

**Specification Details:**

Specification: MIL-PRF-38535  
Title: Advanced Microcircuits  
Federal Supply Class (FSC): 5962  
Conventional: No  
Specification contains quality assurance program: Yes  
MIL-STD-790 Established Reliability & High Reliability: No  
MIL-STD-690 Failure Rate Sampling Plans & Procedures: No  
Weibull Graded: No  
Specification contains space level reliability requirements: Yes  
Specification allows test optimization: Yes

**Contact Information:**

Office of Primary Involvement: Custom Devices Branch, DLA Land and Maritime - VQC  
Primary Qualifying Activity Contact: 614-692-0606, e-mail: vqc.vt@dla.mil  
Secondary Qualifying Activity Contact: 614-692-0589, e-mail: vqc.at@dla.mil

**Notes:**

If a manufacturer desires to have test data considered for qualification, he must be certified and perform all required qualification tests; the qualification sample must be produced under a valid authorization to test with DLA Land and Maritime-VQ certified materials and manufacturing techniques; and he must comply with the requirements specified in MIL-PRF-38535 prior to the start of any testing.

The listing of microcircuit manufacturing lines in the QML applies only to products produced in the plant(s) specified herein. Therefore, only those products that have been manufactured, assembled, and tested on the certified/qualified lines herein, can be supplied as qualified microcircuit QML devices.

Microcircuits manufactured, assembled, and tested in accordance with MIL-PRF-38535 shall bear the "QML" certification mark or the "Q" abbreviation. Products manufactured, assembled, and tested shall meet all the provisions of MIL-PRF-38535; and shall be manufactured on the DLA Land and Maritime-VQ certified lines as indicated herein. The information contained in this QML reflects the actual manufacturing lines, materials, and manufacturing construction techniques of the particular test sample(s). Any product represented as being compliant shall be manufactured on the lines/flows using the material 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.

1/ This note has been removed.

2/ Package lead counts are listed by the maximum number of leads covered by the qualification. If the manufacturer's package outline drawing is covered by MIL-STD-1835, then the case outline letter will be listed.

3/ The manufacturer has certified that the advanced microcircuits listed were/are being built, tested, and shipped, using the certified/qualified lines/flows, processes, and materials, and as defined by a completed Standardized Military Drawing (SMD) or MIL-M-38510 part number are in full compliance with MIL-PRF-38535.

4/ Caution. Do not use this number for item acquisition. Items acquired to this number are NOT QML devices and may not satisfy the performance, quality, or reliability requirements of the military.

5/ All devices are in the military temperature range -55 to +125°C, unless otherwise specified in the SMD

6/ Devices found in this table meet the qualification requirement of MIL-PRF-38535 but are not covered by a Standardized Microcircuit Drawing (SMD). Please contact Mr. Tom Hess (614) 692-0547 concerning the possibility of covering these devices with an SMD.

7/ Contact Texas Instruments for plastic package availability for a given device type.

8/ This product is being actively supplied under MIL-PRF-38535 and is considered acceptable for use in new designs.

9/ SMD devices and MIL-M-38510 slash sheet devices which meet the RHA requirements of MIL-PRF-38535 shall be marked with the appropriate RHA designator M, D, P, L, R, F, G, or H replacing the dash "-" in the PIN as indicated.

Only the highest RHA level that the device is qualified for shall be listed in this QML; however, at the request of the customer, the manufacturer is authorized to supply any lower RHA level device. Upon request of the customer, the non-RHA PIN designated with a dash (-) may be supplied at the option of the manufacturer. The manufacturer may also opt to submit a certificate of compliance to have the non-RHA PIN listed in addition to the RHA PIN in this QML.

10/ The lead finish indicated in the Section I Table I listing is the most readily available from the manufacturer listed for the part. The manufacturer is authorized to supply other lead finishes than that listed provided that further testing/qualification is performed by the manufacturer on the other lead finish(es). The user needs to contact the manufacturer to determine the availability of other lead finishes not listed herein.

Important Information concerning User Decision to Procure Texas Instruments QML Devices in Plastic Packaging Technology

1. The user must carefully research the device end-use applications to determine if plastic packaging is appropriate.
2. Because plastic packages are not hermetic, if product is to be stored for a certain period in uncontrolled conditions, "dry bag" packaging may be required. TI will identify devices that require dry bag packaging. It is the buyer's responsibility to insure that these conditions are maintained over

the storage life of the product.

- 3. Plastic packages typically do not dissipate heat as well as ceramic or metal packages.
- 4. The QML packaging technology flow is typically the same as commercial through assembly, therefore, users cannot require "specials".

These are some of the basic differences between TI's plastic commercial Off the Shelf (COTS) and plastic QML.

1. TRACEABILITY

COMMERCIAL OFF THE SHELF - LIMITED  
QML - YES

2. BURN-IN

COMMERCIAL OFF THE SHELF - NOT UNLESS COMMERCIAL PERFORMS  
QML - NOT UNLESS COMMERCIAL PERFORMS 1/

3. PRODUCT CHANGE NOTIFICATION

COMMERCIAL OFF THE SHELF - LIMITED  
QML - YES

4. AVAILABILITY

COMMERCIAL OFF THE SHELF - VARIES BY DEVICES (COULD BE AS LITTLE AS 2 YEARS)  
QML - EXTENDED SUPPORT WITH OPPORTUNITY FOR LIFETIME BUY

5. MILITARY TEMPERATURE TESTING

COMMERCIAL OFF THE SHELF - NO  
QML - YES

6. AVAILABILITY OF QUALIFICATION AND RELIABILITY DATA

COMMERCIAL OFF THE SHELF - LIMITED  
QML - YES

7. FAILURE ANALYSIS FOR FIELD FAILURES

COMMERCIAL OFF THE SHELF - LIMITED  
QML - YES

8. EXTENSIVE BACKGROUND INFORMATION IN USING PRODUCT IN MILITARY ENVIRONMENTS

COMMERCIAL OFF THE SHELF - LIMITED  
QML - YES

9. SUPPORT FOR SPECIAL QUALITY CLAUSES AND/OR FLOW-DOWN REQUIREMENTS

COMMERCIAL OFF THE SHELF - NO  
QML - YES

For more detailed information the user may contact:

- TI/QML Program Manager/(915) 561-6614
- DLA Land and Maritime-VQC/Mr. Andy Thacker/(614) 692-0589
- Rome Lab/Mr. James Reilly/(315) 330-4055
- NASA/Mr. Nick Vermani/(301) 731-8902
- DLA Land and Maritime-VAC/Mr. Tom Hess/(614) 692-0547

1/ TI's QML plastic product offering follows TI's BEST COMMERCIAL PRACTICE approach. The Military and Commercial plastic flows are essentially the same with the exception of extended Military temperature testing in accordance with the SMD. Therefore, a QML plastic device will not receive burn-in unless the commercial device also receives burn-in (regardless of test optimization results). Life test is performed during initial qualification and as part of periodic reliability monitors. In addition, some QML plastic lead frames are palladium and burn-in may degrade the solderability of the palladium lead frame.

**Part Configuration:**

SMD PINs shall be as follows:

Federal Stock Class Designator	RHA Designator	Drawing Designator	Device Type	Device Class	Case Outline	Lead Finish
5962	M,D,P,L,R,F, G,or H	XXXXX	ZZ	M,N,Q,V, or T	Y	Y

Device specification documents, originally published prior to 27 July 1990, shall be as follows:

Military Designator	RHA Designator	Device Specification Designator	Device Type	Device Class	Case Outline	Lead Finish
M38510	H or /	XXX	ZZ	B or S	Y	Y

## Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

### Aeroflex-Colorado Springs

#### **Quality System Information**

Aeroflex-Colorado Springs  
4350 Centennial Boulevard  
Colorado Springs, CO 80907-3486  
Website: <http://www.aeroflex.com/ams/aboutus/au-cos.cfm>  
CAGE Code: 65342  
Company Contact: Jackie Mortensen, (719) 594-8026  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q and V

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#### **Technology Types:**

0.6um, 0.8um, 1.2um, 1.5 um and 1.2 um CMOS, and 0.18, 0.25, 0.35 um logic

#### **Product Types:**

memory, CMOS gate array, linear Bipolar

#### **Design Center(s)**

Location: Colorado Springs CO  
Line: CMOS Gate Array  
Flow: 63202 Rev A

#### **Mask Development Center(s)**

Location: Colorado Springs CO  
Line: CMOS Gate Array  
Flow: 63003 Rev M

#### **Wafer Fabrication Operation(s)**

Location: TSMC  
Line: 0.18 um,0.25um ,0.35um  
Flow: Antifuse Logic  
Location: Camas WA  
Line: 0.18 um  
Flow: Logic  
Location: Pocatello ID  
Line: 0.6um , 0.8um CMOS  
Flow: 141280/121260 1.2 um; 14101/14102 1.5 um  
Location: Manassas VA  
Line: 0.8 um CMOS  
Location: Colorado Springs CO  
Line: CMOS Gate Array 1.5 & 1.2  
Flow: 141280/121260 1.2um; 14101/14102 1.5um  
Location: Camas WA  
Line: 0.25 um  
Flow: ASIC Logic

#### **Assembly Operation(s)**

Location: Colorado Springs CO  
Line: Flatpack, DIP, PGA & LCC packages  
Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

#### **Electrical Test Operation(s)**

Location: Colorado Springs CO  
Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

#### **Environmental Test Operation(s)**

Location: Colorado Springs CO  
Line: CMOS Gate Array  
Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Aeroflex-Colorado Springs**

**Quality System Information**

Aeroflex-Colorado Springs  
4350 Centennial Boulevard  
Colorado Springs, CO 80907-3486  
Website: <http://www.aeroflex.com/ams/aboutus/au-cos.cfm>  
CAGE Code: 65342  
Company Contact: Jackie Mortensen, (719) 594-8026  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q and V

---

**Technology Types:**

0.6um, 0.8um, 1.2um, 1.5 um and 1.2 um CMOS, and 0.18, 0.25, 0.35 um logic

**Product Types:**

memory, CMOS gate array, linear Bipolar

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
DIP	28-304		solder	50-100 mil
Flatpack	28-352		solder/gold	20-50 mil
LCC	84 max		solder/gold	50 mil
PGA		8x8/18x18	solder/gold	100 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Amkor Technology**

**Quality System Information**

Amkor Technology  
KM 22 East Service Road  
Mauntinlupa City, PH  
CAGE Code: N/A  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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**Technology Types:**

Contract assembly test house

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Bina, Laguna Philippines  
Line: Flex Array  
Flow: 02-0501-1632  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SOIC  
Flow: 001-0501-2302  
Location: Bina, Laguna Philippines  
Line: PBGA  
Flow: 02-0501-0993  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PSOP2  
Flow: 001-0501-2950  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PDIP  
Flow: 001-0501-2300  
Location: Muntinlupa City, Metro Manila Philippines  
Line: QFP  
Flow: 001-0501-2306  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PLCC  
Flow: 001-0501-2304  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SSOP  
Flow: 001-0501-2319  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PSOP3  
Flow: 001-0501-2952  
Location: Muntinlupa City, Metro Manila Philippines  
Line: TSOP  
Flow: 001-0501-2317  
Location: Muntinlupa City, Metro Manila Philippines  
Line: TSSOP  
Flow: 001-0501-2317  
Location: Bina, Laguna Philippines  
Line: SBGA  
Flow: 001-0501-2870  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SIP  
Flow: 001-0501-2310  
Location: Bina, Laguna Philippines  
Line: CABGA  
Flow: 02-0501-1251  
Location: Muntinlupa City, Metro Manila Philippines  
Line: TSSOP  
Flow: 001-0501-2317

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Amkor Technology**

**Quality System Information**

Amkor Technology  
KM 22 East Service Road  
Mauntinlupa City, PH  
CAGE Code: N/A  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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**Technology Types:**

Contract assembly test house

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Muntinlupa City, Metro Manila Philippines  
Line: TQFP  
Flow: 001-0501-2322  
Location: Muntinlupa City, Metro Manila Philippines  
Line: Hermetic  
Flow: 02-0501-1904  
Location: Muntinlupa City, Metro Manila Philippines  
Line: Hermetic  
Flow: 02-0501-1904  
Location: Bina, Laguna Philippines  
Line: PBGA  
Flow: 02-0501-0993  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PSOP2  
Flow: 001-0501-2950  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PDIP  
Flow: 001-0501-2300  
Location: Muntinlupa City, Metro Manila Philippines  
Line: QFP  
Flow: 001-0501-2306  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SIP  
Flow: 001-0501-2310  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SOIC  
Flow: 001-0501-2302  
Location: Muntinlupa City, Metro Manila Philippines  
Line: TQFP  
Flow: 001-0501-2322  
Location: Bina, Laguna Philippines  
Line: Flex Array  
Flow: 02-0501-1632  
Location: Muntinlupa City, Metro Manila Philippines  
Line: SSOP  
Flow: 001-0501-2319  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PSOP3  
Flow: 001-0501-2952  
Location: Muntinlupa City, Metro Manila Philippines  
Line: PLCC  
Flow: 001-0501-2304  
Location: Muntinlupa City, Metro Manila Philippines  
Line: TSOP  
Flow: 001-0501-2317

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Amkor Technology****Quality System Information**

Amkor Technology  
 KM 22 East Service Road  
 Mauntinlupa City, PH  
 CAGE Code: N/A  
 Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q

**Technology Types:**

Contract assembly test house

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Bina, Laguna Philippines

Line: CABGA

Flow: 02-0501-1251

Location: Bina, Laguna Philippines

Line: SBGA

Flow: 001-0501-2870

**Environmental Test Operation(s)**

Location: Bina, Laguna Philippines

Line: Test

Flow: 02-0529-1255

Location: Bina, Laguna Philippines

Line: Test

Flow: 02-0529-1255

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CerDip (glass seal)	8-48		solder	
Flexarray				
LCPGA				
PBGA				
PGA		28-655		
PLCC				
PSOP				
Plastic-DIP	8-64			
Plastic-PGA				
Quad Flat Pack	44-208			
SBGA				
SIP				
SOIC	8-16,16-30			
SOJ				
SSOP	8-28,16-28			
Side-Braze	8-68		N/A	variable
TQFP				

Analog Devices

**Quality System Information**

Analog Devices

7910 Triad Center Dr

Greensboro, NC 27409

Website: <http://www.analog.com/salesdir/continent.asp>

CAGE Code: 24355, Symbol Code: CEKS

Company Contact: Elaine Trotter, (336) 605-4234

Qualifying Activity Contact: Scott Thomas, (614) 692-0587

QML Status: Full QML Certification/Qualification

Radiation hardness level: 100 K

Class: Q and V

**Technology Types:**

Bipolar, CMOS, Bi-CMOS, Bi-FET

**Product Types:**

data converters, op amps, analog and digital signal processors, sensors, references, switches, multiplexers

**Design Center(s)**

Location: Greensboro NC

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver. 1.0

Location: Vancouver WA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Somerset NJ

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: San Diego CA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Aalborg Denmark

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Austin TX

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Raleigh NC

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Toronto Canada

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Cambridge Great Britain

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Sandy UT

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Nashua (DSP Tools) NH

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Valencia Spain

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Limerick Ireland

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Wilmington MA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver. 1.0



Analog Devices

**Quality System Information**

Analog Devices

7910 Triad Center Dr

Greensboro, NC 27409

Website: <http://www.analog.com/salesdir/continent.asp>

CAGE Code: 24355, Symbol Code: CEKS

Company Contact: Elaine Trotter, (336) 605-4234

Qualifying Activity Contact: Scott Thomas, (614) 692-0587

QML Status: Full QML Certification/Qualification

Radiation hardness level: 100 K

Class: Q and V

**Technology Types:**

Bipolar, CMOS, Bi-CMOS, Bi-FET

**Product Types:**

data converters, op amps, analog and digital signal processors, sensors, references, switches, multiplexers

**Design Center(s)**

Location: Newbury United Kingdom

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver. 1.0

Location: San Jose CA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Santa Clara CA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Longmont CO

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Wilmington MA

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver. 1.0

Location: Beaverton OR

Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver. 1.0

**Wafer Fabrication Operation(s)**

Location: TSMC; Hsin-chu Taiwan

Line: CMOS, Bi-MOS (Q)

Flow: ADI-0088

Location: Chartered Semiconductor; Singapore

Line: Fabs 1,2 and 3, CMOS (Q)

Flow: ADI-0088

Location: Wilmington MA

Line: Bipolar, BiFET, BiCMOS (Q and V)

Flow: ADI-0088

Location: Limerick Ireland

Line: CMOS, BiMOS (Q)

Flow: ADI-0088

Location: Santa Clara CA

Line: Bipolar, BiFET, BiCMOS (Q and V)

Flow: ADI-0088

Location: OKI Tokoyo Japan

Line: Bipolar (Q)

Flow: ADI-0088

**Assembly Operation(s)**

Location: ADI, Gen. Trias, Cavite Philippines

Line: Ceramic, metal can

Flow: F-0133M,F0153M & F0154M

Location: ADI, Greensboro NC

Line: Ceramic Packages

Flow: ADI-0300

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Analog Devices****Quality System Information**

Analog Devices

7910 Triad Center Dr

Greensboro, NC 27409

Website: <http://www.analog.com/salesdir/continent.asp>

CAGE Code: 24355, Symbol Code: CEKS

Company Contact: Elaine Trotter, (336) 605-4234

Qualifying Activity Contact: Scott Thomas, (614) 692-0587

QML Status: Full QML Certification/Qualification

Radiation hardness level: 100 K

Class: Q and V

**Technology Types:**

Bipolar, CMOS, Bi-CMOS, Bi-FET

**Product Types:**

data converters, op amps, analog and digital signal processors, sensors, references, switches, multiplexers

**Assembly Operation(s)**

Location: ADI, Manila Philippines

Line: Ceramic Package, metal can package

Flow: F-0133M, F-0153M, F-0154M

**Electrical Test Operation(s)**

Location: Wilmington MA

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: ADI, Manila Philippines

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

Location: ADI, Gen. Trias, Cavite Philippines

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: Greensboro NC

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

**Environmental Test Operation(s)**

Location: Limerick Ireland

Line: Environmental Test

Flow: LK-00399

Location: ADI, Gen. Trias, Cavite Philippines

Line: Screening, Burn-In, Group B/C

Flow: Per PROMIS system corresponding to part number

Location: ADI, Manila Philippines

Line: Screening, Burn-In, Group B/C

Flow: ADI-0300

Location: Wilmington MA

Line: Screening, Burn-In, Group B/C/D

Flow: Per PROMIS system corresponding to part number

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	2-12		solder/gold	100-400 mil
DIP	8-48		solder/gold	100-600 mil
Flatpack	2-52		solder/gold	50 mil
J-Lead Chip Carrier	44		gold	
LCC	20-48		solder/gold	50 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Atmel-Nantes****Quality System Information**

Atmel-Nantes  
 La Chantrerie BP 70602  
 44306 Nantes Cedex 3, FR  
 Website: <http://www.atmel.com/dyn/general/contact.asp>  
 CAGE Code: F7400  
 Company Contact: Christian Ferre, 33240181913  
 Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q and V

**Technology Types:**

CMOS 0.8um-0.6um-0.5um-0.35um and RT variants

**Product Types:**

ASICS, Memories, FIFO,SRAM,Gate Arrays,Microprocessors, Microcontrollers, DSP

**Design Center(s)**

Location: Milan, Italy  
 Line: Atmel Design Center  
 Flow: contact manufacturer  
 Location: Nantes, France  
 Line: Atmel Design Center  
 Flow: contact manufacturer  
 Location: Garching, Germany  
 Line: Atmel Design Center  
 Flow: contact manufacturer  
 Location: Bracknell, UK  
 Line: Atmel Design Center  
 Flow: contact manufacturer

**Mask Development Center(s)**

Location: Rousset, France  
 Line: TOPPAN PHOTOMASKS  
 Flow: N/A

**Wafer Fabrication Operation(s)**

Location: MHS Nantes, France --- (Formerly Atmel-Nantes)  
 Line: CMOS 0.8,0.6,0.5 RT and RTP Variout  
 Flow: contact manufacturer  
 Location: L Foundry (formerly Atmel), Rousset Cedex, France  
 Line: CMOS 0.35um, 0.25um, 0.18um and RT Variouts  
 Flow: contact manufacturer

**Assembly Operation(s)**

Location: e2v, Grenoble, France  
 Line: Hermetic Assembly, PGA, Sidebrazed, Flat Pack, MCGA  
 Flow: contact manufacturer

**Electrical Test Operation(s)**

Location: Nantes, France  
 Line: Atmel Nantes  
 Flow: contact manufacturer

**Environmental Test Operation(s)**

Location: Nantes, France  
 Line: Atmel S.A.  
 Flow: contact manufacturer

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	14-48		solder/gold	100 mil
Flatpack	28-352		solder/gold	25-50 mil
MCGA	349-472		solder	50 mil
PGA		64-394	gold	100 mil

## Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

### BAE Systems

#### Quality System Information

BAE Systems

9300 Wellington Road

Manassas, VA 22110-4122

Website: <http://www.baesystems.com>

CAGE Code: 1RU44

Company Contact: Paul Nixon, (703) 367-1378

Qualifying Activity Contact: Paul Granchi, (614) 692-9975

QML Status: Full QML Certification/Qualification

Radiation hardness level: 2 Meg

Class: Q and V

#### Technology Types:

0.8um RHCOS (RHCOSMOS3E, RHCOS4E, RHCOS4S0); 0.8um RHCOS-E with ONO Anti-fuse (RHCOS4EF); 0.5um RHCOS (RHCOS5M, RHCOS5ML); 0.25um RHCOS (RH25); 0.25um RHCOS (R25) Class Q only

#### Product Types:

Memory (SRAM, PROM), FPGA, microprocessor, logic, custom, semi-custom and gate array ASICs

#### Design Center(s)

Location: Manassas VA

Line: VLSI Design and Product Development

Flow: per QM plan and technology specific design rules

#### Mask Development Center(s)

Location: Outside location

Line: Toppan (Dupont), Photronics, IBM, Towne Labs

Flow: Contact Supplier

#### Wafer Fabrication Operation(s)

Location: Manassas VA

Line: Semiconductor Technology Center

Flow: QM Plan Baseline Process Flows 0.5um - RHCOS5M, RHCOS5ML

Location: Burlington VT

Line: IBM Microelectronics

Flow: R25 (IBM 0.25um CMOS6SF)

Location: Manassas VA

Line: Semiconductor Technology Center

Flow: QM Plan Baseline Process Flows 0.8um with ONO anti-fuse- RHCOS4EF

Location: Manassas VA

Line: Semiconductor Technology Center

Flow: QM Plan Baseline Process Flows RH25

Location: Manassas VA

Line: Semiconductor Technology Center

Flow: QM Plan Baseline Process Flows 0.8um - RHCOS3E, RHCOS4E, RHCOS4S

#### Assembly Operation(s)

Location: Manassas VA

Line: BAE Systems assembly - Memory, Logic, Microprocessors, Multi-Chip modules

Flow: QM Plan Baseline Process Flows, Wirebond, Flipchip, Ceramic FP or Column Grid Array

#### Electrical Test Operation(s)

Location: Manassas VA

Line: BAE Systems Memory and Logic Test

Flow: QM Plan Baseline Process Flows

#### Environmental Test Operation(s)

Location: Manassas VA

Line: BAE Systems Burn-in and Mil-screen

Flow: QM Plan Baseline Process Flows

Location: USA

Line: subset of TCI Group B and D testing done by DSCC-Certified Labs (QP Semi, Pernicka, Sypris, AAL, Seal)

Flow: Contact Supplier

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**BAE Systems**

**Quality System Information**

BAE Systems  
9300 Wellington Road  
Manassas, VA 22110-4122  
Website: <http://www.baesystems.com>  
CAGE Code: 1RU44  
Company Contact: Paul Nixon, (703) 367-1378  
Qualifying Activity Contact: Paul Granchi, (614) 692-9975  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 2 Meg  
Class: Q and V

**Technology Types:**

0.8um RHC MOS (RHC MOS MOS3E, RHC MOS4E, RHC MOS4S0); 0.8um RHC MOS-E with ONO Anti-fuse (RHC MOS4EF); 0.5um RHC MOS (RHC MOS5M, RHC MOS5ML); 0.25um RHC MOS (RH25); 0.25um RHC MOS (R25) Class Q only

**Product Types:**

Memory (SRAM, PROM), FPGA, microprocessor, logic, custom, semi-custom and gate array ASICs

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CGA	19x19, 25x25		Solder columns	
DIP	28		gold	100 mil
Flatpack	28-340		gold	15-50 mil
LCC	32		gold	50 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Corwil Technology Corporation**

**Quality System Information**

Corwil Technology Corporation  
1635 McCarthy Boulevard  
Milpitas, CA 95035  
Website: <http://www.corwil.com>  
CAGE Code: 061F4  
Company Contact: Nawal Cotran, (408) 321-6556  
Qualifying Activity Contact: Sean McNulty, (614) 692-8800  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Milpitas CA  
Line: Military Hermetic  
Flow: Customer Specific

**Environmental Test Operation(s)**

Location: Milpitas CA  
Line: Military 883  
Flow: Customer Specific

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CerDip (glass seal)	8-64		solder	
CerPack (glass seal)	14-28		solder	
Flatpack	6-172		gold	25mil
LCC	6-132		gold	50 mil
PGA		28-391	gold	25mil
Quad Flat Pack	20-304		solder	
SOIC	8-28		gold	
Side-Braze	8-64		gold	
TO	TO-18		solder	

**Criteria Labs**

**Quality System Information**

Criteria Labs  
706 Brentwood Street  
Austin, TX 78744  
Website: <http://criterialabs.com>  
CAGE Code: 1N910  
Company Contact: Yolanda Guillory, (512) 637-4516  
Qualifying Activity Contact: Paul Granchi, (614) 692-9975  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Austin TX  
Line: Military Hermetic  
Flow: Customer Specific

**Environmental Test Operation(s)**

Location: Austin TX  
Line: Military 883  
Flow: Customer Specific

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Flatpack	CM		solder/gold	
LCC	CM		solder/gold	
Side-Braze	CM		solder/gold	

**Cypress Semiconductor**

**Quality System Information**

Cypress Semiconductor  
198 Champion Court  
San Jose, CA 95134-1709  
Website: <http://www.cypress.com>  
CAGE Code: 65786, Symbol Code: CETK  
Company Contact: Richard Oshiro, (408) 943-2102  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q, M

---

**Technology Types:**

0.8, 0.65 um DLM and TLM, CMOS and BICMOS

**Product Types:**

nvSRAM, PLD, clocks

**Design Center(s)**

Location: San Jose CA

Line: N/A

Flow: Cypress design rules

**Wafer Fabrication Operation(s)**

Location: Round Rock TX

Line: Fab2; 0.8u, CMOS & BICMOS

Flow: 90-00033 Military Programs

Location: Taiwan Semiconductor Mfg, Taiwan

Line: PLD, 0.5 u

Flow: QM Plan 90-00033

Location: Chartered (Global Foundry) Singapore

Line: Fab2; 0.8 u, nvSRAM

Flow: 90-00033 Military Programs

**Assembly Operation(s)**

Location: Amkor Anam, Manila Philippines

Line: CLCC, CERDIP

Flow: 49-1xxxx per package type

Location: MMT, Chachoengsao Thailand

Line: Hermetic

Flow: 49-15xxx per package type

**Electrical Test Operation(s)**

Location: Integra, Wichita KS

Line: nvSRAM

Flow: 16-0001 program change procedure

Location: CML, Cavite City Philippines

Line: PROM, PLD, clocks

Flow: 16-0001 program change procedure

**Environmental Test Operation(s)**

Location: CML, Cavite City Philippines

Line: Reliability & QCI Lab, Burn-in & Life Test

Flow: 22-00012, Group C and D Travelers

Location: QP Semiconductor, Santa Clara CA

Line: Reliability, mechanical

Flow: 22-00011, Quality Conformance and Qualification Procedure

Location: MMT, Chachoengsao Thailand

Line: Reliability, mechanical and thermal stress

Flow: 22-00011, Quality Conformance and Qualification Procedure

Location: SemPac Philippines

Line: Burn-in & Life Test

Flow: 29-nnnnn per device type

Location: Atlantic Analytical Laboratories, Whitehouse NJ

Line: Internal Water Vapor

Flow: 22-00011, Quality Conformance and Qualification Procedure



**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***Cypress Semiconductor***

**Quality System Information**

Cypress Semiconductor  
198 Champion Court  
San Jose, CA 95134-1709  
Website: <http://www.cypress.com>  
CAGE Code: 65786, Symbol Code: CETK  
Company Contact: Richard Oshiro, (408) 943-2102  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q, M

---

**Technology Types:**

0.8, 0.65 um DLM and TLM, CMOS and BICMOS

**Product Types:**

nvSRAM, PLD, clocks

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
DIP	24-28		solder	100 mil
Flatpack	160-208		Gold	50 mil
LCC	32-84		solder	50 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***DPA Components International (DPACI)***

**Quality System Information**

DPA Components International (DPACI)

2251 Ward Avenue

Simi Valley, CA 93065

CAGE Code: 6S055

Company Contact: Douglas Schweitzer, (805) 581-9200

Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q, V (A/T)

**Technology Types:**

90 nm CMOS

**Product Types:**

Asynchronous SRAM, Class V assembly/test

**Design Center(s)**

Location: San Jose, Ca

Line: Cypress

Flow: Cypress Design Rules

Location: Original Manufacturer

Line: Various

Flow: Various

**Mask Development Center(s)**

Location: Original Manufacturer

Line: Various

Flow: Various

**Wafer Fabrication Operation(s)**

Location: Original IC Manufacturer

Line: Various

Flow: Various

Location: Bloomington, Mn

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

Location: Bloomington, Mn

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

**Assembly Operation(s)**

Location: Simi Valley, Ca

Line: DPA Class V contract assembly

Flow: Standard DPA Components QML Flow DPA-OID-009

Location: Milipitas, Ca

Line: Alternate Tinning

Flow: QML Tinning procedure

Location: Milipitas, Ca

Line: Golden Altos, Alternate Assembly

Flow: Standard Golden Altos QML Line, GAF 1491, 1492

Location: Simi Valley, Ca

Line: DPA Class Q SRAM

Flow: Standard DPA Components QML Flow DPA-OID-009

**Environmental Test Operation(s)**

Location: Milipitas, Ca

Line: Alternate Solderability

Flow: DSCC Approved Solderability Flow

Location: Simi Valley, Ca

Line: DPA Environmental test

Flow: Standard DPA 883 Environmental Test Procedure

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****DPA Components International (DPACI)****Quality System Information**

DPA Components International (DPACI)

2251 Ward Avenue

Simi Valley, CA 93065

CAGE Code: 6S055

Company Contact: Douglas Schweitzer, (805) 581-9200

Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q, V (A/T)

**Technology Types:**

90 nm CMOS

**Product Types:**

Asynchronous SRAM, Class V assembly/test

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	2-10		solder/gold	
Chip Carrier J lead	4-370		solder/gold	
DIP	8-48		solder/gold	
Flatpack	6-256		solder/gold	
PGA		4-504	solder/gold	
SOIC	8-20		solder	
SOJ	20-26		solder	
SSOP	20-28		solder	
Side-Braze	8-64		solder	
TSOPII	44-54		solder/gold	

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

*e2v aerospace and defense, inc. (DBA QP Semiconductor)*

**Quality System Information**

e2v aerospace and defense, inc. (DBA QP Semiconductor)  
765 Sycamore Drive  
Milpitas, CA 95035  
Website: <http://www.qpsemi.com/default.asp>  
CAGE Code: 0C7V7  
Company Contact: Ryan Brown, (408) 737-0992  
Qualifying Activity Contact: Vinh Tran, (614) 692-0606  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

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**Technology Types:**

Bipolar, Linear, MCO, Digital, FAST, ECL, CMOS, BiCMOS, HCMOS

**Product Types:**

Bipolar Memory, Linear, Microcontroller, SRAM, PROM, EPROM, PLD and Logic

**Design Center(s)**

Location: San Jose, CA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Los Angeles, CA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Seattle, WA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Tempe, AZ

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Hong Kong

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Taiwan

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Swindon, UK

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: e2v a&d (DBA QP Semiconductor) - Milpitas, CA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Canada

Line: N/A

Flow: Per SCD-14 Device Design Requirements

**Wafer Fabrication Operation(s)**

Location: Lubbock, TX

Line: QP2 Xfab, CMOS

Flow: 0.8u, 3 metal

Location: California

Line: QP11 Micrel, OP AMPs/Switches bipolar

Flow: 1u, 2 metal

Location: UK

Line: QP12 Plessey, Bipolar logic

Flow: 1u, 3 metal

Location: California

Line: QP7 BICMOS, Bipolar logic, Bipolar analog

Flow: 1u, 2 metal

Location: Taiwan

Line: QP5 Macronix, CMOS Non-Volatile

Flow: 0.45u, 2 metal

**Assembly Operation(s)**

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****e2v aerospace and defense, inc. (DBA QP Semiconductor)****Quality System Information**

e2v aerospace and defense, inc. (DBA QP Semiconductor)

765 Sycamore Drive

Milpitas, CA 95035

Website: <http://www.qpsemi.com/default.asp>

CAGE Code: 0C7V7

Company Contact: Ryan Brown, (408) 737-0992

Qualifying Activity Contact: Vinh Tran, (614) 692-0606

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q and V

**Technology Types:**

Bipolar, Linear, MCO, Digital, FAST, ECL, CMOS, BiCMOS, HCMOS

**Product Types:**

Bipolar Memory, Linear, Microcontroller, SRAM, PROM, EPROM, PLD and Logic

**Assembly Operation(s)**

Location: Golden Altos, Milpitas, CA

Line: Military Hermetic

Flow: Per SCD-12 Assembly Build Requirements

Location: Millennium Microtech (Thailand) Co., Ltd.- (MMT), Chachoengsao, Thailand

Line: Military Hermetic, QML Q, S/V Certified

Flow: QPL-AH-001, QP Labs Process Flow and Special Requirements

Location: e2v a&amp;d (DBA QP Semiconductor) - Milpitas, CA

Line: Military Hermetic, QML Q, S/V Certified

Flow: Per QAP-21, Military Screening, Qualification and QCI Testing

**Electrical Test Operation(s)**

Location: Millennium Microtech (Thailand) Co., Ltd.- (MMT), Chachoengsao, Thailand

Line: Electrical Test

Flow: Per SOP-01-0004, Burn-in and Test Program Development (DRO/BRO)

Location: e2v a&amp;d (DBA QP Semiconductor) - Milpitas, CA

Line: Electrical Test

Flow: Per SOP-01-0004, Burn-in and Test Program Development (DRO/BRO)

Location: Integra, Wichita, Kansas

Line: Electrical Test

Flow: Per SOP-01-0004, Burn-in and Test Program Development (DRO/BRO)

**Environmental Test Operation(s)**

Location: e2v a&amp;d (DBA QP Semiconductor) - Milpitas, CA

Line: Military Screening and QCI. (See DSCC Lab Suitability Certification VQC-05-007332)

Flow: Per QAP-21, Military Screening, Qualification and QCI Testing

Location: Millennium Microtech (Thailand) Co., Ltd.- (MMT), Chachoengsao, Thailand

Line: Military Screening

Flow: DSCC QML Approved - Class Q and S/V

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	8-64		solder/gold	100 mil
Flatpack / QFP	10-132		solder/gold	25/50 mil
J-Lead Chip Carrier	28-84			
LCC	14-84		solder/gold	40/50 mil
Metal Can/ TO-5	8-10 L		solder/gold	N/A
Metal Can/ TO-66	9 L		solder	N/A
Metal Can/ TO-8	12 L		solder/gold	N/A
PGA		11x11, 15x15	solder/gold	100 mil

*e2v Technologies*

**Quality System Information**

e2v Technologies  
Avenue de Rochepleine BP-123,  
38521 Saint-Egreve Cedex, FR  
Website: <http://www.e2v.com/>  
CAGE Code: F8385  
Company Contact: Christian Carmona, 33476583189  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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**Technology Types:**

HCMOS 0.5um,0.65um,1.0 um, 1.5 um, 3.0 um, CMOS 0.6 um

**Product Types:**

Microprocessors, Microcontrollers, Memory

**Design Center(s)**

Location: France

Line: N/A

Flow: 54ACMOS

Location: France

Line: N/A

Flow: M54HCMOS

**Wafer Fabrication Operation(s)**

Location: Sendai Japan

Line: TCS

Flow: 1 um

Location: France

Line: HCMOS

Flow: 3.0 um

Location: Austin TX

Line: MOS8

Flow: 1.0 um

Location: Scotland

Line: MOS1

Flow: 1.5 um

Location: Italy

Line: F8

Flow: CMOSE5-U35

Location: Austin TX

Line: MOS13

Flow: HiP1.3 (.5um)

Location: Austin TX

Line: MOS11

Flow: 0.65 um

**Assembly Operation(s)**

Location: France

Line: F5

Flow: CDSG-QFPBTND

**Electrical Test Operation(s)**

Location: France

Line: GR180-AEHR

Flow: TC23EFM, TC13FM, TC23FVB

Location: France

Line: F3

Flow: ASSG-QFPBDMA

Location: France

Line: J971-AEHR

Flow: 1AR3BIN

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****e2v Technologies****Quality System Information**

e2v Technologies  
 Avenue de Rochepleine BP-123,  
 38521 Saint-Egreve Cedex, FR  
 Website: <http://www.e2v.com/>  
 CAGE Code: F8385  
 Company Contact: Christian Carmona, 33476583189  
 Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q

**Technology Types:**

HCMOS 0.5um,0.65um,1.0 um, 1.5 um, 3.0 um, CMOS 0.6 um

**Product Types:**

Microprocessors, Microcontrollers, Memory

**Electrical Test Operation(s)**

Location: France  
 Line: J971-AEHR  
 Flow: 2A00QT, 2A00QL  
 Location: France  
 Line: Sentry20-AEHR  
 Flow: 2A00QT, 2A00Q  
 Location: France  
 Line: GR180-B1300  
 Flow: 0AR3QT0A, 0ARAR3QT  
 Location: France  
 Line: GR18-B160  
 Flow: 2A00Q  
 Location: France  
 Line: J971-B1300  
 Flow: 2A00Q

**Environmental Test Operation(s)**

Location: France  
 Line: Periodically Qualification  
 Flow: 'FIA' Software

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	40-48		gold/tin	100 mil
Flatpack	52-240		gold/tin	20-50 mil
LCC	44-240		gold/tin	20-50 mil
PGA		68-241	gold/tin	100 mil

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

Golden Altos Corporation

Quality System Information

Golden Altos Corporation
402 South Hillview Drive
Milpitas, CA 95035
Website: http://www.goldenaltos.com/
CAGE Code: 065N4
Company Contact: Timothy Flaherty, (408) 956-1010
Qualifying Activity Contact: Sean McNulty, (614) 692-8800
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q and V

Technology Types:

Assembly/Test

Product Types:

N/A

Assembly Operation(s)

Location: Milpitas CA
Line: Hermetic
Flow: GAF 1492

Environmental Test Operation(s)

Location: Milpitas CA
Line: 883 Testing

Package Information 2/

Table with 5 columns: Type, Lead Range, Matrix Size, Lead Finish, Lead Pitch. Rows include Cerdip, Cerpac, Cerquad, Flat Packages, JLCC, LCC, PGA, SOIC, Sidebraze, TO CAN/Header.



**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Honeywell Aerospace****Quality System Information**

Honeywell Aerospace  
 12001 State Highway 55  
 Plymouth, MN 55441-4799  
 CAGE Code: 34168  
 Company Contact: Trish Hertog, (763) 954-2594  
 Qualifying Activity Contact: Shing Yu, (614) 692-0588  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 1 Meg  
 Class: Q and V

**Technology Types:**

0.8um SOI IV, 0.7um SOI IVE, 0.35um SOI V, 0.15um S150

**Product Types:**

Core Product Types (CPT):[SRAM, FIFO, ROM, Gate Array ASICs, Full Custom]; SOI IV, V, and S150: CPT, SOI IVE, V, and S150: Memory

**Design Center(s)**

Location: Plymouth, MN  
 Line: SOI IV(Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: GMS 10022

**Mask Development Center(s)**

Location: Plymouth, MN  
 Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: GMS 10027

**Wafer Fabrication Operation(s)**

Location: Plymouth, MN  
 Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: 22017935 (SOI IV), 22019135 (SOI IVE), 22020920 (SOI V), 22025794 (S150)  
 Location: Chandler, AZ  
 Line: MRAM  
 Flow: 22031906-SD, 58035282-SD

**Assembly Operation(s)**

Location: Plymouth, MN  
 Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: 22009590(SCP), 22021691(MCMs)  
 Location: Micross Components, Orlando FL  
 Line: Military Hermetic QML Q/V Certified  
 Flow: S HW SCA

**Electrical Test Operation(s)**

Location: Plymouth, MN  
 Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: GMS 10006

**Environmental Test Operation(s)**

Location: Plymouth, MN  
 Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM  
 Flow: GMS 10006  
 Location: Micross Components, Orlando FL  
 Line: 883 Testing  
 Flow: GMS 10006

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DBGALGA	783 Max		solder balls/Au	40-50 mil
DIP	24-28		gold	100 mil
Flatpack	28-352		gold	20-50 mil
Pin Grid Array	128 Max		gold	100 mil

**Integrated Device Technology, Inc (IDT)**

**Quality System Information**

Integrated Device Technology, Inc (IDT)  
6024 Silver Creek Valley Road  
San Jose, CA 95138  
Website: <http://www.idt.com/>  
CAGE Code: 0SP21  
Company Contact: Mary Vesey, (408) 284-4565  
Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

---

**Technology Types:**

BiCMOS, .08um CMOS 7, 0.6 um CMOS 8, CMOS 9

**Product Types:**

SRAM, Logic

**Design Center(s)**

Location: IDT, San Jose, CA

Line: N/A

Flow: IDT Design Rules

**Mask Development Center(s)**

Location: IDT, San Jose, CA

Line: N/A

Flow: IDT Design Rules

**Wafer Fabrication Operation(s)**

Location: IDT, Salinas, CA

Line: Fab 2 (Die/Wafer Stock Only)

Flow: 0.6um CMOS 8, 0.8um CMOS 7

Location: TSMC Fab 3, Hsinchu Taiwan

Line: Fab 3

Flow: TSMC 0.5u (1-2P/2-3M), TSMC 0.35u (1-2P/3-4M)

Location: IDT, Hillsboro, OR

Line: Fab 4

Flow: CMOS 7, CMOS 8, CMOS 9

**Assembly Operation(s)**

Location: Amkor, Muntinlupa City, Philippines

Line: Hermetic Assembly

Flow: IDT Hermetic Flow

Location: MMT, Tambon Saladang Bangnumpruiw, Thailand

Line: Hermetic Assembly

Flow: Form 4H-LS-0309

**Electrical Test Operation(s)**

Location: IDT, Penang,

Line: N/A

Flow: IDT Military Test Flow QCA-1797, QCA-0600

**Environmental Test Operation(s)**

Location: MMT, Tambon Saladang Bangnumpruiw, Thailand

Line: QCI Monitor

Flow: Form TSP-4019

Location: IDT, Penang,

Line: N/A

Flow: QCA-0600

Location: KESP, Penang Malaysia

Line: Burn-In Monitor

Flow: TSS-5512-C, TSC-6121

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Integrated Device Technology, Inc (IDT)**

**Quality System Information**

Integrated Device Technology, Inc (IDT)  
6024 Silver Creek Valley Road  
San Jose, CA 95138  
Website: <http://www.idt.com/>  
CAGE Code: 0SP21  
Company Contact: Mary Vesey, (408) 284-4565  
Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

---

**Technology Types:**

BiCMOS, .08um CMOS 7, 0.6 um CMOS 8, CMOS 9

**Product Types:**

SRAM, Logic

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	16-48		solder	100 mil
Flatpack	16-84		solder	50 mil
LCC	20-68		solder	50 mil
PGA		68-84	solder	100 mil

**Intersil Corporation**

**Quality System Information**

Intersil Corporation

1650 Robert J. Colan Blvd.

Palm Bay, FL 32905-3398

Website: <http://www.intersil.com/cda/Support/contacts/>

CAGE Code: 34371, Symbol Code: CDWO

Company Contact: Jeff Touvell, (321) 729-5602

Qualifying Activity Contact: Paul Granchi, (614) 692-9975

QML Status: Full QML Certification/Qualification

Radiation hardness level: 300 K

Class: Q,V,T,M

**Technology Types:**

Bipolar, CMOS, linear, CMOS SAJI

**Product Types:**

memories, logic, switches, timers, microprocessors, micro-peripherals

**Wafer Fabrication Operation(s)**

Location: Yamaha, Hamamatsu Japan

Line: Yamaha C5.6

Flow: Non-rad hard, Class M only

Location: Intersil, Palm Bay FL

Line: Fab 59

Flow: Bipolar, CMOS, SAJI, SAJI I, Scaled SAJI IV, SAJI V, SAJI VI, L7, Linear Silicon Gate, DI Bipolar, DI Linear CMOS

**Assembly Operation(s)**

Location: Millenium Microtech, Chachoengsao, Thailand

Line: Compliant Hermetic (DIP, FP, Leadless CC, PGA)

Flow: Non-rad hard, Class B/Q only

Location: Amkor Philippines

Line: Hermetic (DIP, FP, Leadless CC, PGA)

Flow: Non-rad hard, Class M only

Location: Intersil, Palm Bay FL

Line: Compliant Hermetic

Flow: 841XXX, 240XXX, 352XXX

**Electrical Test Operation(s)**

Location: Carsem (S), Ipoh, Malaysia

Line: Wafer Probe

Flow: Non-rad hard, Class B/Q only

Location: Intersil, Palm Bay FL

Line: Compliant

Flow: Contact Manufacturer

Location: STATS ChipPAC, Kuala Lumpur Malaysia

Line: Test

Flow: Contact Manufacturer

Location: Criteria/Austin Texas

Line: Wafer Probe

Flow: Class Q, T, V

Location: Lingsen, Taichung Taiwan

Line: Test

Flow: Non-rad hard, Class M only

Location: Intersil, Milpitas California

Line: Test

Flow: Non-rad hard, Class M only

Location: Criterion Labs, Austin Tx

Line: Wafer Probe

Flow: Class Q, T, V

**Environmental Test Operation(s)**

Location: STATS ChipPAC, Kuala Lumpur Malaysia

Line: Compliant Hermetic

Flow: 86XXXX, 40H-721-052-XXX, 8\*XXXXXX, 9\*XXXXXX, 87XXXX, 240XXX

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**Intersil Corporation**

**Quality System Information**

Intersil Corporation

1650 Robert J. Colan Blvd.

Palm Bay, FL 32905-3398

Website: <http://www.intersil.com/cda/Support/contacts/>

CAGE Code: 34371, Symbol Code: CDWO

Company Contact: Jeff Touvell, (321) 729-5602

Qualifying Activity Contact: Paul Granchi, (614) 692-9975

QML Status: Full QML Certification/Qualification

Radiation hardness level: 300 K

Class: Q,V,T,M

**Technology Types:**

Bipolar, CMOS, linear, CMOS SAJI

**Product Types:**

memories, logic, switches, timers, microprocessors, micro-peripherals

**Environmental Test Operation(s)**

Location: Millenium Microtech, Chachoengsao, Thailand

Line: Compliant Hermetic

Flow: 86XXXX, 40-H721-052-XXX, 8\*XXXXX, 9\*XXXXX, 87XXXX, 240XXX

Location: Intersil, Palm Bay FL

Line: Compliant Hermetic

Flow: 86XXX, 40H-721-052-XXX, 8\*XXXXX, 9\*XXXXX, 54XXXX, 87XXXX, 240XXX

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	3-12		solder/gold	N/A
DIP	8-40		solder/gold	100 mil
Flatpack	8-48		gold	25/40/50 mil
LCC	3-44		solder/gold	30/40/50 mil
PGA		68	gold	100 mil

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**Kyocera America, Inc.**

**Quality System Information**

Kyocera America, Inc.  
8611 Balboa Avenue  
San Diego, CA 92123-1580  
Website: <http://americas.kyocera.com/kai/semiparts/>  
CAGE Code: 057K4  
Company Contact: Gregg Burnett, (858) 614-2589  
Qualifying Activity Contact: Vinh Tran, (614) 692-0606  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

**Technology Types:**

**Product Types:**

**Assembly Operation(s)**

Location: San Diego CA  
Line: Kyocera America, Inc.  
Flow: Full QML Class Q and V/S Assembly

**Electrical Test Operation(s)**

Location: San Diego CA  
Line: Kyocera America, Inc.  
Flow: QML Flow

**Environmental Test Operation(s)**

Location: El Segundo CA  
Line: Seal Laboratories  
Flow: TM2012, TM1018  
Location: Santa Clara CA  
Line: Hi-Reliability Microelectronics  
Flow: TM2002, TM2007  
Location: San Diego CA  
Line: Kyocera America, Inc.  
Flow: QML Flow

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
BGA		1272 max	gold	N/A
DIP	64 max		gold	N/A
LCC	132 max		gold	N/A
LGA	1272 max		gold	N/A
PGA		540 max	gold	N/A
Quad Flat Pack	352 max		gold	N/A

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***Lansdale Semiconductor Incorporated***

**Quality System Information**

Lansdale Semiconductor Incorporated  
2412 West Huntington Drive  
Tempe, AZ 85282-3132  
Website: <http://www.lansdale.com/>  
CAGE Code: 58625  
Company Contact: Lee Mathiesen, (602) 438-0123  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

TTL, Bipolar, linear, ECL, CMOS, NMOS, others

**Product Types:**

logic, memory, microprocessors, others

**Design Center(s)**

Location: Original Manufacturer

**Mask Development Center(s)**

Location: Original Manufacturer

Line: Contact Manufacturer

Flow: Contact Manufacturer

**Wafer Fabrication Operation(s)**

Location: Tempe AZ

Line: Panjit

Flow: Contact Manufacturer

**Assembly Operation(s)**

Location: Fremont CA

Line: Pantronix

Flow: Standard Pantronix QML flow

Location: Bangkok Thailand

Line: Millenium Microtech

Flow: Contact Manufactuer

Location: San Jose CA

Line: Corwil

Flow: Customer Specific

**Electrical Test Operation(s)**

Location: Santa Clara CA

Line: General Test Labs

Flow: Standard GTL Electrical Test procedures

**Environmental Test Operation(s)**

Location: Santa Clara CA

Line: General Test Labs

Flow: Standard GTL 883 Environmental Test Procedures

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	8-12		solder/gold	N/A
DIP	8-64		solder	
Flatpack	10-64		solder/gold	
LCC	20-132		solder/gold	

Linear Technology

**Quality System Information**

Linear Technology  
1630 McCarthy Blvd.  
Milpitas, CA 95035-7487  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Sandy Ellyson, (408) 432-1900  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

---

**Technology Types:**

Bipolar, CMOS, BiCMOS

**Product Types:**

Qualified for: Comparators, power, op amps. Capable for: rf, wireless.

**Design Center(s)**

Location: Linear Technology, Grass Valley Ca  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Auburn NH  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Yishun Industrial Park A Singapore  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, North Chelmsford Ma  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Colorado Springs Co  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Cary NC  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Milpitas Ca  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Santa Barbara Ca  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Colchester Vt  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Plano Tx  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technoogy, Ismaning Germany  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technoloby, Hangzhou P.R.C  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M  
Location: Linear Technology, Tempe Az  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M

**Mask Development Center(s)**

Location: Mask Fab Contractors  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M

**Wafer Fabrication Operation(s)**



Linear Technology

**Quality System Information**

Linear Technology  
1630 McCarthy Blvd.  
Milpitas, CA 95035-7487  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Sandy Ellyson, (408) 432-1900  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

---

**Technology Types:**

Bipolar, CMOS, BiCMOS

**Product Types:**

Qualified for: Comparators, power, op amps. Capable for: rf, wireless.

**Wafer Fabrication Operation(s)**

Location: Linear Technology, Milpitas Ca  
Line: Fab 4 Hillview Bipolar, CMOS, BiCMOS  
Flow: Q,V,B,S,M  
Location: Linear Technology, Camas Wa  
Line: Fab 3 Bipolar, CMOS, BiCMOS  
Flow: Q,V,B,S,M

**Assembly Operation(s)**

Location: Amkor/Anam, Muntinlupa Philippines  
Line: Ceramic, with screening  
Flow: Q, B, M  
Location: Team Pacific, FTI Complex, Taguig Philippines  
Line: TO Can, with screening  
Flow: Q, B, M  
Location: Linear Technology, Milpitas Ca  
Line: Ceramic and Metal Can, with Screening  
Flow: Q,V,B,S,M  
Location: Linear Technology, Milpitas Ca  
Line: Hillview, Ceramic and TO Can  
Flow: Q,V,B,S,M

**Electrical Test Operation(s)**

Location: Linear Technology, Yishun Industrial Park A Singapore  
Line: Screening and Group A  
Flow: Q, B, M  
Location: Linear Technology, Penang Malaysia  
Line: Wafer Sort  
Flow: Q,V,B,S,M  
Location: Linear Technology, Milpitas Ca  
Line: Wafer Sort & Final Test  
Flow: Q,V,B,S,M

**Environmental Test Operation(s)**

Location: Linear Technology, Milpitas Ca  
Line: Burn-In and Quality Conformance Tests  
Flow: Q,V,B,S,M  
Location: Linear Technology, Yishun Industrial Park A Singapore  
Line: Burn-In and Quality Conformance Tests  
Flow: Q, B, M

Linear Technology

**Quality System Information**

Linear Technology  
1630 McCarthy Blvd.  
Milpitas, CA 95035-7487  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Sandy Ellyson, (408) 432-1900  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and V

---

**Technology Types:**

Bipolar, CMOS, BiCMOS

**Product Types:**

Qualified for: Comparators, power, op amps. Capable for: rf, wireless.

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
B/Brazed FP (Solder Seal)	10-14		solder or gold	50
CerDip (glass seal)	8-28		solder only	100
CerPack (glass seal)	10-14		solder only	50
LCC	20		solder only	50
Other Cans	2-10		solder only	
S/Brazed DIP	14-16		solder or gold	100

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**M.S. Kennedy Corp.**

**Quality System Information**

M.S. Kennedy Corp.  
4707 Dey Rd.  
Liverpool, NY 13088  
Website: <http://www.mskennedy.com/>  
CAGE Code: 51651  
Company Contact: Daniel Miller, (315) 701-6751  
Qualifying Activity Contact: Philip Patterson, (614) 692-2178  
QML Status: Transitional QML Certification/Qualification  
Radiation hardness level: 300 K  
Class: Q and V

**Technology Types:**

TBD

**Product Types:**

TBD

**Wafer Fabrication Operation(s)**

Location: Milpitas, CA  
Line: Linear Technology  
Flow: Class Q/V

**Assembly Operation(s)**

Location: Liverpool, NY  
Line: Class Q/V  
Flow: Class Q 2422-16054 / Class V 2422-14417

**Electrical Test Operation(s)**

Location: Liverpool, NY  
Line: Electrical Test  
Flow: Class Q 2422-16054 / Class V 2422-14417

**Environmental Test Operation(s)**

Location: Liverpool, NY  
Line: Class Q/V  
Flow: Class Q 2422-16054 / Class V 2422-14417

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CerPack (glass seal)	10		tin-lead/gold	50 mil
TO257	3		tin-lead/gold	100 mil

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

Maxwell Technologies

Quality System Information

Maxwell Technologies
9244 Balboa Avenue
San Diego, CA 92123
CAGE Code: 68911
Company Contact: Dean Hulett, (858) 503-3413
Qualifying Activity Contact: Vinh Tran, (614) 692-0606
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q and V

Technology Types:

CMOS

Product Types:

A/D Converters, RAD PAK Technology, EE PROM

Design Center(s)

Location: San Diego CA
Line: Maxwell
Flow: Characterization of Hitachi Die

Wafer Fabrication Operation(s)

Location: Pocatello ID
Line: AMI, Fab 9
Flow: A/D Converter
Location: Kofu, Japan
Line: Hitachi, K4 fab facility
Flow: 1 MEG EEPROM CMOS 1LM, 6 ", 0.8um

Assembly Operation(s)

Location: San Diego CA
Line: Maxwell
Flow: Side Braze, Dip, Flat pack, LCC, ES-028
Location: San Diego CA
Flow: Pyramid Class B Travelers

Electrical Test Operation(s)

Location: San Diego CA
Line: Maxwell
Flow: Per device specification

Environmental Test Operation(s)

Location: San Diego CA
Line: Maxwell
Flow: Screening per QCII-028

Package Information 2/

Table with 5 columns: Type, Lead Range, Matrix Size, Lead Finish, Lead Pitch. Rows include DIP and LLC packages.

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Microsemi Analog Mixed Signal Group****Quality System Information**

Microsemi Analog Mixed Signal Group  
 11861 Western Avenue  
 Garden Grove, CA 92641-2119  
 Website: <http://www.microsemi.com/contact/contactfind.asp>  
 CAGE Code: 34333, Symbol Code: CESD  
 Company Contact: Gary Hancock, (714) 372-8334  
 Qualifying Activity Contact: Vinh Tran, (614) 692-0606  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q

**Technology Types:**

Bipolar

**Product Types:**

regulators, op amps, comparators, sense amps, drivers, transistor arrays

**Design Center(s)**

Location: Garden Grove CA

Line: Linear

Flow: Contact Manufacturer

**Mask Development Center(s)**

Location: Garden Grove CA

Line: Linear

Flow: Contact Manufacturer

**Wafer Fabrication Operation(s)**

Location: Garden Grove CA

Line: Linear

Flow: SGM5900

**Assembly Operation(s)**

Location: Team Pacific, FTI Complex, Taguig, Philippines

Line: Linear

Flow: SGM5901, SGM5902

Location: Garden Grove CA

Line: Linear

Flow: SGM5901, SGM5902

Location: Philippines (PSI)

Line: Linear

Flow: SGM5901, SGM5902

**Electrical Test Operation(s)**

Location: Garden Grove CA

Line: Linear

Flow: SGM5901, SGM5902

Location: Philippines (PSI)

Line: Linear

Flow: SGM5901, SGM5902

**Environmental Test Operation(s)**

Location: Philippines (PSI)

Line: Linear

Flow: SGM5901, SGM5902

Location: Garden Grove CA

Line: Linear

Flow: SGM5901, SGM5902

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	2-12		solder	N/A
DIP	8-18		solder	100 mil
Flatpack	10-24		solder	30-50 mil
LCC	20		solder	50 mil

**Microsemi SoC**

**Quality System Information**

Microsemi SoC  
2061 Stierlin Court  
Mountainview, CA 94043-4655  
Website: [http://www.actel.com/company/contact/offices/disti\\_na.aspx](http://www.actel.com/company/contact/offices/disti_na.aspx)  
CAGE Code: 0J4Z0  
Company Contact: Lisa Konigsberg, (408) 522-7522  
Qualifying Activity Contact: Vinh Tran, (614) 692-0606  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

---

**Technology Types:**

CMOS Field Programmable Gate Arrays

**Product Types:**

Field Programmable Gate Array and Rad hard FPGA

**Design Center(s)**

Location: Sunnyvale CA  
Line: Actel Design System  
Flow: Per QM Plan 1-04-13047

**Mask Development Center(s)**

Location: Nagaokakyo, Kyoto Japan  
Line: MEC  
Flow: Per QM Plan 1-04-1347

Location: Manassas, VA  
Line: BAE Systems  
Flow: Per QM Plan 1-04-1347

Location: Singapore,  
Line: Photonics  
Flow: Per QM Plan 1-04-1347

**Wafer Fabrication Operation(s)**

Location: Hsinchu City, Taiwan  
Line: Winbond Electronics  
Flow: .045um, 0.6um, 0.8um CMOS FPGA

Location: Regensburg, Germany  
Line: Infineon Technologies  
Flow: 0.25um Flash/CMOS FPGA

Location: Hsinchu City Taiwan  
Line: United Microelectronics corp (UMC)  
Flow: .15um, 0.25um CMOS and .22u Flash/CMOS FPGA

Location: Manassas, VA  
Line: BAE Systems  
Flow: 0.8 Micron CMOS Rad Hard FPGA

Location: Nagaokakyo, Kyoto Japan  
Line: Matsushita (MEC)  
Flow: 0.25um, 0.6um, 0.8um and 1.0um CMOS FPGA

Location: Singapore,  
Line: Chartered Semiconductor (CSM)  
Flow: 0.35 um, .45um, .6um CMOS FPGA

**Assembly Operation(s)**

Location: Manassas, VA  
Line: BAE Systems  
Flow: Hermetic Package Assembly for J Lead Chip Carrier & Quad Flatpack & Column Grid Array (CCGA)

Location: San Diego, CA  
Line: Kyocera  
Flow: Ceramic Quad Flatpak (CQFP) and Pin Grid Array (CPGA)

Location: San Jose, CA  
Line: Six Sigma  
Flow: Solder Dip

**Microsemi SoC**

**Quality System Information**

Microsemi SoC  
 2061 Stierlin Court  
 Mountainview, CA 94043-4655  
 Website: [http://www.actel.com/company/contact/offices/disti\\_na.aspx](http://www.actel.com/company/contact/offices/disti_na.aspx)  
 CAGE Code: 0J4Z0  
 Company Contact: Lisa Konigsberg, (408) 522-7522  
 Qualifying Activity Contact: Vinh Tran, (614) 692-0606  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q

**Technology Types:**

CMOS Field Programmable Gate Arrays

**Product Types:**

Field Programmable Gate Array and Rad hard FPGA

**Assembly Operation(s)**

Location: Manila, Philippines  
 Line: AAIP  
 Flow: Ceramic Quad Flatpak (CQFP) and Pin Grid Array (CPGA)  
 Location: Fremont, CA  
 Line: Pantronix Corporation  
 Flow: Ceramic Quad Flatpak (CQFP) and Pin Grid Array (CPGA)

**Electrical Test Operation(s)**

Location: Manassas, VA  
 Line: BAE Systems  
 Flow: Per BAE Systems QM Plan Baseline Flow  
 Location: Sunnyvale CA  
 Line: Actel  
 Flow: Per QM Plan 1-04-1347

**Environmental Test Operation(s)**

Location: Santa Clara, CA  
 Line: QP Semi  
 Flow: Group B & D  
 Location: Milpitas, CA  
 Line: RQE  
 Flow: Burn-In, Life Test  
 Location: San Jose, CA  
 Line: Six Sigma  
 Flow: Solderability  
 Location: Sunnyvale, CA  
 Line: AMER  
 Flow: Failure analysis, SEM analysis  
 Location: Spokane, WA  
 Line: Hi Rel  
 Flow: Failure analysis, SEM analysis  
 Location: Santa Clara, CA  
 Line: Riga Analytical Lab inc.  
 Flow: Failure analysis  
 Location: Sunnyvale, CA  
 Line: Accurel  
 Flow: Failure analysis, SEM analysis

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Flatpack	256		gold	

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Micross Components**

**Quality System Information**

Micross Components  
7725 N. Orange Blossom Trail  
Orlando, FL 32810-2696  
Website: <http://www.micross.com/>  
CAGE Code: 57300  
Company Contact: Allen Wares, (407)296-5642  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q, V (A/T)

---

**Technology Types:**

**Product Types:**

**Design Center(s)**

Location: Original QML Manufacturer  
Line: Original QML Design  
Flow: Original QML Design

**Wafer Fabrication Operation(s)**

Location: Original QML Manufacturer  
Line: Original QML Die  
Flow: Original QML Die

**Assembly Operation(s)**

Location: Orlando, FL  
Line: Chip Supply Assembly  
Flow: TVL-0396

**Electrical Test Operation(s)**

Location: Orlando, FL  
Line: Chip Supply Electrical Test  
Flow: TVL--0397 thru TVL-0400

**Environmental Test Operation(s)**

Location: Orlando, FL  
Line: Chip Supply Environmental Testing  
Flow: TVL--0397 thru TVL-0400

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Flatpack	7-304		solder/gold	Contact Mfr.
LCC	3-116		solder/gold	Contact Mfr.
Metal Can/TO-5	2-12		solder/gold	Contact Mfr.
PGA		6x5-19x19	solder/gold	Contact Mfr.
Side-Braze	8-64		solder/gold	Contact Mfr.



**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Millennium Microtech****Quality System Information**

Millennium Microtech  
 17/2 Moo 18, Suwiontawong Road  
 Chachoengsao, Th 24000  
 CAGE Code: N/A  
 Company Contact: Chanya Klaisrikaew  
 Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q and V

**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Chachoengsao Th  
 Line: Hermetic and Plastic  
 Flow: Standard Military

**Environmental Test Operation(s)**

Location: Chachoengsao Th  
 Line: Hermetic and Plastic  
 Flow: Screening

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CerDip (glass seal)	8-40		solder	
CerPack (glass seal)	14-28		solder	
Flatpack	16,32		solder	
LCC	16-68		solder	
PGA		32,68,84,100	solder	
PLCC	20-84		solder	
PQFP	44-208		solder	
Plastic-DIP	18-28		solder	
Quad Flat Pack	28-64		solder	
SOIC	24,28		solder	
SOJ	24,28		solder	
Side-Braze	8-48		solder	

**Minco**

**Quality System Information**

Minco  
1805 Rutherford Lane  
Austin, TX 78754  
CAGE Code: 60264  
Company Contact: Mike Morris, (512) 339-3465  
Qualifying Activity Contact: Sean McNulty, (614) 692-8800  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

**Product Types:**

Various (Minco purchases die)

**Assembly Operation(s)**

Location: Austin TX  
Line: Minco Hermetic Assembly  
Flow: Contact Minco

**Electrical Test Operation(s)**

Location: Austin TX  
Line: Electrical Test Operations  
Flow: Per Applicable Device Spec

**Environmental Test Operation(s)**

Location: Austin TX  
Line: Minco Environmental Testing  
Flow: Contact Minco

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Contact Minco				

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***ON Semiconductor***

**Quality System Information**

ON Semiconductor  
2300 Buckskin Road  
Pocatello, ID 83201-2798  
CAGE Code: 31471  
Company Contact: Mona Hale, (208) 234-6084  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and N

---

**Technology Types:**

CMOS .13u, .35u C3H/2LM, C3I/3LM; .5u C5A/2LM, C5B/3LM; .6u C6H/C6O/2LM, C6I/3LM; .8u CWB/C8H/2LM, CWC/C8I/3LM; 1.25u CAB/C8W/2LM; 1.5u ABM MixSig, 1.0u CYC/C8I/3LM, CYB/C8H/2LM

**Product Types:**

ASICs, gate arrays, standard cells

**Design Center(s)**

Location: ON Semiconductor, Lower Gwynedd, PA

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor Munich, Germany

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, Pocatello, ID

Line: QML Design

Flow: 1000001

Location: ON Semiconductor, Plano, TX

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, San Jose, CA

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, American Fork, UT

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, San Diego, CA

Line: QML Design

Flow: 12MQE00004A

**Mask Development Center(s)**

Location: Wafer Fab Controlled

Line: Wafer Fab Controlled

Flow: 7619163

**Wafer Fabrication Operation(s)**

Location: ON Semiconductor, Gresham, OR

Flow: 7019030

Location: ON Semiconductor, Pocatello, ID

Line: Fab (9 closed and 10): ABB,CAB,CYB,CYC,CWB,CWC,C6H,C6I,C6O,C5A,C5B,C3H,C3I,C8I,C8H,C8W

Flow: 7019030

**Assembly Operation(s)**

Location: Amkor Technology, Metro Manila, Philippines

Line: QML Plastic LQFP Packages

Flow: 7020062

Location: Amkor Technology, Metro Manila, Philippines

Line: QML Plastic Packages

Flow: 7020037

Location: Criteria Labs, Austin TX

Line: QML Ceramic Packages

Flow: 7020040

Location: Kyocera, San Diego, CA

Line: QML Ceramic DBGA Packages

Flow: 7020040

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***ON Semiconductor***

**Quality System Information**

ON Semiconductor  
2300 Buckskin Road  
Pocatello, ID 83201-2798  
CAGE Code: 31471  
Company Contact: Mona Hale, (208) 234-6084  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and N

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**Technology Types:**

CMOS .13u, .35u C3H/2LM, C3I/3LM; .5u C5A/2LM, C5B/3LM; .6u C6H/C6O/2LM, C6I/3LM; .8u CWB/C8H/2LM, CWC/C8I/3LM; 1.25u CAB/C8W/2LM; 1.5u ABM MixSig, 1.0u CYC/C8I/3LM, CYB/C8H/2LM

**Product Types:**

ASICs, gate arrays, standard cells

**Assembly Operation(s)**

Location: Pantronix, Fremont, CA  
Line: QML Ceramic Packages and hot solder dip  
Flow: 7020040  
Location: Amkor Technology, Metro Manila, Philippines  
Line: QML Ceramic Packages  
Flow: 7020040  
Location: Amkor Technology, Buchon, South Korea  
Line: QML Plastic LQPF Packages  
Flow: 7020037  
Location: Amkor Technology, Seoul, South Korea  
Line: QML Plastic PQFP Packages  
Flow: 7020037  
Location: Criteria Labs, Austin TX  
Line: Hot Solder Dip  
Flow: 7050013

**Electrical Test Operation(s)**

Location: ON Semiconductor, Carmona Philippines  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 213001  
Location: ON Semiconductor, Calamba Philippines  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 213001  
Location: Kyocera, San Diego, CA  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 213001  
Location: ON Semiconductor, Pocatello, ID  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 7450000

**Environmental Test Operation(s)**

Location: ON Semiconductor, Carmona Philippines  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 7020044  
Location: Hi-Rel Microelectronics, Santa Clara, CA  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 7020044  
Location: ON Semiconductor, Calamba Philippines  
Line: QML Technology Flow 7050013 & 7050026  
Flow: 7020044

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

ON Semiconductor

Quality System Information

ON Semiconductor
2300 Buckskin Road
Pocatello, ID 83201-2798
CAGE Code: 31471
Company Contact: Mona Hale, (208) 234-6084
Qualifying Activity Contact: Shing Yu, (614) 692-0588
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q and N

Technology Types:

CMOS .13u, .35u C3H/2LM, C3I/3LM; .5u C5A/2LM, C5B/3LM; .6u C6H/C6O/2LM, C6I/3LM; .8u CWB/C8H/2LM, CWC/C8I/3LM; 1.25u CAB/C8W/2LM; 1.5u ABM MixSig, 1.0u CYC/C8I/3LM, CYB/C8H/2LM

Product Types:

ASICs, gate arrays, standard cells

Package Information 2/

Table with 5 columns: Type, Lead Range, Matrix Size, Lead Finish, Lead Pitch. Rows include CLCC, CPGA, CQFP, DBGA, JLDCC, LFPBGA, LQFP, PBGA, PQFP, SBGA, Side-Braze.

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Pantronix Corporation****Quality System Information**

Pantronix Corporation  
 2710 Lakeview Court  
 Fremont, CA 94538  
 CAGE Code: 2V289  
 Company Contact: Solomon Ching, 510-656-5898  
 Qualifying Activity Contact: Shing Yu, (614) 692-0588  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q and V

**Technology Types:**

N/A

**Product Types:**

all (assembly and test house only)

**Design Center(s)**

Location: N/A

Line: N/A

Flow: N/A

**Mask Development Center(s)**

Location: N/A

Line: N/A

Flow: N/A

**Wafer Fabrication Operation(s)**

Location: N/A

Line: N/A

Flow: N/A

**Assembly Operation(s)**

Location: Pantronix Corp, Fremont CA

Line: Ceramic and TO Metal Can/Screening

Flow: Military (Class Q: 710-019 and Class V: 710-020)

**Environmental Test Operation(s)**

Location: Pantronix Corp, Fremont CA

Line: Conformance Test

Flow: Military (Class Q: 710-026 and Class V: 710-027)

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	3-10		solder/gold	
CerDip (glass seal)	8-40		solder	
CerPack (glass seal)	8-40		solder	
DIP	8-48		solder/gold	50-125 mil
Flatpack	10-32		solder/gold	25-75 mil
LCC	3-68		solder/gold	
PGA		48-144	solder/gold	100 mil
Quad Flat Pack	28-352		solder	
SOIC	8-28		solder	
SOJ	28-32		solder	
SSOP	16-28		solder	

**PSI Technologies**

**Quality System Information**

PSI Technologies

Taguig, Manilla

CAGE Code: N/A

Company Contact: Mabel Dalagan, 632 838 49 66

Qualifying Activity Contact: Andy Thacker, (614) 692-0589

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q

**Technology Types:**

Assembly, Test

**Product Types:**

**Assembly Operation(s)**

Location: Taguig City 1604 , Metro Manilla Philippines

Line: Hermetic

Flow: PS-CD-4085, PS-CP-4085, PS-MC-4006, PS-CL-4088, PS-TO-4089, and PS-FP-4087

**Environmental Test Operation(s)**

Location: Taguig City 1604 , Metro Manilla Philippines

Line: Test

Flow: Contact Manufactuer

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CLCC				
Can	3-12		solder	
CerDip (glass seal)				
CerPack (glass seal)				
Flatpack	8-48			
TO257				

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

**Pyramid Semiconductor**

**Quality System Information**

Pyramid Semiconductor  
1340 Bordeaux Drive  
Sunnyvale, CA 94049-1005  
CAGE Code: 3D TT2  
Company Contact: Jagar Sandhu, (408) 734 8240  
Qualifying Activity Contact: Philip Patterson, (614) 692-9975  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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**Technology Types:**

0.6,0.8,1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS

**Product Types:**

SRAMs, EEPROMs, Microprocessor, EEPROM, , Processor Interface

**Design Center(s)**

Location: Sunnyvale CA  
Line: CMOS  
Flow: Contactt Pyramid Semiconductor

**Mask Development Center(s)**

Location: Hsin-Chu  
Line: TSMC Mask  
Flow: TSMC ISO 9000 Flow  
Location: Pocatello ID  
Line: CWB  
Flow: ON Semiconductor (formerly AMIS) QML Flow

**Wafer Fabrication Operation(s)**

Location: Hsin-Chu  
Line: TSMC Fab 2A  
Flow: TSMC ISO-9000 Flow  
Location: Pocatello ID  
Line: CWB  
Flow: ON Semiconductor (formerly AMIS) QML Flow

**Assembly Operation(s)**

Location: Milpitas CA  
Line: Corwil  
Flow: Ceramic with glass seal flow, Cerpack  
Location: Milpitas CA  
Line: Golden Altos  
Flow: Golden Altos, Ceramic with glass seal Flow, Cerdip  
Location: Sunnyvale CA  
Line: Pyramid Assembly Clean Room  
Flow: Pyramid Class B Travelers  
Location: Millennium Microtech (Thailand) Co., Ltd.- (MMT), Chachoengsao,  
Line: Milennium Microtech  
Flow: Ceramic with glass seal flow, Cerdip

**Electrical Test Operation(s)**

Location: Sunnyvale CA  
Line: Pyramid  
Flow: Per Lot Traveler

**Environmental Test Operation(s)**

Location: Sunnyvale CA  
Line: Pyramid, Hermaticity Tests  
Flow: Pyramid Lot Traveler  
Location: Hi-Rel Microelectronics, Santa Clara CA  
Line: Wyle  
Flow: Group D, Constant Acceleration, Temperature Cycle, PIND



Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**Pyramid Semiconductor**

**Quality System Information**

Pyramid Semiconductor  
1340 Bordeaux Drive  
Sunnyvale, CA 94049-1005  
CAGE Code: 3DTT2  
Company Contact: Jagar Sandhu, (408) 734 8240  
Qualifying Activity Contact: Philip Patterson, (614) 692-9975  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

---

**Technology Types:**

0.6,0.8,1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS

**Product Types:**

SRAMs, EEPROMs, Microprocessor, EEPROM, , Processor Interface

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	16-64		solder/gold	50-100 mil
Flatpack	28-160		solder/gold	25-50 mil
LCC	18-36		solder/gold	40, 50 mil
PGA		68-179	solder/gold	100 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Rochester Electronics, LLC****Quality System Information**

Rochester Electronics, LLC  
 16 Malcolm Hoyt Drive  
 Newburyport, MA 01950  
 Website: http://www.rocelec.com  
 CAGE Code: 3V146  
 Company Contact: Joe Graziano, (978) 462-9332  
 Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: NSC,30-300  
 Class: Q and V

**Technology Types:**

CMOS, NMOS, HCMOS, BPTTL, Schottky TTL, FAST, FACT BiCMOS

**Product Types:**

Logic, Memory, Linear, Interface, Microprocessor, Micorcontroller

**Design Center(s)**

Location: Desert Microtechnology Assoc.,Scottsdale AZ  
 Line: Subcontractors Re-design of OEM licensed devices  
 Flow: QIP91

**Wafer Fabrication Operation(s)**

Location: OEM Suppliers with EOL Agreements  
 Line: OEM Purchased Die  
 Flow: QIP 32  
 Location: Fairchild Semiconductor, S. Portland ME  
 Line: Schottky, CMOS and BiCMOS  
 Flow: Q  
 Location: Xfab, Lubbock TX  
 Line: CMOS, BiCMOS  
 Flow: Q

**Assembly Operation(s)**

Location: Millennium Microtech, Bangkok Thailand  
 Line: Hermetic Assembly and Environmental Screening  
 Flow: Q and V  
 Location: Golden Altos, Milpitas, Ca  
 Line: Hermetic Assembly and Environmental Screening  
 Flow: Q and V

**Electrical Test Operation(s)**

Location: Rochester, Newburyport MA  
 Line: Digital, Analog and Mixed Signal Electrical Test  
 Flow: Q and V

**Environmental Test Operation(s)**

Location: Rochester, Newburyport MA  
 Line: Burn-in and Life Test  
 Flow: Q and V

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CQFP	64-132		solder/gold	50 mil
Can	2-12		solder/gold	50-400 mil
DIP	8-64		solder/gold	100 mil
Flatpack/QFP	10-56		solder/gold	50 mil
J-Lead Chip Carrier	28-84		solder/gold	50 mil
LCC	16-84		solder/gold	50 mil
PGA		11 x 11	solder/gold	100 mil

Semelab

**Quality System Information**

Semelab

CAGE Code: U3158

Company Contact: David Hall, 01455 552505

Qualifying Activity Contact: Andy Thacker, (614) 692-0589

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q

**Technology Types:**

**Product Types:**

Linear IC

**Wafer Fabrication Operation(s)**

Location: Semifab, Scotland

**Assembly Operation(s)**

Location: Lutterworth, England

Line: Hermetic CerDip

Location: Lutterworth, England

Line: Hermetic metal can

**Electrical Test Operation(s)**

Location: Lutterworth, England

Line: Linear Test

**Environmental Test Operation(s)**

Location: Lutterworth, England

Line: Linear Screening

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	2,3		solder	
CerDip (glass seal)	8,14,16,18		solder	

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

Six Sigma

Quality System Information

Six Sigma  
905 Montague Expressway  
Milpitas, CA 95035-6817  
Website: <http://www.sixsigmaservices.com/>  
CAGE Code: 1PBC8  
Company Contact: Russ Winslow, (408) 956 0100  
Qualifying Activity Contact: Paul Granchi, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Class: Q and V

Technology Types:

Product Types:

Assembly Operation(s)

Location: Milpitas CA  
Line: Column Attach  
Flow: PR-2010  
Location: Milpitas CA  
Line: Hot Solder Dip  
Flow: PR-2001

Environmental Test Operation(s)

Location: Milpitas CA  
Line: Test Services  
Flow: TS-2001

Package Information 2/

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
BGA		ALL	Solder	>= 1 mil
CGA	4-2400		Solder	>= 1 mil
LCC	4-2400		Solder	>= 1 mil
LGA	4-2400		Solder	>= 1 mil
OFN	4-2400		Solder	>= 1 mil

## Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

### SRI International Sarnoff

#### Quality System Information

SRI International Sarnoff  
201 Washington Road  
Princeton, NJ 08540-6449  
CAGE Code: 0DKS7  
Company Contact: George Kocsis, (609) 734-2933  
Qualifying Activity Contact: Philip Patterson, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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#### Technology Types:

5V 1.5 um BiCMOS, 20V BiCMOS, 100 V Driver/1.5um, 5V 0.8um, CMOS 5V 1.2um BiCMOS, 1.2 um SOS Rad Hard, 0.8um ECL, Dielectrically Isolated Schottky

#### Product Types:

TTL, CMOS, CMOS4000, HiNil, PMOS, NMOS, ECL, Schottky

#### Design Center(s)

Location: Princeton, NJ

Line: N/A

Flow: GEM Design Rules

#### Mask Development Center(s)

Location: Princeton, NJ

Line: Design

Flow: Photonics Brookfield, CT

#### Wafer Fabrication Operation(s)

Location: Princeton, NJ

Line: SRI International Sarnoff IC Center

Flow: GEM5VCOMB; GEMBICMOS2; GEMHV,GEM16 1.2u, GEM20 100v, SOSPRD, GEM 0.8u, DTI SHOT5V, DTI SHOT

#### Assembly Operation(s)

Location: Orlando FL

Line: Chip Supply Inc

Flow: Hermetic, Solder Seal

Location: Milpitas, Ca

Line: Golden Altos corp.

Flow: Hermetic, Solder Seal

Location: Fremont CA

Line: Pantronix Corp, QML

Flow: Hermetic, Solder Seal

#### Electrical Test Operation(s)

Location: Santa Clara CA

Line: Hi-Rel Microelectronics

Flow: Digital / Memory

Location: Round Rock, TX

Line: Anloy Technologies

Flow: Digital / Memory

Location: Sunnyvale CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: Digital / Memory

Location: Princeton, NJ

Line: SRI International Sarnoff

Flow: Digital / Memory

Location: Austin TX

Line: Austin Semiconductor, Inc.

Flow: Digital / Memory

#### Environmental Test Operation(s)

Location: Milpitas, Ca

Line: Golden Altos

Flow: MIL-STD-883

Location: Fremont CA

Line: Pantronix Corp, QML

Flow: MIL-STD-883

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**SRI International Sarnoff**

**Quality System Information**

SRI International Sarnoff  
201 Washington Road  
Princeton, NJ 08540-6449  
CAGE Code: 0DKS7  
Company Contact: George Kocsis, (609) 734-2933  
Qualifying Activity Contact: Philip Patterson, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

5V 1.5 um BiCMOS, 20V BiCMOS, 100 V Driver/1.5um, 5V 0.8um, CMOS 5V 1.2um BiCMOS, 1.2 um SOS Rad Hard, 0.8um ECL, Dielectrically Isolated Schottky

**Product Types:**

TTL, CMOS, CMOS4000, HiNil, PMOS, NMOS, ECL, Schottky

**Environmental Test Operation(s)**

Location: Austin TX  
Line: Austin Semiconductor, Inc.  
Flow: MIL-STD-883  
Location: Princeton, NJ  
Line: SRI International Sarnoff  
Flow: MIL-STD-883  
Location: Santa Clara CA  
Line: Hi-Rel Microelectronics  
Flow: MIL-STD-883

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	64		solder/gold	as required
Flatpack	48		solder/gold	as required
LCC	76		solder/gold	as required
LGA			gold	as required
PGA			solder/gold	as required
QFP	68		solder/gold	as required

**STMicroelectronics**

**Quality System Information**

STMicroelectronics  
 3 rue de suisse CS60816  
 35208 Rennes Cedex 2 FR  
 Website: <http://www.st.com/stonline/address/distrib/index.htm>  
 CAGE Code: F8859  
 Company Contact: Sylvie Peron, 33299264800  
 Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 300 K  
 Class: Q and V

**Technology Types:**

2µm (RHF voltage regulators & operational amplifiers), 0.7µm (RHF ACMOS), 0.35µm (RHR/RHF VCX), 0.25µm (RHF AD converters)

**Product Types:**

buffers, flip flops, latches, counters, registers, multiplexers, decoders, voltage regulators, operational amplifiers, AD converters

**Design Center(s)**

Location: Catania Italy  
 Line: N/A  
 Flow: RHF ACMOS, RHF voltage regulators, RHF operational amplifiers, RHR/RHF VCX, RHF AD converters

**Wafer Fabrication Operation(s)**

Location: Crolles France  
 Line: RHF VCX Family  
 Flow: confidential, contact manufacturer  
 Location: Crolles France  
 Line: RHF AD converters  
 Flow: confidential, contact manufacturer  
 Location: Carrollton TX  
 Line: RHF voltage regulators + RHF operational amplifiers  
 Flow: confidential, contact manufacturer  
 Location: Agrate Italy  
 Line: RHF ACMOS  
 Flow: confidential, contact manufacturer  
 Location: Carrollton TX  
 Line: RHF ACMOS  
 Flow: confidential, contact manufacturer

**Assembly Operation(s)**

Location: Rennes France  
 Line: Hermetic Assembly  
 Flow: 7086591 QML V  
 Location: Rennes France  
 Line: Hermetic Assembly  
 Flow: 7084427 QML Q

**Environmental Test Operation(s)**

Location: Rennes France  
 Line: N/A  
 Flow: Contact Manufacturer

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	up to 24		solder/gold	
Flatpack	up to 48		solder/gold	
SMD	up to 5		solder/gold	
TO	3		solder/gold	

**Texas Instruments**

**Quality System Information**

Texas Instruments  
6412 Highway 75 South  
Sherman, TX 75090  
Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
CAGE Code: 01295  
Company Contact: Brent Rhoton, (903) 868-6451  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q,N, V

**Technology Types:**

TTL, ABT, AC/ACT, AHC/AHCT, ALV, CHC/HCT, LV/LVC/LVCH, LVT/LVTH, S/LS/ALS, TTL, BCT, CDC, CBT, FCT, FAST, CMOS, HCMOS, BICMOS, SiGe, Bipolar

**Product Types:**

DSP, op amp, comparators, DAC/ADC, mixed signal, voltage regulators, interface, supervisors, general purpose linear and logic, power management, fifo, jtag, Bipolar logic, MCOMS Logic, programmable logic, microcontrollers, memory, ASIC

**Design Center(s)**

Location: Dallas, TX  
Line: Logic Design  
Flow: Logic Design Rules  
Location: Dallas, TX  
Line: Linear Design  
Flow: Linear Design Rules  
Location: Hiji, Japan  
Line: Logic  
Flow: Logic Design Rules  
Location: Freising, Germany  
Line: Logic / Mixed Signal / Linear  
Flow: HVAL Design Rules  
Location: Bangalore India  
Line: DSP/MCU/ASIC  
Flow: HPA/DSP/MCU  
Location: Houston TX  
Line: DSP Design  
Flow: DSP Design Rules  
Location: Dallas, TX  
Line: DSP Design  
Flow: DSP Design Rules  
Location: Sherman, TX  
Line: SLL Logic/Mixed Signal/ Linear  
Flow: HVAL Design Rules  
Location: Sherman, TX  
Line: MPD ASIC / FIFO / JTAG / Mixed Signal  
Flow: Military Products Design Rules

**Mask Development Center(s)**

Location: Tokyo,  
Line: ASIC / FIFO  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: Toppan  
Flow: Contact Texas Instruments

**Wafer Fabrication Operation(s)**

Location: Tucson AZ  
Line: Analog/Mixed Signal (Die/Wafer Bank Only)  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: Logic, Interface, Analog/Mixed Signal, ASIC, DSP (Classes Q and V)  
Flow: DFAB



**Texas Instruments**

**Quality System Information**

Texas Instruments  
6412 Highway 75 South  
Sherman, TX 75090  
Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
CAGE Code: 01295  
Company Contact: Brent Rhoton, (903) 868-6451  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q,N, V

**Technology Types:**

TTL, ABT, AC/ACT, AHC/AHCT, ALV, CHC/HCT, LV/LVC/LVCH, LVT/LVTH, S/LS/ALS, TTL, BCT, CDC, CBT, FCT, FAST, CMOS, HCMOS, BICMOS, SiGe, Bipolar

**Product Types:**

DSP, op amp, comparators, DAC/ADC, mixed signal, voltage regulators, interface, supervisors, general purpose linear and logic, power management, fifo, jtag, Bipolar logic, MCOMS Logic, programmable logic, microcontrollers, memory, ASIC

**Wafer Fabrication Operation(s)**

Location: Dallas, TX  
Line: DSP (Class Q and V)  
Flow: DMOSV  
Location: Sherman, TX  
Line: Logic, Analog/Mixed Signal, Programmable Logic (Classes Q and V)  
Flow: SFAB  
Location: Hiji, Japan  
Line: Contact Texas Instruments (Class Q)  
Flow: Contact Texas Instruments  
Location: Miho, Japan  
Line: DSP (Class Q)  
Flow: Contact Texas Instruments  
Location: Freising, Germany  
Line: Logic, Interface, Analog/Mixed Signal (Class Q and V)  
Flow: FFAB  
Location: Houston TX  
Line: Logic, Interface, ASIC, DSP (Class Q)  
Flow: HFAB  
Location: Merrimack, NH  
Line: MFAB (Classes Q and V) Die/Wafer Bank only  
Flow: Contact Texas Instruments  
Location: Anam Korea  
Line: DSP  
Flow: ANAM1

**Assembly Operation(s)**

Location: Taipei, Taiwan (TITL)  
Line: Plastic  
Flow: 07-012-1601,1901  
Location: Kuala Lumpur, Malaysia  
Line: Plastic Packaging only  
Flow: 07-015-1001,1002,1003,1004,0610  
Location: Singapore  
Line: Plastic (High Pin Count)  
Flow: Contact Texas Instruments  
Location: Tokyo,  
Line: TAB Assembly  
Flow: Contact Texas Instruments  
Location: Bangkok, Thailand (MMT)  
Line: Special Products Assembly (Hermetic) (Classes Q and V)  
Flow: Contact Texas Instruments

**Texas Instruments**

**Quality System Information**

Texas Instruments  
6412 Highway 75 South  
Sherman, TX 75090  
Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
CAGE Code: 01295  
Company Contact: Brent Rhoton, (903) 868-6451  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q,N, V

**Technology Types:**

TTL, ABT, AC/ACT, AHC/AHCT, ALV, CHC/HCT, LV/LVC/LVCH, LVT/LVTH, S/LS/ALS, TTL, BCT, CDC, CBT, FCT, FAST, CMOS, HCMOS, BICMOS, SiGe, Bipolar

**Product Types:**

DSP, op amp, comparators, DAC/ADC, mixed signal, voltage regulators, interface, supervisors, general purpose linear and logic, power management, fifo, jtag, Bipolar logic, MCOMS Logic, programmable logic, microcontrollers, memory, ASIC

**Assembly Operation(s)**

Location: San Diego, CA (Kyocera)  
Line: Special Products Assembly (Hermetic) (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Baguio City, Philippines (TIPI)  
Line: Contact Texas Instruments (Plastic)  
Flow: Contact Texas Instruments

**Electrical Test Operation(s)**

Location: Kuala Lumpur, Malaysia  
Line: Test (Class Q)  
Flow: Contact Texas Instruments  
Location: Bangkok, Thailand (MMT)  
Line: Test (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Dallas TX (CLAB)  
Line: Special Product (Class Q)  
Flow: Contact Texas Instruments  
Location: Houston TX  
Line: Special Products Test (Class Q)  
Flow: Houston Test Floor  
Location: Sherman, TX  
Line: Special Products Test (Class Q)  
Flow: Sherman Test Floor  
Location: Baguio City, Philippines (TIPI)  
Line: Contact Texas Instruments (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Taipei, Taiwan (TITL)  
Line: Special Products Test (Classes Q and N)  
Flow: Contact Texas Instruments

**Environmental Test Operation(s)**

Location: Houston TX  
Line: Environmental Test (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: Environmental Test (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Bangkok, Thailand (MMT)  
Line: Environmental Test (Classes Q and V)  
Flow: Contact Texas Instruments

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Texas Instruments****Quality System Information**

Texas Instruments  
 6412 Highway 75 South  
 Sherman, TX 75090  
 Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
 CAGE Code: 01295  
 Company Contact: Brent Rhoton, (903) 868-6451  
 Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q,N, V

**Technology Types:**

TTL, ABT, AC/ACT, AHC/AHCT, ALV, CHC/HCT, LV/LVC/LVCH, LVT/LVTH, S/LS/ALS, TTL, BCT, CDC, CBT, FCT, FAST, CMOS, HCMOS, BICMOS, SiGe, Bipolar

**Product Types:**

DSP, op amp, comparators, DAC/ADC, mixed signal, voltage regulators, interface, supervisors, general purpose linear and logic, power management, fifo, jtag, Bipolar logic, MCOMS Logic, programmable logic, microcontrollers, memory, ASIC

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
BGA		144-429	Eu Solder Balls	Contact Mfr
DIP	8-40		SN63/PB37	
Flatpack	8-56		SN63/PB37	Contact Mfr
LCC	20-44		SN63/PB37	
LGA	429		Au Plate	Contact Mfr
PGA		80-324	SN63/PB37+Au PI	Contact Mfr
Quad Flat Pack	68-408		SN63/PB37+Au PI	Contact Mfr

## Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

### *Texas Instruments SVA (formerly National Semiconductor)*

#### **Quality System Information**

Texas Instruments SVA (formerly National Semiconductor)  
2900 Semiconductor Drive  
Santa Clara, CA 95052-8090  
Website: <http://www.ti.com/contacts/>  
CAGE Code: 27014, Symbol Code: CCXP  
Company Contact: Dennis Tanguay, (408) 721-3509  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 30-300 K  
Class: Q and V

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#### **Technology Types:**

BiPolar, CMOS, BiCMOS

#### **Product Types:**

Analog, linear, interface, LVDS

#### **Design Center(s)**

Location: TISVA, Takada, Japan

Line: TISVA Design Rules

Flow: Q and V

Location: TISVA, Greenock, Scotland

Line: TISVA Design Rules

Flow: Q and V

Location: TISVA, Arlington, TX (Die Bank)

Line: TISVA Design Rules

Flow: Q and V

Location: TISVA, Santa Clara, CA

Line: TISVA Design Rules

Flow: Q and V

Location: TISVA, Furstenfeldbruck, Germany

Line: TISVA Design Rules

Flow: Q and V

#### **Mask Development Center(s)**

Location: Photonics, Danbury, CT

Line: TISVA Specific

Flow: Q and V

Location: Dupont, Rousett, France

Line: TISVA Specific

Flow: Q and V

Location: Dupont, Santa Clara, CA

Line: TISVA Specific

Flow: Q and V

#### **Wafer Fabrication Operation(s)**

Location: Scientific Coating Lab, Santa Clara, CA

Line: Wafer Backside Gold

Flow: Selected analog parts (Q and V)

Location: TISVA, South Portland ME

Line: 8" CMOS 7, CMOS 8, CMOS 9

Flow: Q and V

Location: TISVA, Greenock, Scotland

Line: Fab 3, 6" (BiPolar and CMOS)

Flow: Q and V

Location: Taiwan Semiconductor Manuf. Co., Hsin-Chu, Taiwan

Line: 8" (BiPolar and CMOS)

Flow: Q only

Location: Quality Backgrind and Backmetal Service, Santa Clara, CA

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

Location: TISVA, Arlington, TX (Die Bank)

Line: 6" (BiPolar and CMOS)

Flow: Q and V

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**

***Texas Instruments SVA (formerly National Semiconductor)***

**Quality System Information**

Texas Instruments SVA (formerly National Semiconductor)  
2900 Semiconductor Drive  
Santa Clara, CA 95052-8090  
Website: <http://www.ti.com/contacts/>  
CAGE Code: 27014, Symbol Code: CCXP  
Company Contact: Dennis Tanguay, (408) 721-3509  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 30-300 K  
Class: Q and V

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**Technology Types:**

BiPolar, CMOS, BiCMOS

**Product Types:**

Analog, linear, interface, LVDS

**Assembly Operation(s)**

Location: TISVA Melaka Malaysia

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

Location: Millennium Microtech, Bangkok Thailand

Line: Ceramic, with selected screen tests (no burn-in)

Flow: Q and V

Location: Golden Altos, Milpitas CA

Line: TO Metal Can, with selected screen tests (no burn-in)

Flow: V

Location: Golden Altos, Milpitas CA

Line: high pin count ceramics, with selected screen tests (no burn-in)

Flow: Q and V

Location: Amkor Technology, site P1, Muntinlupa City, Philippines

Line: Ceramic, with selected screen tests (no burn-in)

Flow: Q and V

Location: Team Pacific, FTI Complex, Taguig, Philippines

Line: TO Metal Can, with selected screen tests (no burn-in)

Flow: Q only

**Electrical Test Operation(s)**

Location: TISVA Melaka Malaysia

Line: Electrical Test

Flow: Q and V

Location: TISVA, Santa Clara, CA

Line: Electrical Test

Flow: Q and V

**Environmental Test Operation(s)**

Location: contact manufacturer

Line: Burn-In, Life Test

Flow: Q and V

Location: Golden Altos, Milpitas CA

Line: Group B, D

Flow: Q and V

Location: Aeroflex RAD, Colorado Springs, CO

Line: Ionizing Radiation (Low Dose)

Flow: Q and V

Location: White Sands Missile Range New Mexico

Line: Ionizing Radiation (Low Dose)

Flow: Q and V

Location: TISVA, South Portland ME

Line: Ionizing Radiation (Total Dose)

Flow: Q and V

Location: TISVA, Santa Clara, CA

Line: Burn-In, Life Test, Ionizing Radiation (Total Dose)

Flow: Q and V

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Texas Instruments SVA (formerly National Semiconductor)****Quality System Information**

Texas Instruments SVA (formerly National Semiconductor)  
 2900 Semiconductor Drive  
 Santa Clara, CA 95052-8090  
 Website: <http://www.ti.com/contacts/>  
 CAGE Code: 27014, Symbol Code: CCXP  
 Company Contact: Dennis Tanguay, (408) 721-3509  
 Qualifying Activity Contact: Shing Yu, (614) 692-0588  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 30-300 K  
 Class: Q and V

**Technology Types:**

BiPolar, CMOS, BiCMOS

**Product Types:**

Analog, linear, interface, LVDS

**Environmental Test Operation(s)**

Location: TISVA Melaka Malaysia

Line: Group B, D

Flow: Q and V

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CerDip (glass seal)	8, 14, 16		solder	100 mil
CerPack (glass seal)	10, 14, 16, 20		solder	50 mil
Leadless Chip Carrier	20, 28		solder	50 mil
Other Cans	2, 3, 8, 10		solder	100 and 200 mil
PGA		180 (15x15)	gold	100 mil
Quad CerPack - Gull Wing	128		gold	20 mil
Quad Cerpack	48, 68		gold	25 and 50 mil
S/Brazed DIP	14, 24		solder	100 mil
SOIC	10, 14, 16		solder	50 mil
TO-3 Can	2		solder	430 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Vishay-Siliconix****Quality System Information**

Vishay-Siliconix  
 2201 Laurelwood Road  
 Santa Clara, CA 95056-0951  
 Website: <http://www.vishay.com/company/contacts/#sales>  
 CAGE Code: 17856, Symbol Code: CDBN  
 Company Contact: Liz Korntved, (408) 970-5640  
 Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q

**Technology Types:**

Bipolar, metal gate II, silicon gate I& II LDMOS

**Product Types:**

analog switches, analog multiplexers, video switch

**Design Center(s)**

Location: Santa Clara CA

Line: Design

Flow: 4149

**Mask Development Center(s)**

Location: Santa Clara CA

Line: Mask

Flow: 4016

**Assembly Operation(s)**

Line: Military Assembly

Flow: Sub-001APPANP01 Rev AC

Location: Santa Clara CA

Line: Metal Can Assembly and Back-up Assembly

Flow: PF-S-0005-FT Rev AX

**Electrical Test Operation(s)**

Location: Santa Clara CA

Line: Electrical Test

Flow: PF-S-0005-FT Rev AX

**Environmental Test Operation(s)**

Location: Santa Clara CA

Line: Environmental

Flow: PF-S-0005-FT Rev AX

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	10		solder/gold	N/A
CerDip (glass seal)	8-28		solder	
Flatpack	14-16		solder/gold	
LCC	20-28		solder/gold	
Side-Braze	14-28		solder/gold	

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

White Electronic Designs Corporation

Quality System Information

White Electronic Designs Corporation
3601 East University Drive
Phoenix, AZ 85034-7217
CAGE Code: 54230
Company Contact: Tim Johnson, (602) 437-1520
Qualifying Activity Contact: Michael Grammens, (614) 692-0604
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q

Technology Types:

CMOS

Product Types:

SRAM

Design Center(s)

Location: N/A

Line: N/A

Flow: N/A

Mask Development Center(s)

Location: N/A

Line: N/A

Flow: N/A

Wafer Fabrication Operation(s)

Location: Purchased Die

Line: Certified through TRB process 035A00002

Assembly Operation(s)

Location: Pantronix, Fremont CA

Line: Ceramic, with screening

Flow: Q Only

Location: Amertron, Pampanga, Philippines

Line: Ceramic, with screening

Flow: Q Only

Location: Tempe AZ

Line: Premier Semiconductor Services

Flow: Solder lead finish

Electrical Test Operation(s)

Location: Amertron, Pampanga, Philippines

Line: Electrical Test

Flow: Q Only

Location: White Electronic Designs, Phoenix AZ

Line: Electrical Tests

Flow: Q Only

Environmental Test Operation(s)

Location: White Electronic Designs, Phoenix AZ

Line: Conformance Tests

Flow: Q Only

Location: Amertron, Pampanga, Philippines

Line: Burn-in

Flow: Q Only

Package Information 2/

Table with 5 columns: Type, Lead Range, Matrix Size, Lead Finish, Lead Pitch. Rows include DIP-J lead, DIP-S lead, DIP-straight lead, Flatpack, LCC, ZIP.



**Xilinx Incorporated**

**Quality System Information**

Xilinx Incorporated  
2100 Logic Drive  
San Jose, CA 95124-3450  
Website: [http://www.xilinx.com/company/sales/ww\\_disti.htm](http://www.xilinx.com/company/sales/ww_disti.htm)  
CAGE Code: 68994  
Company Contact: Craig Taylor, (408) 626 6381  
Qualifying Activity Contact: Philip Patterson, (614) 692-2178  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 100 K  
Class: Q, N

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**Technology Types:**

0.6um, 0.5um, 0.35um, 0.22um, 0.18 um 0.15 um, 0.13 um, CMOS , 0.6um CMOS floating gate

**Product Types:**

logic, gate arrays, FPGA, EPROM, SPROM

**Design Center(s)**

Location: San Jose CA  
Line: Programmable Platforms Development (PPD)  
Flow: DPS0021  
Location: Longmont Colorado  
Line: Programmable Platforms Development (PPD), Software Development  
Flow: DPS0021

**Mask Development Center(s)**

Location: San Jose CA  
Line: Programmable Platforms Development (PPD)  
Flow: DSP0015

**Wafer Fabrication Operation(s)**

Location: Hsin-chu Taiwan UMC  
Line: 8 and 12 inch, 0.35um, 0.25um, 0.18um, 0.15um, 0.13 um  
Flow: per UMC (new & legacy product)  
Location: Tohoku Japan  
Line: 6 inch, 8 inch, 0.6um, 0.7um, 0.8um, 0.25um  
Flow: per Sieko-Epson (legacy product)

**Assembly Operation(s)**

Location: Amkor Taiwan (Unitive)  
Line: Bump  
Flow: Per Unitive  
Location: Amkor Philippines  
Line: Plastic  
Flow: MFC0067, MFC0068, MFC0007, MFC0008  
Location: Amkor Korea  
Line: Plastic  
Flow: MFC0067, MFC0068  
Location: IBM Bromont Canada  
Line: Ceramic Flip Chip Assy & Column Attach  
Flow: Per IBM  
Location: Six Sigma, Milpitas CA  
Line: Column attach (CG717 ONLY)  
Flow: Per Six Sigma  
Location: SPIL Taiwan  
Line: Bump  
Flow: MFC0082

**Electrical Test Operation(s)**

Location: Silicon Turnkey Solutions (STS), Milpitas CA  
Line: Electrical Test  
Flow: Product level TSC controls  
Location: San Jose CA  
Line: Xilinx (Backup)  
Flow: QAP0094, MFC0067, MFC0068

**Environmental Test Operation(s)**

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Xilinx Incorporated****Quality System Information**

Xilinx Incorporated  
 2100 Logic Drive  
 San Jose, CA 95124-3450  
 Website: [http://www.xilinx.com/company/sales/ww\\_disti.htm](http://www.xilinx.com/company/sales/ww_disti.htm)  
 CAGE Code: 68994  
 Company Contact: Craig Taylor, (408) 626 6381  
 Qualifying Activity Contact: Philip Patterson, (614) 692-2178  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 100 K  
 Class: Q, N

**Technology Types:**

0.6um, 0.5um, 0.35um, 0.22um, 0.18 um 0.15 um, 0.13 um, CMOS , 0.6um CMOS floating gate

**Product Types:**

logic, gate arrays, FPGA, EPROM, SPROM

**Environmental Test Operation(s)**

Location: Silicon Turnkey Solutions (STS), Milpitas CA

Line: Burn-in / QCI

Flow: BIC0009, ADQ0007

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CF	1114		90Pb/10Sn Col	40 mil
CLCC	44		solder	50 mil
CQFP	100-228		gold plate	25 mil
CSGA (CG)	560, 717		90Pb/10Sn Col	25 mil
Cerdip (DD)	8		solder dip	100 mil
FG	256-1156		63Sn//37Pb Ball	40 mil
HQFP	208-240		Solder plate	20 mil
PGA		68-559	gold plate	50mil/100mil
PQFP	100-240		Solder plate	50 mil
Plastic BGA	225-728		63Sn//37Pb Ball	50-60 mil
SOIC	20		Solder plate	50 mil
VQFP	4		Solder plate	32 mil

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information

**XTREME Semiconductor**

**Quality System Information**

XTREME Semiconductor  
12908 Trails End Road, Suite E  
Leander, TX 78641  
CAGE Code: 3RNH0  
Company Contact: Marty Lanning, (602) 368-5575  
Qualifying Activity Contact: Sean McNulty, (614) 692-8800  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

1.2um CMOS, 3.0 um CMOS

**Product Types:**

A/D Converter

**Design Center(s)**

Location: Contact Xtreme Semiconductor

Line: OEM

Flow: OEM

**Mask Development Center(s)**

Location: Pocatello, ID

Line: ON Semiconductor (formerly AMIS)

Flow: Contact XTREME Semiconductor

**Wafer Fabrication Operation(s)**

Location: Pocatello, ID

Line: AMI Semiconductor

Flow: QML Flow

**Assembly Operation(s)**

Location: San Diego CA

Line: Maxwell Technology

Flow: Military Hermetic QM Q/V Certified/Qualified

Location: Milpitas, CA

Line: Golden Altos

Flow: Military Hermetic QML Q Certified/Qualified

**Electrical Test Operation(s)**

Location: San Diego CA

Line: Maxwell Technology

Flow: Military Hermetic QML Q Certified , Tested to SMD specification

Location: Leander TX

Line: Anloy Technology

Flow: DSCC Certified Commercial Lab Suit for 883 Electrical Test, Tested to SMD specifications

**Environmental Test Operation(s)**

Location: Milpitas, CA

Line: Golden Altos

Flow: Military Hermetic QML Q Certified/Qualified

Location: San Diego CA

Line: Maxwell Technology

Flow: Military Hermetic QML Q Certified/Qualified

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	8-64		Solder/Gold	100 mil
LCC	4-84		Solder/Gold	40-50 mil

## **QML Manufacturer Military Distributors**

This section contains a list of QML manufacturers' military distributors. This information was supplied by the QML manufacturers and is provided in QML-38535 as a service from DLA Land and Maritime-VQC. This listing is provided as a service only and is in no way intended to be an endorsement or restriction by the Government. For additional information or further update contact the applicable manufacturer in the QML Program Status section.

### **Analog Devices, 7910 Triad Center Dr, Greensboro,, NC 27409**

Distributors:

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034  
Digi-Key, 701 Brooks Avenue South, Thief River Falls, MN 56701  
Rochester Electronics, 10 Malcolm Hoyt Drive, Newburyport, MA 01950-4018  
Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

### **Atmel-Nantes, La Chantrerie BP 70602, 44306 Nantes Cedex 3,, FR**

Distributors:

All American Semiconductor, 16115 Northwest 52nd Avenue, Miami, FL 33014  
Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210  
Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

### **BAE Systems, Manassas,, VA 22110-4122**

Distributors:

Space Key Components, 9300 Wellington Road, Manassas, VA 22110-4122

### **Cypress Semiconductor, 198 Champion Court, San Jose,, CA 95134-1709**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

### **e2v aerospace and defense, inc. (DBA QP Semiconductor), 765 Sycamore Drive, Milpitas,, CA 95035**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

### **Intersil Corporation, P O Box 37, Palm Bay,, FL 32905-3398**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210  
Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

### **Linear Technology, 1630 McCarthy Blvd., Milpitas,, CA 95035-7487**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

### **Microsemi Analog Mixed Signal Group, 11861 Western Avenue, Garden Grove,, CA 92641-2119**

Distributors:

All American Semiconductor, 16115 Northwest 52nd Avenue, Miami, FL 33014  
Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210  
Avnet, 2211 S. 47th Street, Phoenix, AZ 85034  
Falcon Electronics, 47 Mall Dr (# 5), Commack, NY 11725  
Richardson Electronics, 40W267 Keslinger Road, LaFox, IL 60147  
Universal Semiconductor, 2775 West Cypress Creek Drive, Fort Lauderdale, FL 33309

### **Microsemi SoC, Mountainview,, CA 94043-4655**

Distributors:

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

### **Rochester Electronics, LLC, 10 Malcolm Hoyt Drive, Newburyport,, MA 01950**

Distributors:

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

### **STMicroelectronics, 3 rue de suisse CS80816, 35208 Rennes Cedex 2, FR**

Distributors:

Future Electronics, 237 Hymus Boulevard, Qubeck, Point Claire, Quebec H9R 5C7 Canada  
Nu Horizons, 70 Maxess Road, Melville, NY 11747  
Avnet, 2211 S. 47th Street, Phoenix, AZ 85034  
Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

## **QML Manufacturer Military Distributors**

This section contains a list of QML manufacturers' military distributors. This information was supplied by the QML manufacturers and is provided in QML-38535 as a service from DLA Land and Maritime-VQC. This listing is provided as a service only and is in no way intended to be an endorsement or restriction by the Government. For additional information or further update contact the applicable manufacturer in the QML Program Status section.

### **Texas Instruments, 6412 Highway 75 South, Sherman,, TX 75090**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

Rochester Electronics, 10 Malcolm Hoyt Drive, Newburyport, MA 01950-4018

### **Texas Instruments SVA (formerly National Semiconductor), Santa Clara,, CA 95052-8090**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

Future Electronics, 237 Hymus Boulevard, Qubeck, Point Claire, Quebec H9R 5C7 Canada

### **Vishay-Siliconix, 2201 Laurelwood Road, Santa Clara,, CA 95056-0951**

Distributors:

Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210

Tri-Start Electronics, 979 Marconi Ave., Ronkonkoma, NY 11779

Spirit Electronics, 23910 N 19th Ave, Suite 26, Phoenix, AZ 85027

Newark Electronics, 4801 N. Ravenswood, Chicago, IL 60640

New Yorker Electronics, 209 Industrial Parkway, Northvale, NJ 07647

Mouser Electronics, 1000 North Main Street, Mansfield, TX 76063

Jaco Electronics, 145 Oser Avenue, Hauppauge, NY 11788-3721

Future Electronics, 237 Hymus Boulevard, Qubeck, Point Claire, Quebec H9R 5C7 Canada

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

Allied Electronics, 7410 Pebble Dr., Fort Worth, TX 76118

Falcon Electronics, 47 Mall Dr (# 5), Commack, NY 11725

### **Xilinx Incorporated, 2100 Logic Drive, San Jose,, CA 95124-3450**

Distributors:

Nu Horizons, 70 Maxess Road, Melville, NY 11747

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034

Digi-Key, 701 Brooks Avenue South, Thief River Falls, MN 56701

**Standardized Microcircuit Drawing (SMD) Approved Sources are available at the following web pages:**

**Qualification Part Search:** <http://www.landandmaritime.dla.mil/programs/psearch/>

**Standard Microcircuit Cross-Reference:** <http://www.landandmaritime.dla.mil/Programs/Smcr/>

**Qualified Products Database:** <http://qpldocs.dla.mil/search/parts.aspx?qpl=1118>