

**ACTIVE SUPPLIER ASSESSMENT PROGRAM**  
**(ASAP)**

**CORE SUPPLIERS LISTING**

**Ashok Sharma**  
**Goddard Space Flight Center**

**08/15/95**

## Active Supplier Assessment Program (ASAP)

---

---

The Core Suppliers Listing (CSL) is a listing of manufacturers who are considered preferred suppliers of monolithic microcircuits, hybrid microcircuits, transistors or diodes by NASA. The CSL will eventually consist of two parts, i.e., Part I and Part II.

Part I follows, and includes only those suppliers who satisfy the following criteria:

- Are listed in QML-38535 (Qualified Manufacturers List of Advanced Microcircuits Qualified Under Military Specification MIL-PRF-38535), QML-38534 (“Qualified Manufacturers List of Custom Hybrid Microcircuits Qualified under Military Specification List of Custom Hybrid Microcircuits Qualified under Military Specification MIL-H-38534”) or QPL-19500 (“Qualified Products List of Products Qualified under Military Specification MIL-S-19500)
- Offer one or more products which are currently listed in either MIL-STD-975 or the GSFC PPL
- Offer QML/QPL products to quality assurance levels which are considered suitable for spaceflight use
- Have established a history of providing high reliability parts to NASA.

(The CSL, Part II, will be published later and will include active part suppliers, who are not necessarily QML/QPL-certified, but who satisfy the following criteria:

- Manufacturers parts on DESC certified and qualified lines
- Have compiled a satisfactory history of supplying high reliability parts which are currently procured through contractor (or OEM) SCDs
- Manufacture parts to NASA specifications
- Are certified and qualified by ESA/NASDA to provide parts to ESA/SCC or NASDA specifications)

## Active Supplier Assessment Program (ASAP)

---

---

The CSL is intended to assist NASA project management, parts/reliability engineers and designers in avoiding EEE part reliability/mission schedule problems which can result when parts are procured from unproven suppliers or suppliers who show recent trends indicative of unsatisfactory performance.

For each manufacturer listed in the CSL, Part I, herein, there is accompanying information related to the processing technologies and product lines for which the manufacturer is considered a core supplier and the name/phone number of a company representative to whom questions may be directed.

The information described in this report was obtained from NASA GSFC Preferred Parts List (PPL-21), NASA Standard Electrical, Electronic and Electromechanical parts list (MIL-STD-975), Qualified Manufacturers List for Monolithic Microcircuits (QML-38535), Qualified Manufacturers list for Custom Hybrid Microcircuits (QML-38534), and Qualified Products List for Diodes and Transistors (QPL-19500).

For convenience, the listings have been grouped by part commodity. Introductory remarks for each section provide an explanation of the information contained therein. Please note that the manufacturer's listing and the accompanying information are considered accurate at the time of issue of this document. However, the semiconductor industry is one known for rapid change of technology and development including fabrication processes and assembly locations. As a result, the listings are subject to change without notice; revisions or amendments will be issued, as necessary.

For additional information regarding this Core Suppliers Listing, please contact:

Ashok Sharma  
Goddard Space Flight Center  
M/S 311  
Greenbelt, Maryland 20771  
Telephone: 301-286-6165  
E-Mail: [ashok.sharma@ccmail.gsfc.nasa.gov](mailto:ashok.sharma@ccmail.gsfc.nasa.gov)

**Section I**  
**Microcircuits**

## Microcircuits

1.	Introduction.....	I-1
2.	American Microsystems, Inc.....	I-3
3.	Analog Devices.....	I-4
4.	Cypress Semiconductor.....	I-5
5.	Harris Semiconductor Products.....	I-6
6.	Honeywell SSEC.....	I-7
7.	Intel Corporation.....	I-8
8.	Linfinity.....	I-9
9.	Loral Federal Systems Corporation.....	I-10
10.	National Semiconductor Corporation.....	I-11
11.	Philips Semiconductor.....	I-12
12.	Siliconix.....	I-13

Active Supplier Assessment Program (ASAP)

---

---

13. Texas Instruments.....I-14

14. United Technologies Microelectronics Center.....I-15

## Monolithic Microcircuits

### Introduction

The manufacturers listed herein meet all of the requirements of MIL-PRF-38535 which supersedes MIL-M-38510. MIL-PRF-38535, which is a performance-based specification which contains criteria for verifying compliance, instead of methods and requirements. The accompanying information provided for each manufacturer is explained below:

Address,  
Cage Code,  
and Contact: Self-explanatory.

QML Status: "Full QML Certification/Qualification" --- Manufacturer meets all MIL-PRF-38535 certification and qualification requirements.

"Transitional QML Certification/Qualification" --- An allowance granted to JAN MIL-M-38510 manufacturers to transition their QPL, SMD, and MIL-STD-883 compliant devices to the QML-38535 program. This allowance is based on information provided by the JAN manufacturers that the included facilities and products have been and are meeting MIL-STD-883 Screening Method 5004 and Quality Conformance Inspection Method 5005. To be eligible for transitional certification, the JAN manufacturer must have submitted a plan for achieving full MIL-PRF-38535 QML within a specified period of time.

Note: Both full and transitional QML certified/qualified manufacturers are authorized to use the "QML" or "Q" certification mark on each microcircuit produced under the certified QML envelope of processes, materials, and facilities.

Manufacturer  
Audits/Surveys: Lists dates of audits and/or surveys performed at the suppliers' facilities and the name of the agency/company which was responsible; also indicates whether or not the suppliers were approved.

**Note: Information contained herein is subject to change by the manufacturer at any time.**

## Monolithic Microcircuits (con't.)

**QML Class:** A single letter which identifies the quality assurance level of the QML microcircuit. This identifier is dependent upon whether or not the manufacturer is a former MIL-M-38510 QPL supplier. There are four letters which can be used to differentiate products of importance to NASA. Following is a brief explanation (for additional information, see MIL-PRF-38535):

- “B” --- Designates a microcircuit which meets the Class B requirements of Appendix A of MIL- PRF - 38535. This quality assurance level is applicable to MIL-M-38510 parts manufactured by MIL-M-38510 suppliers who have transitioned or who are transitioning to QML. It was formerly MIL-M-38510 Class B.
- “S” --- Designates a microcircuit which meets the Class S requirements of Appendix A of MIL- PRF - 38535. This quality assurance level is also applicable to MIL-M-38510 parts manufactured by MIL-M-38510 suppliers who have transitioned or who are transitioning to QML. It was formerly MIL-M-38510 Class S.
- “Q” --- Designates a standard QML MIL- PRF -38535 microcircuit. This quality assurance level is applicable to parts which meet the standard requirements of MIL- PRF-38535. When “Q” is used in the part identification number (PIN), it should not be confused with the “Q” or “QML” certification logo which is also marked on each package and which is separate from the part number.
- “V” --- Designates a space level QML MIL- PRF-38535 microcircuit. This quality assurance level is applicable to parts which meet the standard requirements of MIL- PRF-38535 as supplemented by Appendix B of this document.

**Note:** Specification MIL-M-38510 has been inactivated for new designs.

**Technology:** Wafer process technology which has been certified/qualified.

**Product Type:** Generic functional description of products which have been QML certified/qualified.

**Certified/  
Qualified**

**Facility:** Location of certified/qualified facility (ies) which is (are) currently listed in QML-38535.

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**American Microsystems, Inc.**

Address	Cage Code	QML Status	MFR Audits/Surveys	Class	Contact
2300 Buckskin Road Pocatello, ID 83201	31471	Full QML Certification/ Qualification	DESC QML -1/94 (Approved)	Q	Dave Locke 208-234-6708

Technology: 1.25 $\mu$ m Dual Layer Metal (DLM) CMOS	Product Type: Gate Arrays
---	---------------------------

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Pocatello, ID	San Jose, CA	Pocatello, ID	Pocatello, ID

Package Information:

Package Type:	PGA	Chip Carrier
Lead Count:		28-256
Matrix Size:	64-476	Gold
Lead Finish:	Gold	

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Analog Devices**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
804 Wilburn Street Wilmington, MA 01887	51640	Transitional QML Certification/ Qualification	DESC QM-1/94 (Approved)	B,Q	Jim Kaufman 617-937-2470

Technology: Bipolar FLASH (high speed bipolar) STAT I (high speed bipolar-ECL compatible) Complementary Bipolar BIMOS ABCMOS (MOS-double polysilicon capacitors)	Product Type: Data converters References
---	---

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Wilmington, MA	Wilmington, MA Manila, Philippines	Wilmington, MA Manila, Philippines	Wilmington, MA Manila, Philippines

**Package Information:**

Package Type:	Flat Pack	DIP	Chip Carrier	Metal Can
Lead Count:	2	14-28	20-44	02-12
Lead Finish:	Gold	Solder	Solder	Solder
Lead Pitch:	.050 inch	1 inch	0.050 inch	1 to 4 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Cypress Semiconductor**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
3901 North First Street San Jose, CA 95134-1599	65786	Transitional QML Certification/ Qualification	DESC QML-2/94 (Approved)	B,Q	Bill Bennett 617-937-2470

Technology: 1.2µm, 1.0µm, 0.8µm, and 0.64µm Single Layer Metal (SLM) and Dual Layer Metal (DLM) CMOS and BICMOS	Product Type: SRAMs
--	---------------------

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Round Rock, TX Bloomington, MN	Alphatek - Bangkok, Thailand	San Jose, CA Alphatek - Bangkok, Thailand	San Jose, CA

**Package Information:**

Package Type:	DIP
Lead Count:	16-18
Lead Finish:	Solder Dip
Lead Pitch:	0.014-0.026 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Harris Semiconductor Products**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
2401 Palm Bay Road Northeast Palm Bay, FL 32905	34371	Transitional QML Certification/ Qualification	DESC QML-8/93 (Approved)	Q,V, B,S	Peter Brooks 407-724-7783

Technology: Bipolar CMOS Linear CMOS Self Aligned Junction Isolation (SAJI)	Product Type: Memories Logics Switches
---	--

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Palm Bay, FL Findlay, OH	Palm Bay, FL Kuala Lumpur, Malaysia	Palm Bay, FL Kuala Lumpur, Malaysia	Palm Bay, FL Kuala Lumpur, Malaysia

**Package Information:**

Package Type:	Chip Carrier	PGA	DIP	Metal Can
Lead Count:	20-44		8-40	8-12
Matrix Size:		68-85	N/A	N/A
Lead Finish:	Solder/Gold	Solder	Solder/Gold	Solder/Gold
Lead Pitch:	0.050 inch	0.100 inch	0.100 inch	N/A

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Honeywell SSEC**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
12001 State Highway 55 Plymouth, MN 55441-4799	34168	Full QML Certification/ Qualification	DESC QML-5/92 (Approved)	Q,V	Bret Rinehart 612-954-2956

Technology: 1.2µm RICMOS III 0.8µm RICMOS IV (Note 1)	Product Type: SRAMs Custom, semi-custom, standard cell, gate array ASIC
---	--

Note 1: RICMOS is a registered trademark used to describe Honeywell's radiation insensitive CMOS process

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Plymouth, MN	Plymouth, MN	Plymouth, MN	Plymouth, MN

**Package Information:**

Package Type:	Flat Pack
Lead Count:	36-256
Lead Finish:	Gold
Lead Pitch:	0.020-0.040 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Intel Corporation**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
500 West Chandler Boulevard Chandler, AZ 85226-4702	34649	Full QML Certification/ Qualification	DESC QML-10/90 (Approved)	Q,B	Greg Mather 602-554-8450

Technology: 1.0µm and 0.8µm CMOS 1.5µm HMOS III (Note 1)	Product Type: Microprocessors Micro-peripherals
---	--

Note: HMOS III is Intel's terminology used to describe their enhanced third generation MOS process.

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Rio Rancho, NM Chandler, AZ	Chandler, AZ Manila, Philippines Penang, Malaysia	Chandler, AZ Aloha, OR Manila, Philippines Penang, Malaysia	Chandler, AZ Manila, Philippines Penang, Malaysia

**Package Information:**

Package Type:	Pin Grid	Flat Pack	DIP	Chip Carrier
Lead Count:	N/A	68-196	18-48	28-244
Matrix Size:	62-208	N/A	N/A	N/A
Lead Finish:	Solder	Solder	Solder	Solder
Lead Pitch:	0.100 inch	0.025-0.050 inch	3-6 inch	0.050 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Linfinity**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
11861 Western Avenue Garden Grove, CA 92641-2119	34333	Transitional QML Certification/ Qualification	DESC QML - 8/93 (Approved)	B,Q	Tim Miller 714-898-8121

Technology: Bipolar	Product Type: Regulators Operational amplifiers Drivers Transistor arrays
---------------------	---

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Garden Grove, CA	Garden Grove, CA Philippines (PSI)	Garden Grove, CA	Garden Grove, CA

Package Information:

Package Type:	Flat Pack	DIP	Chip Capacitor	Metal Can
Lead Count:	10-24	08-18	20	3-12
Lead Finish:	Solder/Gold	Solder	Solder	Solder
Lead Pitch:	03-.05 inch	0.0100	05 inch	

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Loral Federal Systems Corporation**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
9500 Godwin Drive Manassas, VA 22110-4198	52088	Full QML Certification/ Qualification	DESC QML -12/91 (Approved)	Q,V	Paul Nixon 703-367-1378

<b>Technology:</b> 1.0µm Radiation Hardened CMOS (RHCMOS) 0.8 µm RHCMOS-E VLSI Chip on Silicon (VCOS) 0.5 µm “Half Micron” CMOS (HMCMOS)	<b>Product Type:</b> SRAMs Memories Microprocessors Custom and gate array ASICs
---	--

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Manassas, VA	Manassas, VA	Manassas, VA	Manassas, VA

**Package Information:**

Package Type:	Flat Pack
Lead Count:	32-308
Lead Finish:	Gold
Lead Pitch:	0.250 - 0.6 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**National Semiconductor Corporation**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
2900 Semiconductor Drive Santa Clara, CA 95052-8090	27014	Full QML Certification/ Qualification	DESC QML-4/95 (Approved)	B,S, Q,V	Susan Davis 408-721-3161

Technology: Bipolar Linear CMOS	Product Type: Standard products Logics Memories Interfaces Gate arrays
---------------------------------------	--

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Santa Clara, CA West Jordan, UT South Portland, ME Arlington, TX Greenock, Scotland	South Portland, ME Singapore Exchange OFS, Philippines Malacca, Malaysia	Santa Clara, CA South Portland, ME Singapore	South Portland, ME Singapore Exchange OFS, Philippines Santa Clara, CA

Package Information:

Package Type:	Flat Pack	DIP	PGA	Chip Carrier	Metal Can
Lead Count:	10-256	8-52		20-84	2-15
Matrix Size:	-		8x8/21x21		N/A
Lead Finish:	Gold/Solder	Gold/Solder	Gold	Solder/Dip	Gold/Solder
Lead Pitch:	0.020-0.050 inch	0.100 inch	0.100 inch	0.050 inch	0.100-0.600 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Philips Semiconductor**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
811 East Arques Avenue Sunnyvale, CA 94088	18324	Transitional QML Certification/ Qualification	DESC QML-3/94 (Approved)	B,Q	Lou Johnson 408-991-2720

Technology: Bipolar memory Linear MCO (bipolar-microcontroller)	Product Type: Standard products Memories Linears Microcontrollers
---	--

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Albuquerque, NM Sunnyvale, CA	Alphatek - Bangkok, Thailand	Bangkok, Thailand Sunnyvale, CA Alphatek - Bangkok, Thailand ISE IN - San Jose, CA Albuquerque, NM	QPL Labs Bangkok, Thailand Alphatek - Bangkok, Thailand

Package Information:

Package Type:	DIP	Flat Pack
Lead Count:	16-24	24
Lead Finish:	Solder	Solder

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Siliconix**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
2201 Laurelwood Road Santa Clara, CA 95056-0951	17856	Transitional QML Certification/ Qualification	DESC QML-10/93 (Approved)	B,Q	Liz Korntved 408-970-5260

Technology: Bipolar Metal Gate II Silicon Gate I C/DMOS (Note 1)	Product Type: Analog switches
---	-------------------------------

Note: C/DMOS is Siliconix' terminology used to describe the combination of CMOS (logic) and DMOS (power) elements in a single MOS process.

**Certified/Qualified Facilities:**

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Santa Clara, CA	Dynesem - Manila, Philippines Santa Clara, CA	Santa Clara, CA Siliconix - Manila, Philippines	Dynesem - Manila, Philippines Santa Clara, CA Siliconix - Manila, Philippines

**Package Information**

Package Type:	Flat Pack	DIP	Chip Carrier	Metal Can
Lead Count:	14-16	8-28	20	10
Lead Finish:	Solder/Gold	Solder/Gold	Gold/Solder	Gold/Solder

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**Texas Instruments**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
Post Office Box 60448 Midland, TX 79711-0448	01295	Full QML Certification/ Qualification	DESC QML-7/92 (Approved)	B,Q	Steve Miller 915-561-6614

Technology: Bipolar Linear CMOS	Product Type: Standard products Logics
---------------------------------------	---

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Sherman, TX Dallas, TX Houston, TX	Taipei, Taiwan	Taipei, Taiwan	Taipei, Taiwan

Package Information:

Package Type:	Flat Pack	DIP	Chip Carrier
Lead Count:	14-24	8-24	20
Lead Finish:	Solder	Solder	Solder

**Note: Information contained herein is subject to change by the manufacturer at any time.**

Active Supplier Assessment Program (ASAP)

**United Technologies Microelectronics Center**

Address	Cage Code	QML Status	Mfr. Audits/Surveys	Class	Contact
1575 Garden of the Gods Road Colorado Springs, CO 80907-3486	5342	Transitional QML Certification/ Qualification	DESC QML-9/93 (Approved)	Q,V	Myles Standish 719-594-8000

Technology: 1.5µm and 1.2µm CMOS	Product Type: Memories CMOS gate arrays Bus Interfaces
----------------------------------	--

Certified/Qualified Facilities:

Wafer Fabrication	Assembly	Electrical Test	Environmental Test
Colorado Springs, CO	Colorado Springs, CO	Colorado Springs, CO	Colorado Springs, CO

Package Information:

Package Type:	Flat Pack	PGA	DIP
Package Size:	28-304	68-281	24-40
Matrix Size:		8x8/18x18	
Lead Finish:	Solder/Gold	Solder/Gold	Solder/Dip
Lead Pitch	020-.050 MIL	1 inch	0.50 inch

**Note: Information contained herein is subject to change by the manufacturer at any time.**