004XX	1	AD395T	D/A conv, 12-bit, quad, unipolar	Yes
5962-8865801XX	1	AD578X	A/D conv, 12-bit, high speed	Yes
5962-8865802XX	1	AD578T	A/D conv, 12-bit, high speed	Yes
5962-8865803XX	1	AD578ZSD	A/D conv, 12-bit, high speed	NO
5962-8865804XX	1	AD578ZTD	A/D conv, 12-bit, high speed	NO

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 22

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HYBRID MICROCIRCUITS  
QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Analog Devices Incorporated Computer Labs Division (CLD) 7910 Triad Center Drive Greensboro, North Carolina 27409		34031	CETW
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-1030) EQ(EQM-89-506) EQ(EQC-89-038)	Class H	N/A	Buffer Data Converters Op-Amp Track and Hold
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Greensboro, NC FLOW: QAP 3060 CAPABILITY: thick film on alumina, 1 conductor level, resistors		LOCATION: Greensboro, NC FLOW: QAP 3060 CAPABILITY: Thin Film on alumina, 1 conductor level, resistors	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Greensboro, NC FLOW: QAP 3060 CAPABILITY: polymer conductive epoxy; gold and aluminum wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip capacitors SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	TO can	metal, with axial leads	
<b>SEAL METHOD:</b>	projection weld	seam Weld	
<b>LEAD COUNT:</b>	12	24	
<b>SEAL PERIMETER:</b>	1.91	4.08	
<b>LEAD FINISH:</b>	gold	gold	

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Analog Devices Incorporated Computer Labs Division (CLD) 7910 Triad Center Drive Greensboro, North Carolina 27409	34031	CETW

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
8001301ZX	1	0032	Op amp, thick film	Yes
8001401ZX	1	0033	Hi Speed Buffer Amp, Volt. Foll., FET in	Yes
5962-8857901XC	1	HOS-050A	Op Amp, Video, Fast Settling, +/- 15mV	Yes
5962-8857902XC	1	HOS-060SH	Op Amp, Video, Fast Settling, +/- 1.5mV	Yes

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 17

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Apex Microtechnology Corporation 5980 North Shannon Road Tucson, AZ 85741		60024	CFAB
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-89-071)	Class H	N/A	Voltage Regulator
<b>SUBSTRATE FABRICATION OPERATION(S)</b> 1/			
<b>LOCATION:</b> Tucson, AZ <b>FLOW:</b> FLOW 01 <b>CAPABILITY:</b> thick film on beryllia oxide, 1 conductor level, resistors		<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A	
<b>ASSEMBLY OPERATION(S)</b> 1/			
<b>LOCATION:</b> Tucson, AZ <b>FLOW:</b> FLOW 10, FLOW 99 <b>CAPABILITY:</b> polymer conductive epoxy, solder; aluminum wire bonding		<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors			
<b>SUBSTRATE ATTACH:</b> solder			
<b>PACKAGE INFORMATION</b> 1/ 2/ 3/			
<b>PACKAGE TYPE:</b>	TO can		
<b>SEAL METHOD:</b>	projection weld		
<b>LEAD COUNT:</b>	8		
<b>SEAL PERIMETER:</b>	2.67		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Apex Microtechnology Corporation 5980 North Shannon Road Tucson, AZ 85741	60024	CFAB

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Beckman Industrial Corporation Electronic Technologies Division 4141 Palm Street Fullerton, California 92635		73138	CEXB

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-89-071)	Class H	N/A	Data Converters Voltage Regulator Analog

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Fullerton, CA  
 FLOW: 800-403-1  
 CAPABILITY: thick film on alumina, 1 conductor level, resistors

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Fullerton, CA  
 FLOW: 800-403-1  
 CAPABILITY: polymer conductive epoxy, eutectic; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors, chip resistors, molytaps  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** metal, with peripheral leads  
**SEAL METHOD:** seam weld  
**LEAD COUNT:** 38  
**SEAL PERIMETER:** 3.58  
**LEAD FINISH:** solder

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

MANUFACTURER	CAGE CODE	SYMBOL CODE
Beckman Industrial Corporation Electronic Technologies Division 4141 Palm Street Fullerton, California 92635	73138	CEXB

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Boeing Electronics Company 20403 Sixty-Eighth Avenue South Kent, Washington 98124		81205	CEUW
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-2947)	Class H	N/A	Custom
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Kent, WA FLOW: D900-10476-1-2 CAPABILITY: thick film on alumina, 2 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Kent, WA FLOW: D900-10476-1-2 CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	24		
<b>SEAL PERIMETER:</b>	5.04		
<b>LEAD FINISH:</b>	gold		

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HYBRID MICROCIRCUITS  
QML-38534-10

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<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Boeing Electronics Company 20403 Sixty-Eighth Avenue South Kent, Washington 98124	81205	CEUW

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 3**

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 HYBRID MICROCIRCUITS  
 QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Comlinear Corporation 4800 Wheaton Drive Fort Collins, Colorado 80525		62839	CEYA
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-89-0244) EQ(EQC-90-0392) EQ(EQC-90-0393)	Class H	Data Converters Op-Amp	
	<b>RADIATION HARDNESS LEVEL</b>		
	N/A		

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Fort Collins, CO  
 FLOW: TFS-01-001  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

LOCATION: Lee's Summit, MO  
 FLOW: QAS-02-300  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Fort Collins, CO  
 FLOW: PDS-01-001  
 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	TO can	<b>Ceramic dawl-in-line</b>
<b>SEAL METHOD:</b>	projection weld	Seam weld
<b>LEAD COUNT:</b>	12	40
<b>SEAL PERIMETER:</b>	1.81	6.22
<b>LEAD FINISH:</b>	Gold	Gold

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 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Comlinear Corporation 4800 Wheaton Drive Fort Collins, Colorado 80525	62839	CEYA

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 2**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
CTS Microelectronics 1201 Cumberland Avenue West Lafayette, Indiana 47906		23223	CEUR
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-88-1587) EQ(EQM-87-2173)	Class H	N/A	Analog Converter Power Converter

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: West Lafayette, IN  
 FLOW: STD-RC-HIREL, STD-TF-MLT-LYR  
 CAPABILITY: thick film on alumina, 3 conductor levels; Thick film on alumina, 1 conductor level, resistors

LOCATION: West Lafayette, IN  
 FLOW: STD-THINFLM-BD1  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: West Lafayette, IN  
 FLOW: STD-C&W-1772  
 CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors, chip resistors  
**SUBSTRATE ATTACH:** polymer conductive/nonconductive epoxy, solder, eutectic

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** ceramic dual-in-line  
**SEAL METHOD:** solder  
**LEAD COUNT:** 14  
**SEAL PERIMETER:** 1.39  
**LEAD FINISH:** gold

TO can  
 projection weld  
 12  
 2.75  
 gold/solder

Metal, with peripheral leads  
 Seam weld  
 30  
 4.40  
 Gold

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
CTS Microelectronics 1201 Cumberland Avenue West Lafayette, Indiana 47906	23223	CEUR

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
7801301XX	1	CTS00002	Amplifier, current, thick/thin film	Yes
7801301GX	1	CTS0002XB	Amplifier, current, thick/thin film	Yes
8001301ZX	1	CTS0032ZB	Op Amp, thick film	No
8001401ZX	1	CTS0033ZB	Hi Speed Buffer Amp, Volt. Foll., FET in	No
8508701ZX	1	CTS0041ZB	Hi Pwr. Op Amp, Ext. Comp., 2.0A out	No
8508801YX	1	CTS0021ZB	Hi Pwr. Op Amp, Ext. Comp., 1.0A out	No
5962-8761701XX	1	CTS00061B	Driver, High Voltage, 1.5A	No
5962-8761702XX	1	CTS00081B	Driver, High Voltage, 3.0A	No

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 7

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>			<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Datel Incorporated 11 Cabot Boulevard Mansfield, MA 02048-1194			50721	CFAT
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-90-0626) EQ(EQC-90-0677)	Class H	N/A	Digital	
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>				
LOCATION: Mansfield, MA FLOW: D-4552 CAPABILITY: thick film on alumina, 1 conductor level			LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>				
LOCATION: Mansfield, MA FLOW: D-4552 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding			LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy				
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>				
<b>PACKAGE TYPE:</b>	ceramic dual-in-line			
<b>SEAL METHOD:</b>	seam weld			
<b>LEAD COUNT:</b>	24			
<b>SEAL PERIMETER:</b>	4.17			
<b>LEAD FINISH:</b>	gold			

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Date1 Incorporated 11 Cabot Boulevard Mansfield, MA 02048-1194	50721	CFAT

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
5962-8952801XX	1	DAC HKB/883B	D/A Conv.,12-bit, binary input code	No
5962-8952802XX	1	DAC HKB-2/883B	D/A Conv.,12-bit, two's complement	No
5962-8953101XX	1	DAC HPB/883B	D/A Conv.,16-bit,0 to +10,+5 volts output	No
5962-8953102XX	1	DAC HPB-1/883B	D/A Conv.,16-bit,+10 volts output	No
<b>NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT:</b>				<b>1</b>

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Elantec Incorporated 1996 Tarob Court Milpitas, California 95035		64762	CEWO
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-88-1646)	Class H	N/A	Analog Converter Power Converter

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Milpitas, CA  
 FLOW: FCA-0002  
 CAPABILITY: thick film on alumina, 1 conductor level, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Milpitas, CA  
 FLOW: FCA-0004, FCA-0008, FCA-0015  
 CAPABILITY: eutectic; gold wire bonding

**ADD-ON ELEMENTS: unpackaged die**  
**SUBSTRATE ATTACH: solder**

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	TO can
<b>SEAL METHOD:</b>	projection weld
<b>LEAD COUNT:</b>	12
<b>SEAL PERIMETER:</b>	1.88
<b>LEAD FINISH:</b>	gold

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**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.

The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Elantec Incorporated 1996 Tarob Court Milpitas, California 95035	64762	CEWO

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
7801301XX	1	0002	Amplifier, current, thick film	Yes
8001301ZX	1	0032	Op amp, thick film	Yes
8001401ZX	1	0033	Hi Speed Buffer Amp, Volt. Foll., FET in	Yes
8508701ZX	1	0041	Hi Power Op Amp, Ext. Comp., 0.2A Out.	Yes
<b>NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT:</b>				<b>1</b>

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HYBRID MICROCIRCUITS  
QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Film Microelectronics Incorporated 10-B Centennial Drive Peabody, Massachusetts 01960		27851	CEYB
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-89-233)	Class H	Power (Buffer) Bi-polar	
	<b>RADIATION HARDNESS LEVEL</b>		
	N/A		
<b>SUBSTRATE FABRICATION OPERATION (S) i/</b>			
LOCATION: Burlington, MA FLOW: 52-0069 CAPABILITY: thin film on Beryllia, 1 conductor level		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) i/</b>			
LOCATION: Peabody, MA FLOW: 52-0015 CAPABILITY: polymer conductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with peripheral leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	19		
<b>SEAL PERIMETER:</b>	4.78		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Film Microelectronics Incorporated 10-B Centennial Drive Peabody, Massachusetts 01960	27851	CEYB

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
General Microcircuits Corporation 780 Boston Road BillERICA, Massachusetts 08121		67294	CEYC
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-89-0235)	Class H	Custom	
	<b>RADIATION HARDNESS LEVEL</b>		
	N/A		

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: BillERICA, MA  
 FLOW: 10000  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: BillERICA, MA  
 FLOW: 10000  
 CAPABILITY: polymer conductive epoxy; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** diodes, transistors, integrated circuits, chip capacitors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** metal, with peripheral leads  
**SEAL METHOD:** seam weld  
**LEAD COUNT:** 22  
**SEAL PERIMETER:** 2.05  
**LEAD FINISH:** gold

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
General Microcircuits Corporation 780 Boston Road Billerica, Massachusetts 08121	67294	CEYC

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hewlett-Packard Company Optical Communications Division 370 West Trimble Road San Jose, California 95131	50434	CEUS

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-2594) EQ(EQM-88-1265) EQ(EQC-90-0754)	Class H	N/A	Optocoupler

<b>SUBSTRATE FABRICATION OPERATION (S) I/</b>	
LOCATION: San Jose, CA FLOW: 5956-9439-20,5956-8000-20,5956-9523-30,5956-9526-30 CAPABILITY: light emitting diode fabrication, integrated circuit fabrication	LOCATION: N/A FLOW: N/A CAPABILITY: N/A

<b>ASSEMBLY OPERATION(S) I/</b>	
LOCATION: San Jose, CA FLOW: 1CP1-0016-3 CAPABILITY: eutectic; gold and aluminum wire bonding	LOCATION: N/A FLOW: N/A CAPABILITY: N/A

**ADD-ON ELEMENTS:** diodes, transistors, integrated circuits  
**SUBSTRATE ATTACH:** eutectic, solder

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	ceramic dual-in-line	leadless chip carrier
<b>SEAL METHOD:</b>	solder	solder
<b>LEAD COUNT:</b>	16	20
<b>SEAL PERIMETER:</b>	1.28	0.92
<b>LEAD FINISH:</b>	gold, solder	solder

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**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hewlett-Packard Company Optical Communications Division 370 West Trimble Road San Jose, California 95131	50434	CEUS

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
8102801EX	1	6N134	Optocoupler, Dual Channel	Yes
8302401EX	1	6N140A	Optocoupler, Quad	Yes
5962-8767901EX	1	4N55	Optocoupler, Dual Channel	Yes
5962-8876801PX	1	HCPL-5201	Optocoupler, Single Channel	Yes
5962-8876901PX	1	HCPL-5231	Optocoupler, Dual Channel	Yes
5962-8957001PX	1	HCPL-5401	Optocoupler, High Speed, Single Channel	Yes
5962-8957101PX	1	HCPL-5431	Optocoupler, High Speed, Dual Channel	Yes
5962-89571022X	1	HCPL-6431	Optocoupler-line receiver, dual channel	Yes
5962-8957201EX	1	HCPL-1931	Optocoupler, dual channel	Yes
5962-8978501PX	1	HCPL-5731	Optocoupler, Dual Channel, LCC package	No
5962-89785022X	1	HCPL-6731	Optocoupler, Single Channel, High Gain	No
5962-8981001PX	1	HCPL-5701		

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 21

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Honeywell Incorporated Sperry Central Manufacturing 21111 North Nineteenth Avenue Phoenix, Arizona 85036		58960	CEUT
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-1933) EQ(EQC-90-0768)	Class H	N/A	Analog Digital Drive controller
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Phoenix, AZ FLOW: 51549 CAPABILITY: thick film on alumina, 2 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Phoenix, AZ FLOW: 51550 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS: unpackaged die</b> <b>SUBSTRATE ATTACH: eutectic</b>			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with peripheral leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	36		
<b>SEAL PERIMETER:</b>	3.5		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Honeywell Incorporated Sperry Central Manufacturing 21111 North Nineteenth Avenue Phoenix, Arizona 85036	58960	CEUT

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 1**

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 HYBRID MICROCIRCUITS  
 QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Honeywell Incorporated Military Avionics Division 13350 U. S. Highway 19 South Clearwater, Florida 34624		09128	CEWN
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-88-1324)	Class H	N/A	Data converters Signal processors
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Clearwater, FL FLOW: DR16393 CAPABILITY: thin film on alumina, 1 conductor level, resistors		LOCATION: Clearwater, FL FLOW: DR16393 CAPABILITY: thick film on alumina, 6 conductor levels, thick film on alumina, 3 conductor levels, resistors	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Clearwater, FL FLOW: DR16393 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors			
<b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with peripheral leads	metal, with axial leads	
<b>SEAL METHOD:</b>	seam weld	seam weld	
<b>LEAD COUNT:</b>	16	16	
<b>SEAL PERIMETER:</b>	2.77	2.0	
<b>LEAD FINISH:</b>	gold	gold	

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Honeywell Incorporated Military Avionics Division 13350 U. S. Highway 19 South Clearwater, Florida 34624	09128	CEWN

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hughes Aircraft Company Microelectronics Circuit Division Space Business Unit 500 Superior Avenue Building 700 P. O. Box H Newport Beach, California 92658-8903		55267	CEYN
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-89-341)	Class H	N/A	Analog Digital
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Space Business Unit, Newport Beach, CA FLOW: 1051091 CAPABILITY: thick film on alumina, 1 conductor level, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Space Business Unit, Newport Beach, CA FLOW: 1120379 CAPABILITY: polymer conductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip capacitors, molytab SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	22		
<b>SEAL PERIMETER:</b>	2.03		
<b>LEAD FINISH:</b>	gold		

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hughes Aircraft Company Microelectronics Circuit Division Multichip Microcircuit Business Unit (E1000) 500 Superior Avenue Building 700 P. O. Box H Newport Beach, California 92658-8903	55267	CEYN

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-326)	Class H	N/A	Analog Digital

<b>SUBSTRATE FABRICATION OPERATION (S)</b> 1/	
<b>LOCATION:</b> Multichip Microcircuit Business Unit, Newport, CA <b>FLOW:</b> 1051089 <b>CAPABILITY:</b> thin film on alumina, 1 conductor level, resistors	<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A

<b>ASSEMBLY OPERATION(S)</b> 1/	
<b>LOCATION:</b> Multichip Microcircuit Business Unit, Newport, CA <b>FLOW:</b> 1050994 <b>CAPABILITY:</b> polymer conductive epoxy, eutectic; gold wire bonding	<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistor	
<b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy	

<b>PACKAGE INFORMATION</b> 1/ 2/ 3/	
<b>PACKAGE TYPE:</b> <b>SEAL METHOD:</b> <b>LEAD COUNT:</b> <b>SEAL PERIMETER:</b> <b>LEAD FINISH:</b>	leadless chip carrier seam weld 68 4.25 solder

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HYBRID MICROCIRCUITS  
QML-38534-10

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hughes Aircraft Company Microelectronics Circuit Division Space/Multichip Micro. Business Unit 500 Superior Avenue Building 700 P. O. Box H Newport Beach, California 92658	55267	CEYN

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hycomp Incorporated 165 Cedar Hill Street Marlborough, Massachusetts 01752		34707	CEYP
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-89-421)	Class H	Voltage Reference Analog	
<b>RADIATION HARDNESS LEVEL</b>			
N/A			

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Marlborough, MA  
 FLOW: EMA-75  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Marlborough, MA  
 FLOW: EMA-75  
 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors, chip resistors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	ceramic dual-in-line
<b>SEAL METHOD:</b>	seam weld
<b>LEAD COUNT:</b>	10
<b>SEAL PERIMETER:</b>	2.9
<b>LEAD FINISH:</b>	gold

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**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

MANUFACTURER	CAGE CODE	SYMBOL CODE
Hycorp Incorporated 165 Cedar Hill Street Marlborough, Massachusetts 01752	34707	CEYP

SPECIFIC PRODUCT TYPES				PRODUCT TYPE/DESCRIPTION	SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/			
8503001XX 5/	1	2700SD		Reference, Precision Voltage, +10V	No
8503002XX 5/	1	2700UD		Reference, Precision Voltage, +10V	No
8503003XX 5/	1	2701SD		Reference, Precision Voltage, -10V	No
8503004XX 5/	1	2702SD		Reference, Precision Voltage, +/-10V	No
8503005XX	1	2702UD		Reference, Precision Voltage, +/-10V	No
8503006XX	1	2701UD		Reference, Precision Voltage, -10V	No

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 22

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Hytek Microsystems Incorporated 400 Hot Springs Road Carson City, Nevada 89706		0ANM4	CEYO

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-89-382)	Class H	N/A	Active Delay Line

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Carson City, NV  
 FLOW: RN1005-002  
 CAPABILITY: thick film on alumina, 2 conductor levels, resistors

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Carson City, NV  
 FLOW: RN1005-002  
 CAPABILITY: polymer conductive/nonconductive epoxy, solder; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors, inductors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	platform
<b>SEAL METHOD:</b>	projection weld
<b>LEAD COUNT:</b>	14
<b>SEAL PERIMETER:</b>	2.75
<b>LEAD FINISH:</b>	solder

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 HYBRID MICRO CIRCUITS  
 QML-38534-10



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MANUFACTURER	CAGE CODE	SYMBOL CODE
Hitek Microsystems Incorporated 400 Hot Springs Road Carson City, Nevada 89706	0ANM4	CEYO

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 74

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
ILC Data Device Corporation 105 Wilbur Place Bohemia, New York 11716		19645	CEPB

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-220)	Class H	N/A	1553 Bus Data Converters

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Bohemia, NY  
 FLOW: 41637  
 CAPABILITY: thick film on alumina, 5 conductor levels, thick film on alumina, 3 conductor levels, resistors

LOCATION: Bohemia, NY  
 FLOW: 41638  
 CAPABILITY: thin film on alumina, 1 conductor level, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Bohemia, NY  
 FLOW: 36070, 36071  
 CAPABILITY: polymer conductive/nonconductive epoxy, solder; gold wire bonding

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy, solder

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**PACKAGE INFORMATION 1/ 2/ 3/**

<b>PACKAGE TYPE:</b>	metal, with axial leads
<b>SEAL METHOD:</b>	seam weld
<b>LEAD COUNT:</b>	24
<b>SEAL PERIMETER:</b>	7.94
<b>LEAD FINISH:</b>	gold
	platform projection weld
	32
	5.38
	gold

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
ILC Data Device Corporation 30 Orvill Drive Bohemia, New York 11716		19645	CEPB
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-657)	Class H	N/A	Data Converters
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
<b>LOCATION:</b> Bohemia, NY <b>FLOW:</b> 41639 <b>CAPABILITY:</b> thick film on alumina, 3 conductor levels, resistors		<b>LOCATION:</b> Bohemia, NY <b>FLOW:</b> 41638 <b>CAPABILITY:</b> thin film on alumina, 1 conductor level, resistors	
<b>ASSEMBLY OPERATION(S) 1/</b>			
<b>LOCATION:</b> Bohemia, NY (Power Line) <b>FLOW:</b> 41634 <b>CAPABILITY:</b> polymer conductive epoxy; gold wire bonding		<b>LOCATION:</b> N/A <b>FLOW:</b> N/A <b>CAPABILITY:</b> N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistors <b>SUBSTRATE ATTACH:</b> polymer conductive/nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	24		
<b>SEAL PERIMETER:</b>	4.10		
<b>LEAD FINISH:</b>	gold		

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 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
ILC Data Device Corporation 10301 Willows Road Redmond, Washington 98052	19645	CEUU

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Interpoint Corporation 10301 Willows Road Redmond, Washington 98052		50821	CEUU
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-2838) EQ(EQM-89-0439)	Class H	N/A	Linear amplifier Signal processor Data converters Analog, Digital
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Redmond, WA FLOW: QA-039 CAPABILITY: thick film on alumina, 2 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Redmond, WA FLOW: QA-039 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	38		
<b>SEAL PERIMETER:</b>	6.0		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Interpoint Corporation 10301 Willows Road Redmond, Washington 98052	50821	CEUU

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
ITT Avionics Division 100 Kingsland Road Clifton, New Jersey 07014		28527	CEWQ
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQM-88-1955)	Class H	Memory Custom	
<b>RADIATION HARDNESS LEVEL</b>			
N/A			

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Clifton, NJ  
 FLOW: TFH-102  
 CAPABILITY: thick film on alumina, 4 conductor levels, resistors

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Clifton, NJ  
 FLOW: TFH-103  
 CAPABILITY: polymer conductive epoxy; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** metal, with axial leads.  
**SEAL METHOD:** seam weld  
**LEAD COUNT:** 36  
**SEAL PERIMETER:** 4.38  
**LEAD FINISH:** gold

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
ITT Avionics Division 100 Kingsland Road Clifton, New Jersey 07014	28527	CEWQ

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
M.S. Kennedy Corporation 8170 Thompson Road Clay, NY 13041		51651	CFAA
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-90-451) EQ(EQC-90-507)	Class H	High Power DC-Amplifier	
<b>RADIATION HARDNESS LEVEL</b>			
N/A			

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Clay, NY  
 FLOW: 2422-1563  
 CAPABILITY: thick film on alumina, 1 conductor level, resistors

LOCATION: Clay, NY  
 FLOW: 2422-1563  
 CAPABILITY: thick film on beryllia, 2 conductor levels, resistors

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Clay, NY  
 FLOW: 2422-1518  
 CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors, chip resistors  
**SUBSTRATE ATTACH:** polymer conductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** TO can  
**SEAL METHOD:** projection weld  
**LEAD COUNT:** 12  
**SEAL PERIMETER:** 3.14  
**LEAD FINISH:** gold

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
M.S. Kennedy Corporation 8170 Thompson Road Clay, NY 13041	51651	CFAA

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro-Rel Division Medtronic Incorporated 2343 West Tenth Place Tempe, Arizona 85281		8K957	CEUZ

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-88-221)	Class H	N/A	Linear

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Tempe, AZ  
 FLOW: 1403818  
 CAPABILITY: co-fire on alumina, 4 conductor levels

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Tempe, AZ  
 FLOW: 1403818  
 CAPABILITY: polymer conductive epoxy; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip capacitors  
**SUBSTRATE ATTACH:** N/A

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** leadless chip carrier  
**SEAL METHOD:** solder  
**LEAD COUNT:** 76  
**SEAL PERIMETER:** 3.5  
**LEAD FINISH:** solder

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
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<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro-Rel Division Medtronic Incorporated 2343 West Tenth Place Tempe, Arizona 85281	8K957	CEUZ

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro System Engineering Incorporated 6024 Southwest Jean Road Lake Oswego, OR 97034		75800	CFAU
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-90-619)	Class H	Digital	
	<b>RADIATION HARDNESS LEVEL</b>		
	N/A		
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Lake Oswego, OR FLOW: 3100002 CAPABILITY: thick film on alumina, 2 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Lake Oswego, OR FLOW: 3100001 CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip capacitors, chip resistors SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
PACKAGE TYPE:	metal, with axial leads		
SEAL METHOD:	seam weld		
LEAD COUNT:	34		
SEAL PERIMETER:	5.0		
LEAD FINISH:	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro System Engineering Incorporated 6024 Southwest Jean Road Lake Oswego, OR 97034	75800	CFAU

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro Networks Company 324 Clarke Street Worcester, Massachusetts 01606		50507	CEVQ
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-88-0709)	Class H	N/A	Data converters Track and Hold Amplifier
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Worcester, MA FLOW: FC-23 CAPABILITY: thin film on alumina, 1 conductor level, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Worcester, MA FLOW: FC-25 CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip capacitors, chip resistors SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
PACKAGE TYPE:	ceramic dual-in-line		
SEAL METHOD:	seam weld		
LEAD COUNT:	24		
SEAL PERIMETER:	4.7		
LEAD FINISH:	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.

The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro Networks Company 324 Clarke Street Worcester, Massachusetts 01606	50507	CEVQ

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
5962-8768801XX	1	MN3008	D/A Conv., 8-bit, 0 to 4V output	Yes
5962-8768802XX	1	MN3009	D/A Conv., 8-bit, -2V to +2V Output	No
5962-8956901XX	1	MN5295	A/D Conv., 16-bit	No
5962-8958301YX	1	MN5200H/B	A/D Conv., 12-bit, 0 to -10V, Int. Comp.	No
5962-8958302YX	1	MN5203H/B	A/D Conv., 12-bit, -5 to +5V, Int. Comp.	No
5962-8958303YX	1	MN5201H/B	A/D Conv., 12-bit, -10 to +10V, Int. Comp.	No
5962-8958304YX	1	MN5204H/B	A/D Conv., 12-bit, 0 to -10V, Ext. Comp.	No
5962-8958305YX	1	MN5202H/B	A/D Conv., 12-bit, -5 to +5V, Ext. Comp.	No
5962-8958306YX	1	MN5205H/B	A/D Conv., 12-bit, -10 to +10V, Ext. Comp.	No
5962-8958307YX	1	MN5206H/B	A/D Conv., 12-bit, 0 to +10V, Int. Comp.	No
5962-8958401YX	1	MN5210H/B	A/D Conv., 12-bit, 0 to -10V, Int. Comp., HS	No
5962-8958402YX	1	MN5213H/B	A/D Conv., 12-bit, -5 to +5V, Int. Comp., HS	No
5962-8958403YX	1	MN5211H/B	A/D Conv., 12-bit, -10 to +10V, Int. Comp., HS	Yes
5962-8958404YX	1	MN5214H/B	A/D Conv., 12-bit, 0 to -10V, Ext. Comp., HS	No
5962-8958405YX	1	MN5212H/B	A/D Conv., 12-bit, -5 to +5V, Ext. Comp., HS	No
5962-8958406YX	1	MN5215H/B	A/D Conv., 12-bit, -10 to +10V, Ext. Comp., HS	Yes
5962-8958407YX	1	MN5216H/B	A/D Conv., 12-bit, 0 to +10V, Int. Comp., HS	No

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 200

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HYBRID MICROCIRCUITS  
QML-38534-10



**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
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<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micro Networks Company 324 Clarke Street Worcester, Massachusetts 01606	50507	CEVQ

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
5962-8959501XX	1	MN5245H/B	D/A Conv., 12-bit, 0 to+5V	No
5962-8959502XX	1	MN5245AH/B	A/D Conv., 12-bit, 0to+5 V, 3-State output	No
5962-8959503XX	1	MN5246H/B	A/D Conv., 12-bit, + 2.5 V	No
5962-8959504XX	1	MN5246AH/B	A/D Conv., 12-bit, +2.5V, 3-State output	No
5962-8971801XX	1	MN3020H/B	A/D Conv., 8-bit, with input register	No

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micropac Industries, Incorporated 905 East Walnut Street Garland, TX 75040		31757	CFAR
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-90-625)	Class H	Power	
	<b>RADIATION HARDNESS LEVEL</b>		
	N/A		
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
<b>LOCATION:</b> Garland, TX (Power Line)		<b>LOCATION:</b> N/A	
<b>FLOW:</b> 90138		<b>FLOW:</b> N/A	
<b>CAPABILITY:</b> thick film on alumina, 1 conductor level, resistors		<b>CAPABILITY:</b> N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
<b>LOCATION:</b> Garland, TX (Power Line)		<b>LOCATION:</b> N/A	
<b>FLOW:</b> 90138		<b>FLOW:</b> N/A	
<b>CAPABILITY:</b> polymer conductive epoxy; gold wire bonding		<b>CAPABILITY:</b> N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die			
<b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	TO can		
<b>SEAL METHOD:</b>	projection weld		
<b>LEAD COUNT:</b>	2		
<b>SEAL PERIMETER:</b>	2.27		
<b>LEAD FINISH:</b>	gold		

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Micropac Industries, Incorporated 905 East Walnut Street Garland, TX 75040		31757	CFAR
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-90-624)	Class H	Optocoupler	
<b>RADIATION HARDNESS LEVEL</b>			
N/A			
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
<b>LOCATION:</b> Garland, TX (Optocoupler Line)		<b>LOCATION:</b> N/A	
<b>FLOW:</b> 90138		<b>FLOW:</b> N/A	
<b>CAPABILITY:</b> thick film on alumina, 1 conductor level, resistors		<b>CAPABILITY:</b> N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
<b>LOCATION:</b> Garland, TX (Optocoupler Line)		<b>LOCATION:</b> N/A	
<b>FLOW:</b> 90138		<b>FLOW:</b> N/A	
<b>CAPABILITY:</b> polymer conductive epoxy; gold wire bonding		<b>CAPABILITY:</b> N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die			
<b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	ceramic dual-in-line		
<b>SEAL METHOD:</b>	solder		
<b>LEAD COUNT:</b>	16		
<b>SEAL PERIMETER:</b>	1.89		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b> Micropac Industries, Incorporated 905 East Walnut Street Garland, TX 75040	<b>CAGE CODE</b> 31757	<b>SYMBOL CODE</b> CFAR
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SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
8102801EX 8302401EX	1 1	6N134/883B 6N140/883B	Optical coupler (dual) Four channel optical coupler	Yes Yes
<b>NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0</b>				

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
National Hybrid, Incorporated 2200 Smithtown Ave Ronkonkoma, NY 11779	57363	CFAQ

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-557)	Class H	N/A	Linear, Sample and Hold Data Converters, Data Bus Digitals, Custom, Amplifier

<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>	
LOCATION: Ronkonkoma, NY FLOW: FL1772A7THK CAPABILITY: thick film on alumina, 2 gold conductive layers, resistors. thick film on beryllia, 1 gold conductive layer.	LOCATION: N/A FLOW: N/A CAPABILITY: N/A

<b>ASSEMBLY OPERATION(S) 1/</b>	
LOCATION: Ronkonkoma, NY FLOW: FL883500834 CAPABILITY: polymer conductive epoxy, eutectic; gold wire bonding	LOCATION: N/A FLOW: N/A CAPABILITY: N/A
ADD-ON ELEMENTS: unpackaged die, chip resistors SUBSTRATE ATTACH: polymer nonconductive epoxy	

<b>PACKAGE INFORMATION 1/ 2/ 3/</b>	
PACKAGE TYPE: SEAL METHOD: LEAD COUNT: SEAL PERIMETER: LEAD FINISH:	metal package, axial leads seam weld 24 4.08 gold

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b> National Hybrid, Incorporated 2200 Smithtown Avenue Ronkonkoma, NY 11779	<b>CAGE CODE</b> 57363	<b>SYMBOL CODE</b> CFAQ
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SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
5962-8604906YX	1	NHI-1509	Dual channel digital driver-receiver	No.

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 2

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
National Semiconductor 5900 South Calle Santa Cruz Tucson, Arizona 85706		27014	CCXP

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-1840) EQ(EQC-90-0627)	Class H	N/A	Analog Converter Power Converter

<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>	
LOCATION: Santa Clara, CA FLOW: 902471 CAPABILITY: thick film on alumina, 1 conductor level, resistors	LOCATION: N/A FLOW: N/A CAPABILITY: N/A

<b>ASSEMBLY OPERATION(S) 1/</b>	
LOCATION: Tucson, AZ FLOW: (TU) AS-4000H CAPABILITY: eutectic; gold wire bonding	LOCATION: N/A FLOW: N/A CAPABILITY: N/A
ADD-ON ELEMENTS: unpackaged die, tab SUBSTRATE ATTACH: solder	

<b>PACKAGE INFORMATION 1/ 2/ 3/</b>	
PACKAGE TYPE: TO can SEAL METHOD: projection weld LEAD COUNT: 8 SEAL PERIMETER: 2.638 LEAD FINISH: solder	

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
National Semiconductor 5900 South Calle Santa Cruz Tucson, Arizona 85706	27014	CCXP

SPECIFIC PRODUCT TYPES					SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION		
7801301XX	3	0002	Amplifier, current, thick film	Yes	
8001301ZX	1	LH0032G	Op amp, thick film	No	
8001401ZX	1	LH0033G	Hi Spd. Buffr. Amp., Vol. Fol., Fet in	No	
8508701ZX	1	LH0041G/883	Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	No	
8508801XX	1	LH0021	Hi Pwr. Op Amp, Ext. Comp.	No	

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 1**

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 HYBRID MICROCIRCUITS  
 QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Raytheon Company Microwave and Power Tube Division Industrial Components Operation P. O. Box 5300 465 Centre Street Quincy, Massachusetts 02269		94144	CETX
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-1031)	Class H	N/A	Amplifier
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Quincy, MA FLOW: 38756 CAPABILITY: thick film on alumina, 1 conductor level, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Quincy, MA FLOW: 38230, 42771 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with axial leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	13		
<b>SEAL PERIMETER:</b>	2.76		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Raytheon Company Microwave and Power Tube Division Industrial Components Operation P. O. Box 5300 465 Centre Street Quincy, Massachusetts 02269	94144	CETX

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 1**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
SIPEX Corporation Hybrid Systems Division 22 Linnell Circle Billerica, MA 01821		33256	CFAC
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-506)	Class H	N/A	AD Converters Sample and Hold Amplifier
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Billerica, MA FLOW: 239-0232 CAPABILITY: thin film on alumina, 1 gold conductor layer, resistors.		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Billerica, MA FLOW: 239-0458 CAPABILITY: polymer conductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip resistors <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b> ceramic dual-in-line <b>SEAL METHOD:</b> seam weld <b>LEAD COUNT:</b> 24 <b>SEAL PERIMETER:</b> 4.07 <b>LEAD FINISH:</b> gold			

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
SIPEX Corporation Hybrid Systems Division 22 Linnell Circle BillERICA, MA 01821	33256	CFAC

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
5962-8956601HCX	1	HS9716TB	16-bit sample and hold amplifier	No
<b>NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT:</b>				<b>0</b>

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Teledyne Components 40 Allied Drive Dedham, Massachusetts 02026		29832	CETY
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQM-87-1114)	Class H	linear buffer amplifier	
	N/A		

**SUBSTRATE FABRICATION OPERATION (S) 1/**

LOCATION: Dedham, MA  
 FLOW: 80710825  
 CAPABILITY: thick film on alumina, 1 conductor levels, resistors

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ASSEMBLY OPERATION(S) 1/**

LOCATION: Dedham, MA  
 FLOW: 80320260  
 CAPABILITY: polymer conductive/nonconductive epoxy; gold wire bonding

LOCATION: N/A  
 FLOW: N/A  
 CAPABILITY: N/A

**ADD-ON ELEMENTS:** unpackaged die, chip resistors  
**SUBSTRATE ATTACH:** polymer nonconductive epoxy

**PACKAGE INFORMATION 1/ 2/ 3/**

**PACKAGE TYPE:** TO can  
**SEAL METHOD:** projection weld  
**LEAD COUNT:** 12  
**SEAL PERIMETER:** 2.00  
**LEAD FINISH:** gold

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Teledyne Components 40 Allied Drive Dedham, Massachusetts 02026	29832	CETY

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
8001401ZX	1	0033	Hi Speed Buffer Amp, Volt. Foll., FET in	No

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 1**

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HYBRID MICROCIRCUITS  
QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Teledyne Microelectronics 12964 Panama Street Los Angeles, California 90066		16170	CEOL

<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQM-87-1898)	Class H	N/A	Data converters linear

<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>	
LOCATION: Los Angeles, CA FLOW: 7700530 Exhibit 2.5 CAPABILITY: thick film on alumina, 7 conductor levels	LOCATION: Los Angeles, CA FLOW: 7700530 Exhibit 2.4 CAPABILITY: thin film on alumina, 2 conductor levels, resistors

<b>ASSEMBLY OPERATION(S) 1/</b>	
LOCATION: Los Angeles, CA FLOW: 700530 Exhibit 2.6 CAPABILITY: polymer conductive epoxy, solder; gold and aluminum wire bonding	LOCATION: N/A FLOW: N/A CAPABILITY: N/A
ADD-ON ELEMENTS: unpackaged die, chip capacitors SUBSTRATE ATTACH: solder	

<b>PACKAGE INFORMATION 1/ 2/ 3/</b>	
PACKAGE TYPE: metal, with peripheral leads SEAL METHOD: seam weld LEAD COUNT: 46 SEAL PERIMETER: 5.00 LEAD FINISH: gold	

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Teledyne Microelectronics 12964 Panama Street Los Angeles, California 90066	16170	CEOL

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 17

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 HYBRID MICROCIRCUITS  
 QML-38534-10



<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Vitarel Microelectronics 6828 Nancy Ridge Drive San Diego, California 92121		66632	CEXE
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>TECHNOLOGY TYPES</b>	
EQ(EQC-89-0107)	Class H	op-amp analog digital	
<b>RADIATION HARDNESS LEVEL</b>			
N/A			
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: San Diego, CA FLOW: PF9001010 CAPABILITY: thick film on alumina, 1 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: San Diego, CA FLOW: PF9001004, PF9001007, PF900103 CAPABILITY: polymer conductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die <b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	TO can		
<b>SEAL METHOD:</b>	projection weld		
<b>LEAD COUNT:</b>	8		
<b>SEAL PERIMETER:</b>	1.26		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Vitarel Microelectronics 6828 Nancy Ridge Drive San Diego, California 92121	66632	CEXE

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Westinghouse Electric Corporation P. O. Box 746 Baltimore, MD 21203		97942	CFAR
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-567)	Class H	N/A	Custom Digital Analog
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Baltimore, MD FLOW: 1L88-2461-1/MT CAPABILITY: thick film on alumina, 8 conductor levels		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Baltimore, MD FLOW: 1L88-2461-5/DM CAPABILITY: polymer conductive/nonconductive epoxy, eutectic; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ADD-ON ELEMENTS:</b> unpackaged die, chip capacitors, chip resistors, spacer post, tab			
<b>SUBSTRATE ATTACH:</b> polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	metal, with peripheral leads		
<b>SEAL METHOD:</b>	seam weld		
<b>LEAD COUNT:</b>	68		
<b>SEAL PERIMETER:</b>	5.92		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:** The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-STD-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
Westinghouse Electric Corporation P. O. Box 746 Baltimore, MD 21203	97942	CFAR

SPECIFIC PRODUCT TYPES				SHIPPED
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 0**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

<b>MANUFACTURER</b>		<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
White Technology 4246 East Wood Street Phoenix, Arizona 85040		54230	CEWR
<b>QUALIFICATION LETTER(S)</b>	<b>PRODUCT CLASS DESIGNATOR</b>	<b>RADIATION HARDNESS LEVEL</b>	<b>TECHNOLOGY TYPES</b>
EQ(EQC-90-019)	Class H	N/A	linear (oscillator)
<b>SUBSTRATE FABRICATION OPERATION (S) 1/</b>			
LOCATION: Phoenix, AZ FLOW: 106B00006 CAPABILITY: thick film on alumina, 1 conductor levels, resistors		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
<b>ASSEMBLY OPERATION(S) 1/</b>			
LOCATION: Phoenix, AZ FLOW: 106B00006 CAPABILITY: polymer conductive epoxy; gold wire bonding		LOCATION: N/A FLOW: N/A CAPABILITY: N/A	
ADD-ON ELEMENTS: unpackaged die, chip resistors SUBSTRATE ATTACH: polymer nonconductive epoxy			
<b>PACKAGE INFORMATION 1/ 2/ 3/</b>			
<b>PACKAGE TYPE:</b>	platform		
<b>SEAL METHOD:</b>	projection weld		
<b>LEAD COUNT:</b>	16		
<b>SEAL PERIMETER:</b>	3.53		
<b>LEAD FINISH:</b>	gold		

**PRODUCT ELIGIBILITY:**The above manufacturer has certified that the following listing of hybrid microcircuits are built, tested, and shipped using the above certified FLOW/QUALIFIED MATERIALS AND MANUFACTURING TECHNIQUES and are in FULL COMPLIANCE with MIL-H-38534 and MIL-SID-1772 requirements.  
 The listing does not in anyway represent or imply interchangeability, equivalency.

<b>MANUFACTURER</b>	<b>CAGE CODE</b>	<b>SYMBOL CODE</b>
White Technology 4246 East Wood Street Phoenix, Arizona 85040	54230	CEWR

SPECIFIC PRODUCT TYPES				
STANDARDIZED MILITARY DRAWING (SMD)	ESDS CLASS	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SHIPPED
None	N/A	N/A	N/A	N/A

**NUMBER OF SCD/SID DEVICES COVERED BY QUALIFICATION TESTING MIL-H-38534 COMPLIANT: 1**

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 HYBRID MICROCIRCUITS  
 QML-38534-10

APPROVED SOURCE  
MASTER PRODUCT LISTING

TABLE I

PRODUCT ELIGIBILITY: The Standardized Military Drawings (SMD) listed below marked with an asterisk have been certified by the manufacturers to meet the requirements of MIL-STD-883, paragraph 1.2.1 C only and are in the process of qualification testing. The remaining SMD Drawings have been certified by the manufacturers to be in FULL COMPLIANCE to MIL-H-38534 and are built, tested, and shipped using MIL-STD-1772 CERTIFIED FLOW/QUALIFIED MATERIALS and MANUFACTURING TECHNIQUES.

STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER <sup>4/</sup>	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
78013016X	CTS0002	Amplifier, current, thick/thin film	CTS Corporation
7801301XX	CTS0002XB	Amplifier, current, thick/thin film	CTS Corporation
7801301XX	LH0002H/883B	Amplifier, current, thick film	National Semiconductor Corporation
7801301XX	ELH0002H/883B	Amplifier, current, thick film	Eiantec Incorporated
80013012X	ADLH0032G/883B	Op amp, thick film	Analog Devices Computer Labs Div.
80013012X	CTS0032B	Op amp, thick film	CTS Corporation
80013012X	ELH0032G/883E10003	Op amp, thick film	Eiantec Incorporated
80013012X	LH0032G	Op amp, thick film	National Semiconductor Corporation
80013012X	TP0032-83	Op amp, thick film	Teledyne Components-Dedham
80014012X	CTS0033B	Hi Spd. Buffr. Amp., Vol. Fol., FET in	CTS Corporation
80014012X	LH0033G	Hi Spd. Buffr. Amp., Vol. Fol., FET in	National Semiconductor Corporation
80014012X	TP0033-83	Hi Spd. Buffr. Amp., Vol. Fol., FET in	Teledyne Components-Dedham
80014012X	ADLH0033G/883B	Hi Spd. Buffr. Amp., Vol. Fol., FET in	Analog Devices Computer Labs Div.
80014012X	ELH0033G/883B	Hi Spd. Buffr. Amp., Vol. Fol., FET in	Eiantec Incorporated
8102801EX	6N134/883B	Optocoupler, Dual Channel	Hewlett-Packard
8102801EX	6N134/883B	Optocoupler, Dual Channel	Micropac Corporation
8102801EX	6N134/883B	Optocoupler, Dual Channel	Micropac Industries Incorporated
8102802PX	HCPL-5631	Optocoupler, Dual Channel	Hewlett-Packard Company
81028032X	HCPL-6631	Optocoupler, Dual Channel	Hewlett-Packard Company
8300201JX	DAC87CBI	D/A Conv., 12-bit, Programmable	Analog Devices MED
8300201XX	DAC87	D/A Conv., 12-bit, Programmable	NO APPROVED SOURCE
8302401EX	6N140A/883B	Optocoupler, Quad	Micropac Industries Incorporated
8302401EX	6N140A/883B	Optocoupler, Quad	Hewlett-Packard
85030013X	HC2700SLCC/883B	Reference, Precision Voltage, +10V	Hycomp Incorporated
8503001CX	HS2700SD/883B	Reference, Precision Voltage, +10V	Sipex Corporation
8503001XX	2700SD/883B	Reference, Precision Voltage, +10V	NO APPROVED SOURCE
8503001YX	2700SD/883B	Reference, Precision Voltage, +10V	Analog Devices MED
8503001YX	HC2700SD/883B	Reference, Precision Voltage, +10V	Hycomp Incorporated
85030023X	HC2700ULCC/883B	Reference, Precision Voltage, +10V	Sipex Corporation
8503002CX	HC2700UD/883B	Reference, Precision Voltage, +10V	NO APPROVED SOURCE
8503002XX	2700UD/883B	Reference, Precision Voltage, +10V	Analog Devices MED
8503002YX	2700UD/883B	Reference, Precision Voltage, +10V	Analog Devices MED
8503002YX	HC2700UD/883B	Reference, Precision Voltage, +10V	Hycomp Incorporated

TABLE I

STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
* 85030033X	HC2702SLCC/883B	Reference, Precision Voltage, -10V	Hycomp Incorporated
* 8503003CX	HS2702SD/883B	Reference, Precision Voltage, -10V	Sipex Corporation
* 8503003XX	2702SD/883B	Reference, Precision Voltage, -10V	NO APPROVED SOURCE
* 8503003YX	2702SD/883B	Reference, Precision Voltage, -10V	Analog Devices MED
* 85030043X	HC2702SD/883B	Reference, Precision Voltage, +/-10V	Hycomp Incorporated
* 8503004CX	HC2702ULCC/883B	Reference, Precision Voltage, +/-10V	Hycomp Incorporated
* 8503004XX	HS2702UD/883B	Reference, Precision Voltage, +/-10V	Sipex Corporation
* 8503004YX	2702UD/883B	Reference, Precision Voltage, +/-10V	NO APPROVED SOURCE
* 8503004YY	2702UD/883B	Reference, Precision Voltage, +/-10V	Analog Devices MED
* 85030053X	HC2702UD/883B	Reference, Precision Voltage, +/-10V	Hycomp Incorporated
* 8503005CX	HC2701SLCC/883B	Reference, Precision Voltage, +/-10V	Hycomp Incorporated
* 8503005YX	HS2701SD/883B	Reference, Precision Voltage, +/-10V	Sipex Corporation
* 85030063X	2701SD/883B	Reference, Precision Voltage, +/-10V	Analog Devices MED
* 8503006CX	HC2701UD/883B	Reference, Precision Voltage, -10V	Hycomp Incorporated
* 8503006YX	HS2701UD/883B	Reference, Precision Voltage, -10V	Sipex Corporation
* 85087012X	2701UD/883B	Reference, Precision Voltage, -10V	Analog Devices MED
* 8508701ZX	CTS0041ZBNEW	Reference, Precision Voltage, -10V	Hycomp Incorporated
* 8508701ZX	LH0041G/883	Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	CTS Corporation
* 8508801XX	ELH0041G/883B	Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	National Semiconductor Corporation
* 8508801YX	LH0021K	Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	Elantec Incorporated
* 8508801YX	ELH0021K/E10036	Hi Pwr. Op Amp, Ext. Comp., 1.0A Out.	National Semiconductor Corporation
* 8508901YX	CTS0021ZB	Hi Pwr. Op Amp., Ext. Comp., 1.0A Out.	Elantec Incorporated
* 8508902YX	ELH0101AK/E10039	Power Op amp., Wideband, Thick Film	Elantec Incorporated
* 5962-8604901XX	ELH0101K/E10038	Power Op Amp., Wideband, Thick Film	NO APPROVED SOURCE
* 5962-8604902TX	BUS-63105	1553 Single Ch. Drvr/Rec	ILC Data Device Corporation
* 5962-8604902ZX	BUS-83106II	1553 Single Ch. Drvr/Rec., Low Power	ILC Data Device Corporation
* 5962-8604903YX	BUS-63105II	1553 Single Ch. Drvr/Rec.	Aeroflex Laboratories Incorporated
* 5962-8604904UX	ARX2402	1553 Single Ch. Drvr/Rec., Low Power	Aeroflex Laboratories Incorporated
* 5962-8604905XX	ARX3402	1553 Single Ch. Drvr/Rec.	Marconi Circuit Technology Corp.
* 5962-8604905YX	CT-1487M	1553 Single Ch. Drvr/Rec.	ILC Data Device Corporation
* 5962-8604906TX	BUS-8553	1553 Single Ch. Drvr/Rec.	National Hybrid Incorporated
* 5962-8604907XX	NHI-1509PP	1553 Single Ch. Drvr/Rec.	National Hybrid Incorporated
* 5962-8753501XX	NHI-1509	1553 Single Ch. Drvr/Rec.	STC Components Incorporated
* 5962-8753501YX	FC155361	1553 Single Ch. Drvr/Rec.	ILC Data Device Corporation
* 5962-8753502XX	BUS-65112	1553 Remote Terminal Unit, Dual Red.	ILC Data Device Corporation
* 5962-8753502YX	BUS-65117	1553 Remote Terminal Unit, Dual Red.	Aeroflex Laboratories Incorporated
* 5962-8757901XX	ARX2452	1553 Remote Terminal Unit, Dual Red.	Aeroflex Laboratories Incorporated
* 5962-8757901YX	ARX2452FP	1553 Remote Terminal Unit, Dual Red.	NO APPROVED SOURCE
* 5962-8757901YX	BUS-63125	1553 Dual Ch. Drvr/Rec., -15V	NO APPROVED SOURCE
* 5962-8757901YX	BUS-63126	1553 Dual Ch. Drvr/Rec., -15V	NO APPROVED SOURCE

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STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
5962-8757902XX	BUS-63125II	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	ILC Data Device Corporation
5962-8757902YX	BUS-63126II	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	ILC Data Device Corporation
5962-8757903XX	ARX2411	1553 Dual Ch. Drvr/Rec., -15V	Aeroflex Laboratories Incorporated
5962-8757903YX	ARX2411FF	1553 Dual Ch. Drvr/Rec., -15V	Aeroflex Laboratories Incorporated
5962-8757904XX	ARX3411	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	Aeroflex Laboratories Incorporated
5962-8757904YX	ARX3411FF	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	Aeroflex Laboratories Incorporated
5962-8757905XX	NHI-1500	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	National Hybrid Incorporated
5962-8757905YX	NHI-1500FF	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	National Hybrid Incorporated
5962-8757906XX	FC1553621	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	STC Components Incorporated
5962-8757906YX	FC1553621FF	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	STC Components Incorporated
5962-8757907XX	CTI1487D	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	Marconi Circuit Technology Corp.
5962-8757907YX	CTI1487DFP	1553 Dual Ch. Drvr/Rec., Low Pwr -15V	Marconi Circuit Technology Corp.
5962-8761701XX	CTS00006IB	Driver, High Voltage, 1.5 Amp.	CTS Corporation
5962-8761702XX	CTS00008IB	Driver, High Voltage, 3.0 Amp.	CTS Corporation
5962-8762001XX	OPA501VM/883B	Op Amp, High Power	Burr-Brown Corporation
5962-876201XX	BUS-65111-883	1553 Remote Term., Dual Red., Low Pwr.	ILC Data Device Corporation
5962-8767901EX	4N55/883B	Optocoupler, Dual Channel	Hewlett-Packard
5962-8768701XX	HSDC-8920A-883B	R/S to Dig. Conv., 400Hz, +/-2.6 arcmin.	ILC Data Device Corporation
5962-8768702XX	HSDC-8920-883B	R/S to Dig. Conv., 400Hz, +/-4.0 arcmin.	ILC Data Device Corporation
5962-8768801XX	MN3008H/B	D/A Conv., 8-bit, 0 to 4V Output	Micronetworks Incorporated
5962-8768802XX	MN3009H/B	D/A Conv., 8-bit, -2 to +2V Output	Micronetworks Incorporated
5962-880801XX	ADC-HX/883B	A/D Conv., 12-bit, 20 microseconds	Datel Incorporated
5962-880802XX	ADC-HZ/883B	A/D Conv., 12-bit, 8 microseconds	Datel Incorporated
5962-8850901XX	AD390SD/883B	D/A Conv., 12-bit, bipolar, linear, quad	Analog Devices MED
5962-8850902XX	AD390TD/883B	D/A Conv., 12-bit, bipolar, linear, quad	Analog Devices MED
5962-8851001XX	AD394SD/883B	D/A Conv., 12-bit, quad, bipolar	Analog Devices MED
5962-8851002XX	AD394TD/883B	D/A Conv., 12-bit, quad, bipolar	Analog Devices MED
5962-8851003XX	AD395SD/883B	D/A Conv., 12-bit, quad	Analog Devices MED
5962-8851004XX	AD395TD/883B	D/A Conv., 12-bit, quad	Analog Devices MED
5962-8851401XX	HS9403B-8	12-bit data acq. sys., 8-ch. diff. inp.	Sipex Corporation
5962-8851402XX	HS9403B-16	12-bit data acq. sys., 16ch. sng-ended	Sipex Corporation
5962-8851402YX	HS9403B-16FF	12-bit data acq. sys., 16ch. sng-ended	Sipex Corporation
5962-8851701XX	DAC-02310-112	D/A Conv., 14-bit, deglitched	ILC Data Device Corporation
5962-8851701YX	DAC-02310-112	D/A Conv., 14-bit, deglitched	ILC Data Device Corporation
5962-8851702XX	DAC-02310-113	D/A Conv., 14-bit, deglitched	ILC Data Device Corporation
5962-8851702YX	DAC-02310-113	D/A Conv., 14-bit, deglitched	ILC Data Device Corporation
5962-8854201XX	ADC00300-112	D/A Conv., 12-bit, track/hold	ILC Data Device Corporation
5962-8854201YX	ADC00302-112	D/A Conv., 12-bit, track/hold	ILC Data Device Corporation
5962-8857901XX	HOS-050A/883B	Video Op Amp, Fast Settling	Analog Devices Computer Labs Div.
5962-8857902XX	HOS-050A/883B	Video Op Amp, Fast Settling	Analog Devices Computer Labs Div.
5962-8858501XX	BUS-65600-883B	1553 Bus Controller, RTU & Monitor	ILC Data Device Corporation

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STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
* * *	BUS-65601-883B	1553 Bus Controller, RTU & Monitor	ILC Data Device Corporation
	BUS-66300 II-883B	1553 to Microprocessor Interface	ILC Data Device Corporation
	BUS-66301 II-883B	1553 to Microprocessor Interface	ILC Data Device Corporation
	HS 9342B	D/A Conv., 12-bit, Quad	Sipex Corporation
	AD578SD/883B	A/D Conv., 12-bit, High Speed	Analog Devices MED
	AD578TD/883B	A/D Conv., 12-bit, High Speed	Analog Devices MED
	AD578ZSD/883B	A/D Conv., 12-bit, High Speed	Analog Devices MED
	AD578ZTD/883B	A/D Conv., 12-bit, High Speed	Analog Devices MED
* * *	BUS61553-883B	1553, BC/RTU/MT, Multiplexed Terminal	ILC Data Device Corporation
	BUS61563-883B	1553, BC/RTU/MT, Multiplexed Terminal	ILC Data Device Corporation
	BUS61554-883B	1553, BC/RTU/MT, Multiplexed Terminal	ILC Data Device Corporation
	BUS61564-883B	1553, BC/RTU/MT, Multiplexed Terminal	ILC Data Device Corporation
* * *	OPA541SM/883B	Power Op Amp, High Current	Burr-Brown Corporation
	HCPL-5201	Optocoupler, Single Channel, Hi Speed	Hewlett-Packard
	HCPL-5231	Optocoupler, Dual Channel, Hi Speed	Hewlett-Packard
	HS1068B	A/D Conv., 8-bit, Flash	Sipex Corporation
* * *	HCPL-5761	Optocoupler, AC/DC Logic Interface	Hewlett-Packard
	OM7509SC/883B	Voltage Regulator, Dual, +15 & -15V	Omnirel Corporation
* * *	SDC14561-114	S/D Conv., 90V, 400Hz, 2 min. accuracy	ILC Data Device Corporation
	SDC14561-115	S/D Conv., 90V, 400Hz, 1 min. accuracy	ILC Data Device Corporation
	SDC14560-114	S/D Conv., 11.8V, 400Hz, 2 min. accrcy	ILC Data Device Corporation
	SDC14560-115	S/D Conv., 11.8V, 400Hz, 1 min. accrcy	ILC Data Device Corporation
* * *	SDC14560-605	S/D Conv., 11.8V, 400Hz, 80 HzBW, 1 min	ILC Data Device Corporation
	RGBDAC3808H/B	D/A Conv., Triple, 8-bit, Video RAM	Advanced Analog Incorporated
* * *	BUS-63147-883B	1553 Transceiver, Dual Channel, 5V	ILC Data Device Corporation
	ARX-2453	1553 Transceiver, Dual Channel, 5V	Aeroflex Laboratories Incorporated
* * *	ARX-2453FP	1553 Transceiver, Dual Channel, 5V	Aeroflex Laboratories Incorporated
	NHI-1529	1553 Transceiver, Dual Channel, 5V	National Hybrid Incorporated
* * *	NHI-1529FP	1553 Transceiver, Dual Channel, 5V	National Hybrid Incorporated
	DAC-HBK/883B	D/A Conv., 12-bit, binary input	Datel Incorporated
	DAC-HBK-2/883B	D/A Conv., 12-bit, two's complmnt.	Datel Incorporated
	DAC-HPB/883B	D/A Conv., 16-bit, 0 to 10V & +/-5V Out	Datel Incorporated
	DAC-HPB-1/883B	D/A Conv., 16-bit, +/- 10V Output	Datel Incorporated
* * *	MN5290H/B	A/D Conv., 16-bit, shrt.cycle 14-bit	Micronetworks Incorporated
	MN5291H/B	A/D Conv., 16-bit, shrt.cycle 13-bit	Micronetworks Incorporated
	HS362SB	Sample/Hold Multiplier, Dual 8-ch.	Sipex Corporation
* * *	HS9716TB	Sample/Hold Amp., 16-bit	Sipex Corporation
	5295H/B	A/D Conv., 16-bit, High Speed	Micronetworks Incorporated
	HCPL-5401	Optocoupler, Single Ch., High Speed	Hewlett-Packard
	HCPL-5431	Optocoupler, Dual Ch., Hi Spd, Com Sup	Hewlett-Packard
	HCPL-6431	Optocoupler, Dual Ch., Hi Spd, Sep Sup	Hewlett-Packard
	HCPL-1931	Optocoupler, Dual Ch., Line Receiver	Hewlett-Packard

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STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
5962-8958301YX	MN5200H/B	A/D Conv., 12-bit, 0 to -10V Int. Ref.	Micronetworks Incorporated
5962-8958302YX	MN5203H/B	A/D Conv., 12-bit, 0 to -10V Ext. Ref.	Micronetworks Incorporated
5962-8958303YX	MN5201H/B	A/D Conv., 12-bit, -5 to +5V Int. Ref.	Micronetworks Incorporated
5962-8958304YX	MN5204H/B	A/D Conv., 12-bit, -5 to +5V Ext. Ref.	Micronetworks Incorporated
5962-8958305YX	MN5202H/B	A/D Conv., 12-bit, -10 to -10V Int. Ref.	Micronetworks Incorporated
5962-8958306YX	MN5205H/B	A/D Conv., 12-bit, -10 to -10V Ext. Ref.	Micronetworks Incorporated
5962-8958307YX	MN5206H/B	A/D Conv., 12-bit, 0 to 10V Int. Ref.	Micronetworks Incorporated
5962-8958401YX	MN5210H/B	ADC, Hi Sp, 12-bit, 0 to -10V Int. Ref.	Micronetworks Incorporated
5962-8958402YX	MN5213H/B	ADC, Hi Sp, 12-bit, 0 to -10V Ext. Ref.	Micronetworks Incorporated
5962-8958403YX	MN5211H/B	ADC, Hi Spd, 12-bit, -5 to 5V Int. Ref.	Micronetworks Incorporated
5962-8958404YX	MN5214H/B	ADC, Hi Spd, 12-bit, -5 to 5V Ext. Ref.	Micronetworks Incorporated
5962-8958405YX	MN5212H/B	ADC, Hi Spd, 12-bit, -10 to 10V Int. Ref.	Micronetworks Incorporated
5962-8958406YX	MN5215H/B	ADC, Hi Spd, 12-bit, -10 to 10V Ext. Ref.	Micronetworks Incorporated
5962-8958407YX	MN5216H/B	ADC, Hi Spd, 12-bit, 0 to 10V Int. Ref.	Micronetworks Incorporated
5962-8959201XX	ARX3407	1553 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959201YX	ARX3407FP	1553 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959202XX	ARX3404	Unv1 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959202YX	ARX3404FP	Unv1 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959203XX	ARX3407-001	1553 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959203YX	ARX3407-001FP	1553 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959204XX	ARX3404-001	Unv1 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959204YX	ARX3404-001FP	Unv1 Driver/Rec., Single Ch., Low Pwr.	Aeroflex Laboratories Incorporated
5962-8959401XX	CLC231A8C	Op Amp, Wideband, High Speed	Comlinear Corporation
5962-8959501XX	5245H/B	A/D Conv, 12-bit, 0 to 5V	Micronetworks Incorporated
5962-8959501YX	5245FH/B	A/D Conv, 12-bit, 0 to 5V	Micronetworks Incorporated
5962-8959502XX	5245AH/B	A/D Conv, 12-bit, 0 to 5V, 3-state inp.	Micronetworks Incorporated
5962-8959502YX	5245AHF/B	A/D Conv, 12-bit, 0 to 5V, 3-state inp.	Micronetworks Incorporated
5962-8959503XX	5246H/B	A/D Conv, 12-bit, +/-2.5V	Micronetworks Incorporated
5962-8959503YX	5246HF/B	A/D Conv, 12-bit, +/-2.5V	Micronetworks Incorporated
5962-8959504XX	5246AH/B	A/D Conv, 12-bit, +/-2.5V, 3-state inp.	Micronetworks Incorporated
5962-8959504YX	5246AHF/B	A/D Conv, 12-bit, +/-2.5V, 3-state inp.	Micronetworks Incorporated
5962-8965901XX	EL2004G/883B	Buffer Amp, FET in.	Elantec Incorporated
5962-8965901YX	EL2004L/883B	Buffer Amp, FET in.	Elantec Incorporated
5962-8971801XX	MN3020H/B	D/A Conv., 8-bit, w/ input register	Micronetworks Incorporated
5962-8978501XX	HCP1-5731	Optocoupler, Dual Ch., Common supplies	Hewlett-Packard
5962-8978502YX	HCP1-5731	Optocoupler, Dual Ch., Separate supplies	Hewlett-Packard
5962-8981001XX	HCP1-5701	Optocoupler, Sngl Ch., Low Cur., Hi Gn.	Hewlett-Packard
5962-8981301XX	HCI437L/883	Op Amp, Wideband, Fast Settling	Hycomp Incorporated
5962-8981301GX	HCI437/883	Op Amp, Wideband, Fast Settling	Hycomp Incorporated
5962-8990801XX	SDC14565-114	R/D Conv., 400Hz., 11.8V	ILC Data Device Corporation
5962-8990802XX	SDC14565-115	R/D Conv., 400Hz., 11.8V	ILC Data Device Corporation
5962-8990803XX	SDC14565-616	R/D Conv., 400Hz., 80Hz. BW, 11.8V	ILC Data Device Corporation

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STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	PRODUCT TYPE/DESCRIPTION	SOURCE(S)
5962-8990804XX	SDC14566-1115	R/D Conv., 400Hz, 11.8V, trimmed velocity	ILC Data Device Corporation
5962-8997901XX	SP1078B	A/D Converter, 8-bit, flash	Sipex Corporation
5962-9055401XX	HSDC-8915A-883B	R/D or S/D Converter, +/-2.6 arcmin acc	ILC Data Device Corporation
5962-9055402XX	HSDC-8915-883B	R/D or S/D Converter, +/-4.0 arcmin acc	ILC Data Device Corporation
5962-9070701HXX	SDC14500-635	S/D Converter, 400Hz, 11.8V, acc. +/-2.6	ILC Data Device Corporation
5962-9070702HXX	SDC14500-636	S/D Converter, 400Hz, 11.8V, acc. +/-4.0	ILC Data Device Corporation
5962-9070703HXX	SDC14502-605	S/D Converter, 60Hz, 90V, acc. +/-2.6 arcmin	ILC Data Device Corporation
5962-9070704HXX	SDC14502-606	S/D Converter, 60Hz, 90V, acc. +/-4.0 arcmin	ILC Data Device Corporation
5962-9085401PX	HCPL-5501	Optocoupler, Single Ch., transistor out	Hewlett-Packard Company

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CROSS REFERENCE

TABLE II

**PRODUCT ELIGIBILITY:** The Standardized Military Drawings (SMD) listed below marked with an asterisk have been certified by the manufacturers to meet the requirements of MIL-STD-883, paragraph 1.2.1 C only and are in the process of qualification testing. The remaining SMD Drawings have been certified by the manufacturers to be in FULL COMPLIANCE to MIL-H-38534 and are built, tested, and shipped using MIL-STD-1772 CERTIFIED FLOW/QUALIFIED MATERIALS and MANUFACTURING TECHNIQUES.

PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
1553 BUS CONTROL			
* 1553 Bus Controller, RTU & Monitor	5962-8858501XX	BUS-65600-883B	ILC Data Device Corporation
* 1553 Bus Controller, RTU & Monitor	5962-8858501YX	BUS-65601-883B	ILC Data Device Corporation
1553 BUS/MICROPROCESSOR INTERFACE			
* 1553 to Microprocessor Interface	5962-8858601XX	BUS-66300 II-883B	ILC Data Device Corporation
* 1553 to Microprocessor Interface	5962-8858601YX	BUS-66301 II-883B	ILC Data Device Corporation
1553 SINGLE CHANNEL DRIVER/RECEIVER			
* 1553 Single Ch. Drvr/Rec	5962-8604901XX	BUS-63105	NO APPROVED SOURCE
* 1553 Single Ch. Drvr/Rec., Low Power	5962-8604902XX	BUS-63105II	ILC Data Device Corporation
* 1553 Single Ch. Drvr/Rec., Low Power	5962-8604902TX	BUS-83106II	ILC Data Device Corporation
* 1553 Single Ch. Drvr/Rec.	5962-8604903YX	ARX2402	Aeroflex Laboratories Incorporated
* 1553 Single Ch. Drvr/Rec., Low Power	5962-8604904UX	ARX3402	Aeroflex Laboratories Incorporated
* 1553 Single Ch. Drvr/Rec.	5962-8604905XX	CT-1487M	Marconi Circuit Technology Corp.
* 1553 Single Ch. Drvr/Rec.	5962-8604906YX	BUS-8553	ILC Data Device Corporation
* 1553 Single Ch. Drvr/Rec.	5962-8604907TX	NHI-1509	National Hybrid Incorporated
* 1553 Single Ch. Drvr/Rec.	5962-8604908XX	NHI-1509FP	National Hybrid Incorporated
* 1553 Driver/Rec., Single Ch., Low Pwr.	5962-8959201XX	FC155361	STC Components Incorporated
* 1553 Driver/Rec., Single Ch., Low Pwr.	5962-8959201YX	ARX3407	Aeroflex Laboratories Incorporated
* 1553 Driver/Rec., Single Ch., Low Pwr.	5962-8959203XX	ARX3407FP	Aeroflex Laboratories Incorporated
* 1553 Driver/Rec., Single Ch., Low Pwr.	5962-8959203YX	ARX3407-001	Aeroflex Laboratories Incorporated
* 1553 Driver/Rec., Single Ch., Low Pwr.	5962-8959203YX	ARX3407-001FP	Aeroflex Laboratories Incorporated
1553 DUAL CHANNEL DRIVER/RECEIVER			
* 1553 Dual Ch. Drvr/Rec., -15V	5962-8757901XX	BUS-63125	NO APPROVED SOURCE
* 1553 Dual Ch. Drvr/Rec., -15V	5962-8757901YX	BUS-63126	NO APPROVED SOURCE
* 1553 Dual Ch. Drvr/Rec., Low Pwr -15V	5962-8757902XX	BUS-63125II	ILC Data Device Corporation
* 1553 Dual Ch. Drvr/Rec., Low Pwr -15V	5962-8757902YX	BUS-63126II	ILC Data Device Corporation
* 1553 Dual Ch. Drvr/Rec., -15V	5962-8757903XX	ARX2411	Aeroflex Laboratories Incorporated

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PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
1553 DUAL CHANNEL DRIVER/RECEIVER			
* 1553 Dual Ch. Drvr/Rec., -15V	5962-8757903YX	ARX2411FP	Aeroflex Laboratories Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757904XX	ARX3411	Aeroflex Laboratories Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757904YX	ARX3411FP	Aeroflex Laboratories Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757905XX	NHI-1500	National Hybrid Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757905YX	NHI-1500FP	National Hybrid Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757906XX	FC1553621	STC Components Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757906YX	FC1553621FP	STC Components Incorporated
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757907XX	CTI1487D	Marconi Circuit Technology Corp.
* 1553 Dual Ch. Drvr/Rec, Low Pwr -15V	5962-8757907YX	CTI1487DFP	Marconi Circuit Technology Corp.
1553 MULTIPLEXER			
* 1553, BC/RTU/MT, Multiplexed Terminal	5962-8869201XX	BUS61553-883B	ILC Data Device Corporation
* 1553, BC/RTU/MT, Multiplexed Terminal	5962-8869201YX	BUS61563-883B	ILC Data Device Corporation
* 1553, BC/RTU/MT, Multiplexed Terminal	5962-8869202XX	BUS61554-883B	ILC Data Device Corporation
* 1553, BC/RTU/MT, Multiplexed Terminal	5962-8869202YX	BUS61564-883B	ILC Data Device Corporation
1553 REMOTE TERMINAL UNIT			
* 1553 Remote Terminal Unit, Dual Red.	5962-8753501XX	BUS-65112	ILC Data Device Corporation
* 1553 Remote Terminal Unit, Dual Red.	5962-8753501YX	BUS-65117	ILC Data Device Corporation
* 1553 Remote Terminal Unit, Dual Red.	5962-8753502XX	ARX2452	Aeroflex Laboratories Incorporated
* 1553 Remote Terminal Unit, Dual Red.	5962-8753502YX	ARX2452FP	Aeroflex Laboratories Incorporated
* 1553 Remote Term., Dual Red., Low Pwr.	5962-8763201XX	BUS-65111-883	ILC Data Device Corporation
1553 TRANSCEIVER			
* 1553 Transceiver, Dual Channel, 5V	5962-8952201XX	BUS-63147-883B	ILC Data Device Corporation
* 1553 Transceiver, Dual Channel, 5V	5962-8952202XX	ARX-2453	Aeroflex Laboratories Incorporated
* 1553 Transceiver, Dual Channel, 5V	5962-8952202YX	ARX-2453FP	Aeroflex Laboratories Incorporated
* 1553 Transceiver, Dual Channel, 5V	5962-8952203XX	NHI-1529	National Hybrid Incorporated
* 1553 Transceiver, Dual Channel, 5V	5962-8952203YX	NHI-1529FP	National Hybrid Incorporated
ANALOG/DIGITAL CONVERTER			
* A/D Conv., 12-bit, 20 microseconds	5962-8850801XX	ADC-HX/883B	Datel Incorporated
* A/D Conv., 12-bit, 8 microseconds	5962-8850802XX	ADC-HZ/883B	Datel Incorporated
A/D Conv., 12-bit, High Speed	5962-8865801XX	AD578SD/883B	Analog Devices MED
A/D Conv., 12-bit, High Speed	5962-8865802XX	AD578TD/883B	Analog Devices MED
A/D Conv., 12-bit, High Speed	5962-8865803XX	AD578SD/883B	Analog Devices MED

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PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
<b>ANALOG/DIGITAL CONVERTER</b>			
A/D Conv., 12-bit, High Speed	5962-8865804XX	AD578ZTD/883B	Analog Devices MED
A/D Conv., 8-bit, Flash	5962-8877601XX	HS1068B	Sipex Corporation
A/D Conv., 16-bit, Shrt.cycle 14-bit	5962-8956301HXX	MN5290H/B	Micronetworks Incorporated
A/D Conv., 16-bit, Shrt.cycle 13-bit	5962-8956302HXX	MN5291H/B	Micronetworks Incorporated
A/D Conv., 16-bit, High Speed	5962-8956901HXX	5295H/B	Micronetworks Incorporated
A/D Conv., 12-bit, 0 to -10V Int. Ref.	5962-8958301YX	MN5200H/B	Micronetworks Incorporated
A/D Conv., 12-bit, 0 to -10V Ext. Ref.	5962-8958302YX	MN5203H/B	Micronetworks Incorporated
A/D Conv., 12-bit, -5 to +5V Int. Ref.	5962-8958303YX	MN5201H/B	Micronetworks Incorporated
A/D Conv., 12-bit, -5 to +5V Ext. Ref.	5962-8958304YX	MN5204H/B	Micronetworks Incorporated
A/D Conv., 12-bit, -10 to -10V Int. Ref.	5962-8958305YX	MN5202H/B	Micronetworks Incorporated
A/D Conv., 12-bit, -10 to -10V Ext. Ref.	5962-8958306YX	MN5205H/B	Micronetworks Incorporated
A/D Conv., 12-bit, 0 to 10V Int. Ref.	5962-8958307YX	MN5206H/B	Micronetworks Incorporated
ADC, Hi Sp, 12-bit, 0 to -10V Int. Ref.	5962-8958401YX	MN5210H/B	Micronetworks Incorporated
ADC, Hi Sp, 12-bit, 0 to -10V Ext. Ref.	5962-8958402YX	MN5213H/B	Micronetworks Incorporated
ADC, Hi Spd, 12-bit, -5 to 5V Int. Ref.	5962-8958403YX	MN5211H/B	Micronetworks Incorporated
ADC, Hi Spd, 12-bit, -5 to 5V Ext. Ref.	5962-8958404YX	MN5214H/B	Micronetworks Incorporated
ADC, Hi Spd, 12-bit, -10 to 10V Int. Ref.	5962-8958405YX	MN5212H/B	Micronetworks Incorporated
ADC, Hi Spd, 12-bit, -10 to 10V Ext. Ref.	5962-8958406YX	MN5215H/B	Micronetworks Incorporated
ADC, Hi Spd, 12-bit, 0 to 10V Int. Ref.	5962-8958407YX	MN5216H/B	Micronetworks Incorporated
A/D Conv, 12-bit, 0 to 5V	5962-8959501XX	5245H/B	Micronetworks Incorporated
A/D Conv, 12-bit, 0 to 5V	5962-8959501YX	5245HF/B	Micronetworks Incorporated
A/D Conv, 12-bit, 0 to 5V, 3-state inp.	5962-8959502XX	5245AH/B	Micronetworks Incorporated
A/D Conv, 12-bit, 0 to 5V, 3-state inp.	5962-8959502YX	5245AHF/B	Micronetworks Incorporated
A/D Conv, 12-bit, +/-2.5V	5962-8959503XX	5246H/B	Micronetworks Incorporated
A/D Conv, 12-bit, +/-2.5V	5962-8959503YX	5246HF/B	Micronetworks Incorporated
A/D Conv, 12-bit, +/-2.5V, 3-state inp.	5962-8959504XX	5246AH/B	Micronetworks Incorporated
A/D Conv, 12-bit, +/-2.5V, 3-state inp.	5962-8959504YX	5246AHF/B	Micronetworks Incorporated
A/D Converter, 8-bit, flash	5962-8997901XX	SP1078B	Sipex Corporation
<b>AMPLIFIER, CURRENT</b>			
Amplifier, current, thick/thin film	7801301GX	CTS0002	CTS Corporation
Amplifier, current, thick/thin film	7801301XX	CTS0002XB	CTS Corporation
Amplifier, current, thick film	7801301XX	LH0002H/883B	National Semiconductor Corporation
Amplifier, current, thick film	7801301XX	ELH0002H/883B	Eiantec Incorporated
<b>DATA ACQUISITION SYSTEM</b>			
12-bit data acq. sys., 8-ch. diff.inp.	5962-8851401XX	HS9403B-8	Sipex Corporation
12-bit data acq. sys., 16ch. sng-ended	5962-8851402XX	HS9403B-16	Sipex Corporation

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TABLE II

PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
DATA ACQUISITION SYSTEM	5962-8851402YX	HS9403B-16FP	Sipex Corporation
12-bit data acq. sys., 16ch. sng-ended			
DIGITAL/ANALOG CONVERTER			
D/A Conv., 12-bit, Programmable	8300201JX	DAC87CBI	Analog Devices MED
D/A Conv., 12-bit, Programmable	8300201XX	DAC87	NO APPROVED SOURCE
D/A Conv., 8-bit, 0 to 4V Output	5962-8768801XX	MN3008H/B	Micronetworks Incorporated
D/A Conv., 8-bit, -2 to +2V Output	5962-8768802XX	MN3009H/B	Micronetworks Incorporated
D/A Conv., 12-bit, bipolar, linear, quad	5962-8850901XX	AD390SD/883B	Analog Devices MED
D/A Conv., 12-bit, bipolar, linear, quad	5962-8850902XX	AD390TD/883B	Analog Devices MED
D/A Conv., 12-bit, quad, bipolar	5962-8851001XX	AD394SD/883B	Analog Devices MED
D/A Conv., 12-bit, quad, bipolar	5962-8851002XX	AD394TD/883B	Analog Devices MED
D/A Conv., 12-bit, quad	5962-8851003XX	AD395SD/883B	Analog Devices MED
D/A Conv., 12-bit, quad	5962-8851004XX	AD395TD/883B	Analog Devices MED
D/A Conv., 14-bit, deglitched	5962-8851701XX	DAC-02310-112	ILC Data Device Corporation
D/A Conv., 14-bit, deglitched	5962-8851701YX	DAC-02311-112	ILC Data Device Corporation
D/A Conv., 14-bit, deglitched	5962-8851702XX	DAC-02310-113	ILC Data Device Corporation
D/A Conv., 14-bit, deglitched	5962-8851702YX	DAC-02311-113	ILC Data Device Corporation
D/A Conv., 12-bit, track/hold	5962-8854201XX	ADC00300-112	ILC Data Device Corporation
D/A Conv., 12-bit, track/hold	5962-8854201YX	ADC00302-112	ILC Data Device Corporation
D/A Conv., 12-bit, Quad	5962-8862901XX	HS 9342B	Sipex Corporation
D/A Conv., Triple, 8-bit, Video RAM	5962-8950901XX	RGBDAC3808H/B	Advanced Analog Incorporated
D/A Conv., 12-bit, binary input	5962-8952801XX	DAC-HBK/883B	Datel Incorporated
D/A Conv., 12-bit, two's complmt.	5962-8952802XX	DAC-HBK-2/883B	Datel Incorporated
D/A Conv., 16-bit, 0 to 10V & +/-5V Out	5962-8953101HXX	DAC-HPB/883B	Datel Incorporated
D/A Conv., 16-bit, +/- 10V Output	5962-8953102HXX	DAC-HPB-1/883B	Datel Incorporated
D/A Conv., 8-bit, w/ input register	5962-8971801XX	MN3020H/B	Micronetworks Incorporated
DRIVER, HIGH VOLTAGE			
Driver, High Voltage, 1.5 Amp.	5962-8761701XX	CTS000061B	CTS Corporation
Driver, High Voltage, 3.0 Amp.	5962-8761702XX	CTS000081B	CTS Corporation
UNIVERSAL DRIVER/RECEIVER			
Unvl Driver/Rec., Single Ch., Low Pwr.	5962-8959202XX	ARX3404	Aeroflex Laboratories Incorporated
Unvl Driver/Rec., Single Ch., Low Pwr.	5962-8959202YX	ARX3404FP	Aeroflex Laboratories Incorporated
Unvl Driver/Rec., Single Ch., Low Pwr.	5962-8959204XX	ARX3404-001	Aeroflex Laboratories Incorporated
Unvl Driver/Rec., Single Ch., Low Pwr.	5962-8959204YX	ARX3404-001FP	Aeroflex Laboratories Incorporated

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PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
<b>OPERATIONAL AMPLIFIER</b>			
Op amp, thick film	8001301ZX	ADLH0032G/883B	Analog Devices Computer Labs Div.
Op amp, thick film	8001301ZX	CTS0032ZB	CTS Corporation
Op amp, thick film	8001301ZX	ELH0032G/883E10003	Elantec Incorporated
Op amp, thick film	8001301ZX	LH0032G	National Semiconductor Corporation
Op amp, thick film	8001301ZX	TP0032-83	Teledyne Components-Dedham
Op Amp, Wideband, High Speed	5962-8959401XX	CLC231A8C	Comlinear Corporation
Op Amp, Wideband, Fast Settling	5962-8981301GX	HC1437/883	Hycamp Incorporated
Op Amp, Wideband, Fast Settling	5962-89813013X	HC1437L/883	Hycamp Incorporated
<b>POWER OPERATIONAL AMPLIFIER</b>			
Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	8508701ZX	CTS0041ZBNEW	CTS Corporation
Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	8508701ZX	LH0041G/883	National Semiconductor Corporation
Hi Pwr. Op Amp, Ext. Comp., 0.2A Out.	8508701ZX	ELH0041G/883B	Elantec Incorporated
Hi Pwr. Op Amp, Ext. Comp., 1.0A Out.	8508801YX	ELH0021K/E10036	Elantec Incorporated
Hi Pwr. Op Amp., Ext. Comp., 1.0A Out.	8508801YX	CTS0021ZB	CTS Corporation
Power Op amp., Wideband, Thick Film	8508901YX	ELH0101AK/E10039	Elantec Incorporated
Power Op amp., Wideband, Thick Film	8508902YX	ELH0101K/E10038	Elantec Incorporated
Power Op Amp, High Current	5962-8870101XX	OPA541SM/883B	Burr-Brown Corporation
Hi Pwr. Op Amp, Ext. Comp., 1.0A Out.	8508801YX	LH0021K	National Semiconductor Corporation
Op Amp, High Power	5962-8762001XX	OPA501VM/883B	Burr-Brown Corporation
<b>VIDEO OPERATIONAL AMPLIFIER</b>			
Video Op Amp, Fast Settling	5962-8857901XX	HOS-050A/883B	Analog Devices Computer Labs Div.
Video Op Amp, Fast Settling	5962-8857902XX	HOS-060SH/883B	Analog Devices Computer Labs Div.
<b>OPTOCOUPLER</b>			
Optocoupler, Dual Channel	8102801EX	6N134/883B	Hewlett-Packard
Optocoupler, Quad	8302401EX	6N140A/883B	Micropac Industries Incorporated
Optocoupler, Quad	8302401EX	6N140A/883B	Hewlett-Packard
Optocoupler, Dual Channel	5962-8767901EX	4N55/883B	Hewlett-Packard
Optocoupler, Single Channel, Hi Speed	5962-8876801PX	HCPL-5201	Hewlett-Packard
Optocoupler, Dual Channel, Hi Speed	5962-8876901PX	HCPL-5231	Hewlett-Packard
Optocoupler, AC/DC Logic Interface	5962-8947701PX	HCPL-5761	Hewlett-Packard
Optocoupler, Single Ch., High Speed	5962-8957001PX	HCPL-5401	Hewlett-Packard
Optocoupler, Dual Ch., Hi Spd, Com Sup	5962-8957101PX	HCPL-5431	Hewlett-Packard
Optocoupler, Dual Ch., Hi Spd, Sep Sup	5962-89571022X	HCPL-6431	Hewlett-Packard
Optocoupler, Dual Ch., Line Receiver	5962-8957201EX	HCPL-1931	Hewlett-Packard

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TABLE II

PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
<b>OPTOCOUPLER</b>			
Optocoupler, Dual Ch., Common supplies	5962-8978501PX	HCPL-5731	Hewlett-Packard
Optocoupler, Dual Ch., Separate spples	5962-89785022X	HCPL-6731	Hewlett-Packard
Optocoupler, Sngl Ch., Low Cur., Hi Gn.	5962-8981001PX	HCPL-5701	Hewlett-Packard
Optocoupler, Dual Channel	8102801EX	6N134/883B	Micropac Corporation
Optocoupler, Dual Channel	8102802PX	HCPL-5631	Hewlett-Packard Company
Optocoupler, Dual Channel	81028032X	HCPL-6631	Hewlett-Packard Company
Optocoupler, Single Ch., transistr out	5962-9085401PX	HCPL-5501	Hewlett-Packard Company
Optocoupler, Dual Channel	8102801EX	6N134/883B	Micropac Industries Incorporated
<b>REFERENCE, PRECISION VOLTAGE</b>			
Reference, Precision Voltage, +10V	8503001CX	HS2700SD/883B	Sipex Corporation
Reference, Precision Voltage, +10V	8503001XX	2700SD/883B	NO APPROVED SOURCE
Reference, Precision Voltage, +10V	8503001YX	2700SD/883B	Analog Devices MED
Reference, Precision Voltage, +10V	8503001YX	HC2700SD/883B	Hycomp Incorporated
Reference, Precision Voltage, +10V	85030013X	HC2700SLCC/883B	Hycomp Incorporated
Reference, Precision Voltage, +10V	8503002CX	HC2700UD/883B	Sipex Corporation
Reference, Precision Voltage, +10V	8503002XX	2700UD/883B	NO APPROVED SOURCE
Reference, Precision Voltage, +10V	8503002YX	2700UD/883B	Analog Devices MED
Reference, Precision Voltage, +10V	8503002YX	HC2700UD/883B	Hycomp Incorporated
Reference, Precision Voltage, -10V	85030023X	HC2700ULCC/883B	Hycomp Incorporated
Reference, Precision Voltage, -10V	8503003CX	HS2702SD/883B	Sipex Corporation
Reference, Precision Voltage, -10V	8503003XX	2702SD/883B	NO APPROVED SOURCE
Reference, Precision Voltage, -10V	8503003YX	2702SD/883B	Analog Devices MED
Reference, Precision Voltage, -10V	8503003YX	HC2702SD/883B	Hycomp Incorporated
Reference, Precision Voltage, -10V	85030033X	HC2702SLCC/883B	Hycomp Incorporated
Reference, Precision Voltage, +/-10V	8503004CX	HS2702UD/883B	Sipex Corporation
Reference, Precision Voltage, +/-10V	8503004XX	2702UD/883B	NO APPROVED SOURCE
Reference, Precision Voltage, +/-10V	8503004YX	2702UD/883B	Analog Devices MED
Reference, Precision Voltage, +/-10V	8503004YX	HC2702UD/883B	Hycomp Incorporated
Reference, Precision Voltage, +/-10V	8503005CX	HC2702ULCC/883B	Hycomp Incorporated
Reference, Precision Voltage, +/-10V	8503005YX	HS2701SD/883B	Sipex Corporation
Reference, Precision Voltage, +/-10V	8503005YX	2701SD/883B	Analog Devices MED
Reference, Precision Voltage, +/-10V	8503005YX	HC2701SD/883B	Hycomp Incorporated
Reference, Precision Voltage, +/-10V	85030053X	HC2701SLCC/883B	Hycomp Incorporated
Reference, Precision Voltage, -10V	8503006CX	HS2701UD/883B	Sipex Corporation
Reference, Precision Voltage, -10V	8503006YX	2701UD/883B	Analog Devices MED
Reference, Precision Voltage, -10V	8503006YX	HC2701UD/883B	Hycomp Incorporated
Reference, Precision Voltage, -10V	85030063X	HC2701ULCC/883B	Hycomp Incorporated

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PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER 4/	SOURCE(S)
<b>R/D CONVERTERS</b>			
* R/D Conv., 400Hz., 11.8V	5962-8990801XX	SDC14565-114	ILC Data Device Corporation
* R/D Conv., 400Hz., 11.8V	5962-8990802XX	SDC14565-115	ILC Data Device Corporation
* R/D Conv., 400Hz., 80Hz. BW, 11.8V	5962-8990803XX	SDC14565-616	ILC Data Device Corporation
* R/D Conv., 400Hz., 11.8V, trimmed velocity	5962-8990804XX	SDC14566-115	ILC Data Device Corporation
<b>R/S TO DIGITAL CONVERTERS</b>			
* R/S to Dig. Conv., 400Hz., +/-2.6 arcmin.	5962-8768701XX	HSDC-8920A-883B	ILC Data Device Corporation
* R/S to Dig. Conv., 400Hz., +/-4.0 arcmin.	5962-8768702XX	HSDC-8920A-883B	ILC Data Device Corporation
* R/D or S/D Converter, +/-2.6 arcmin acc	5962-9055401XX	HSDC-8915A-883B	ILC Data Device Corporation
* R/D or S/D Converter, +/-4.0 arcmin acc	5962-9055402XX	HSDC-8915-883B	ILC Data Device Corporation
<b>S/D CONVERTERS</b>			
* S/D Conv., 90V, 400Hz., 2 min. accuracy	5962-8949801XX	SDC14561-114	ILC Data Device Corporation
* S/D Conv., 90V, 400Hz., 1 min. accuracy	5962-8949802XX	SDC14561-115	ILC Data Device Corporation
* S/D Conv., 11.8V, 400Hz., 2 min. accuracy	5962-8949901XX	SDC14560-114	ILC Data Device Corporation
* S/D Conv., 11.8V, 400Hz., 1 min. accuracy	5962-8949902XX	SDC14560-115	ILC Data Device Corporation
* S/D Conv., 11.8V, 400Hz., 80 HzBW, 1 min	5962-8949903XX	SDC14560-605	ILC Data Device Corporation
* S/D Converter, 400Hz., 11.8V, acc. +/-2.6	5962-9070701HXX	SDC14500-635	ILC Data Device Corporation
* S/D Converter, 400Hz., 11.8V, acc. +/-4.0	5962-9070702HXX	SDC14500-636	ILC Data Device Corporation
* S/D Converter, 60Hz, 90V, acc. +/-2.6 arcmin	5962-9070703HXX	SDC14502-605	ILC Data Device Corporation
* S/D Converter, 60Hz, 90V, acc. +/-4.0 arcmin	5962-9070704HXX	SDC14502-606	ILC Data Device Corporation
<b>SAMPLE/HOLD</b>			
* Sample/Hold Multiplexer, Dual 8-ch.	5962-8956501XX	HS362SB	Sipex Corporation
* Sample/Hold Amp., 16-bit	5962-8956601HXX	HS97167B	Sipex Corporation
<b>VOLTAGE FOLLOWER</b>			
* Hi Spd. Buffr. Amp., Vol. Fol., FET in	8001401ZX	CTS00332B	CTS Corporation
* Hi Spd. Buffr. Amp., Vol. Fol., FET in	8001401ZX	LH0033G	National Semiconductor Corporation
* Hi Spd. Buffr. Amp., Vol. Fol., FET in	8001401ZX	TF0033-83	Teledyne Components-Dedham
* Hi Spd. Buffr. Amp., Vol. Fol., FET in	8001401ZX	ADLH0033G/883B	Analog Devices Computer Labs Div.
* Hi Spd. Buffr. Amp., Vol. Fol., FET in	8001401ZX	ELH0033G/883B	Elangtec Incorporated
* Buffer Amp, FET in.	5962-8965901XX	EL2004G/883B	Elangtec Incorporated
* Buffer Amp, FET in.	5962-8965901XX	EL2004L/883B	Elangtec Incorporated

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PRODUCT TYPE/DESCRIPTION	STANDARDIZED MILITARY DRAWING (SMD)	MANUFACTURER SIMILAR PART NUMBER <sup>4/</sup>	SOURCE(S)
VOLTAGE REGULATOR Voltage Regulator, Dual, +15 & -15V	5962-8949001XX	OM7509SC/883B	Omnirel Corporation

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