

**DLA Land and Maritime - VQ**  
**Supplemental Information Sheet for Electronic QML-38535**

**Date: 9/23/2014**

**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	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



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

**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: PSOP3

Flow: 001-0501-2952

Location: Muntinlupa City, Metro Manila Philippines

Line: QFP

Flow: 001-0501-2306

Location: Muntinlupa City, Metro Manila Philippines

Line: Hermetic

Flow: 02-0501-1904

Location: Muntinlupa City, Metro Manila Philippines

Line: TSSOP

Flow: 001-0501-2317

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: SOIC

Flow: 001-0501-2302

Location: Muntinlupa City, Metro Manila Philippines

Line: TQFP

Flow: 001-0501-2322

Location: Muntinlupa City, Metro Manila Philippines

Line: SSOP

Flow: 001-0501-2319

Location: Muntinlupa City, Metro Manila Philippines

Line: PDIP

Flow: 001-0501-2300

Location: Muntinlupa City, Metro Manila Philippines

Line: TSOP

Flow: 001-0501-2317

Location: Bina, Laguna Philippines

Line: CABGA

Flow: 02-0501-1251

Location: Bina, Laguna Philippines

Line: SBGA

Flow: 001-0501-2870

Location: Bina, Laguna Philippines

Line: Flex Array

Flow: 02-0501-1632

Location: Muntinlupa City, Metro Manila Philippines

Line: PLCC

Flow: 001-0501-2304

**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: SSOP

Flow: 001-0501-2319

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: TSSOP

Flow: 001-0501-2317

Location: Muntinlupa City, Metro Manila Philippines

Line: PLCC

Flow: 001-0501-2304

Location: Muntinlupa City, Metro Manila Philippines

Line: Hermetic

Flow: 02-0501-1904

Location: Muntinlupa City, Metro Manila Philippines

Line: PSOP3

Flow: 001-0501-2952

Location: Muntinlupa City, Metro Manila Philippines

Line: SIP

Flow: 001-0501-2310

Location: Muntinlupa City, Metro Manila Philippines

Line: TSOP

Flow: 001-0501-2317

Location: Bina, Laguna Philippines

Line: CABGA

Flow: 02-0501-1251

Location: Bina, Laguna Philippines

Line: SBGA

Flow: 001-0501-2870

**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: Flex Array

Flow: 02-0501-1632

Location: Muntinlupa City, Metro Manila Philippines

Line: TQFP

Flow: 001-0501-2322

**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: Nashua (DSP Tools) NH

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: Aalborg Denmark

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: 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: Austin TX

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: San Jose CA

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: Valencia Spain

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: Limerick Ireland

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

Flow: Design Manual Ver 1.0

Location: Greensboro NC

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

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**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: Wilmington MA  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver. 1.0  
Location: Newbury United Kingdom  
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: Vancouver WA  
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: OKI Tokoyo Japan  
Line: Bipolar (Q)  
Flow: ADI-0088  
Location: Santa Clara CA  
Line: Bipolar, BiFET, BiCMOS (Q and V)  
Flow: ADI-0088  
Location: Limerick Ireland  
Line: CMOS, BiMOS (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

**Assembly Operation(s)**

Location: ADI, Manila Philippines  
Line: Ceramic Package, metal can package  
Flow: F-0133M, F-0153M, F-0154M

**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, Greensboro NC  
 Line: Ceramic Packages  
 Flow: ADI-0300  
 Location: ADI, Gen. Trias, Cavite Philippines  
 Line: Ceramic, metal can  
 Flow: F-0133M,F0153M & F0154M

**Electrical Test Operation(s)**

Location: Wilmington MA  
 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  
 Location: ADI, Gen. Trias, Cavite Philippines  
 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

**Environmental Test Operation(s)**

Location: ADI, Manila Philippines  
 Line: Screening, Burn-In, Group B/C  
 Flow: ADI-0300  
 Location: ADI, Gen. Trias, Cavite Philippines  
 Line: Screening, Burn-In, Group B/C  
 Flow: Per PROMIS system corresponding to part number  
 Location: Limerick Ireland  
 Line: Environmental Test  
 Flow: LK-00399  
 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

**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

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**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: Garching, Germany

Line: Atmel Design Center

Flow: contact manufacturer

Location: Milan, Italy

Line: Atmel Design Center

Flow: contact manufacturer

Location: Nantes, France

Line: Atmel Design Center

Flow: contact manufacturer

Location: Bracknell, UK

Line: Atmel Design Center

Flow: contact manufacturer

**Mask Development Center(s)**

Location: Taoyuan, Taiwan

Line: TOPPAN CHUNGWA ELECTRONICS CO., LTD. (T.C.E.)

Flow: N/A

**Wafer Fabrication Operation(s)**

Location: UMC, HsinChu, Taiwan

Line: 8S for CMOS 0.18um and RT Variouts

Flow: 8S for CMOS 0.18um and RT Variouts

Location: L Foundry (formerly Atmel), Rousset Cedex, France

Line: CMOS 0.35um, 0.25um, 0.18um and RT Variouts

Flow: contact manufacturer

Location: MHS Nantes, France --- (Formerly Atmel-Nantes)

Line: CMOS 0.8,0.6,0.5 RT and RTP Variout

Flow: contact manufacturer

Location: UMC, Tainan, Taiwan

Line: 12A for CMOS 0.09um and RT Variouts

**Assembly Operation(s)**

Location: Millennium Microtech Co, Ltd, Chachoengsao, Thailand

Line: MMT

Flow: MMTAH027 & 035 (QMLV and QMLQ DLA qualified)

Location: e2v, Grenoble, France

Line: Hermetic Assembly, PGA, Sidebraze, 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

**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

**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
LCC	24		gold	
LGA	349-625		gold	
MCGA	349-472		solder	50 mil
PGA		64-232	gold	100 mil

**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

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**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), Photonics, IBM, Towne Labs  
Flow: Contact Supplier

**Wafer Fabrication Operation(s)**

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 0.5um - RHCOS5M, RHCOS5ML  
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 0.8um - RHCOS3E, RHCOS4E, RHCOS4S  
Location: Burlington VT  
Line: IBM Microelectronics  
Flow: R25 (IBM 0.25um CMOS6SF)

**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	



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

**Criteria Labs**

**Quality System Information**

Criteria Labs  
706 Brentwood Street  
Austin, TX 78744  
Website: <http://criterialabs.com>  
CAGE Code: 1NQ10  
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

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**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/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
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: 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

Location: Round Rock TX

Line: Fab2; 0.8u, CMOS & BICMOS

Flow: 90-00033 Military Programs

**Assembly Operation(s)**

Location: MMT, Chachoengsao Thailand

Line: Hermetic

Flow: 49-15xxx per package type

Location: Amkor Anam, Manila Philippines

Line: CLCC, CERDIP

Flow: 49-1xxxx per package type

**Electrical Test Operation(s)**

Location: CML, Cavite City Philippines

Line: PROM, PLD, clocks

Flow: 16-0001 program change procedure

Location: Integra, Wichita KS

Line: nvSRAM

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: Atlantic Analytical Laboratories, Whitehouse NJ

Line: Internal Water Vapor

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

**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/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
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: Bloomington, Mn  
Line: Cypress  
Flow: R9 (90 Nanometer CMOS)  
Location: Bloomington, Mn  
Line: Cypress  
Flow: R9 (90 Nanometer CMOS)  
Location: Original IC Manufacturer  
Line: Various  
Flow: Various

#### Assembly Operation(s)

Location: Milpitas, CA  
Line: Golden Altos, Alternate Assembly  
Flow: Standard Golden Altos QML Line, GAF 1491, 1492  
Location: Milpitas, Ca  
Line: Alternate Tinning  
Flow: QML Tinning procedure  
Location: Simi Valley, Ca  
Line: DPA Class Q SRAM  
Flow: Standard DPA Components QML Flow DPA-OID-009  
Location: Simi Valley, Ca  
Line: DPA Class V contract assembly  
Flow: Standard DPA Components QML Flow DPA-OID-009

#### Environmental Test Operation(s)

Location: Simi Valley, Ca  
Line: DPA Environmental test  
Flow: Standard DPA 883 Environmental Test Procedure  
Location: Milpitas, Ca  
Line: Alternate Solderability  
Flow: DSCC Approved Solderability Flow

**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/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
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: Margaret Dancey, (408) 585-7172

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

**Design Center(s)**

Location: Seattle, WA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Hong Kong

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: Los Angeles, CA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: San Jose, CA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Canada

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Swindon, UK

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Taiwan

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Tempe, AZ

Line: N/A

Flow: Per SCD-14 Device Design Requirements

**Wafer Fabrication Operation(s)**

Location: California

Line: QP11 Micrel, OP AMPs/Switches bipolar

Flow: 1u, 2 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

Location: Lubbock, TX

Line: QP2 Xfab, CMOS

Flow: 0.8u, 3 metal

Location: UK

Line: QP12 Plessey, Bipolar logic

Flow: 1u, 3 metal

**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: Margaret Dancey, (408) 585-7172

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: 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

Location: Golden Altos, Milpitas, CA

Line: Military Hermetic

Flow: Per SCD-12 Assembly Build Requirements

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

Line: Military Screening

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

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

**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

---

**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: Austin TX

Line: MOS13

Flow: HiP1.3 (.5um)

Location: Austin TX

Line: MOS8

Flow: 1.0 um

Location: Austin TX

Line: MOS11

Flow: 0.65 um

Location: Sendai Japan

Line: TCS

Flow: 1 um

Location: France

Line: HCMOS

Flow: 3.0 um

Location: Italy

Line: F8

Flow: CMOSE5-U35

Location: Scotland

Line: MOS1

Flow: 1.5 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: GR180-B1300  
 Flow: 0AR3QT0A, 0ARAR3QT  
 Location: France  
 Line: GR18-B160  
 Flow: 2A00Q  
 Location: France  
 Line: J971-B1300  
 Flow: 2A00Q  
 Location: France  
 Line: Sentry20-AEHR  
 Flow: 2A00QT, 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/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Cerdip	8-48		solder	100 mil
Cerpac	8-48		solder	50 mil
Cerquad	20-304		solder/gold	15, 19-50 mil
Flat Packages	8-172		solder/gold	19-50 mil
JLCC	28-84		solder/gold	50-100 mil
LCC	3-84		solder/gold	25 35 40 50 mil
PGA		28-476	solder/gold	50, 100 mil
SOIC	8-30		solder/gold	25, 50, 100 mil
Sidebrazed	8-64		solder/gold	70, 100 mil
TO CAN/Header	2-16		solder/gold	50-400 mil

**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  
 Website: <http://www.honeywellmicroelectronics.com/>  
 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
DBGA/LGA	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

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**Technology Types:**

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

**Product Types:**

SRAM, Logic

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
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

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**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: Intersil, Palm Bay FL  
Line: Compliant Hermetic  
Flow: 841XXX, 240XXX, 352XXX  
Location: Amkor Philippines  
Line: Hermetic (DIP, FP, Leadless CC, PGA)  
Flow: Non-rad hard, Class M only

**Electrical Test Operation(s)**

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  
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

**Environmental Test Operation(s)**

Location: Intersil, Palm Bay FL  
Line: Compliant Hermetic  
Flow: 86XXX, 40H-721-052-XXX, 8\*XXXXX, 9\*XXXXX, 54XXXX, 87XXXX, 240XXX

**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: STATS ChipPAC, Kuala Lumpur Malaysia  
 Line: Compliant Hermetic  
 Flow: 86XXXX, 40H-721-052-XXX, 8\*XXXXX, 9\*XXXXX, 87XXXX, 240XXX  
 Location: Millenium Microtech, Chachoengsao, Thailand  
 Line: Compliant Hermetic  
 Flow: 86XXXX, 40-H721-052-XXX, 8\*XXXXX, 9\*XXXXX, 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: 03KL1  
 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: San Diego CA  
 Line: Kyocera America, Inc.  
 Flow: QML Flow  
 Location: Milpitas CA  
 Line: Hi-Reliability Microelectronics  
 Flow: TM2002, TM2007

**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: Bangkok Thailand

Line: Millenium Microtech

Flow: Contact Manufacturer

Location: San Jose CA

Line: Corwil

Flow: Customer Specific

Location: Fremont CA

Line: Pantronix

Flow: Standard Pantronix QML flow

**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: 100 K  
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, 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, Plano Tx  
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, Cary NC  
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 Technoogy, Ismaning Germany  
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

Location: Linear Technoloby, Hangzhou P.R.C  
Line: QM Plan 06-03-7039  
Flow: Q,V,B,S,M

Location: Linear Technology, Grass Valley Ca  
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

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: 100 K  
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: Linear Technology, Milpitas Ca  
Line: Hillview, Ceramic and TO Can  
Flow: Q,V,B,S,M  
Location: Linear Technology, Milpitas Ca  
Line: Ceramic and Metal Can, with Screening  
Flow: Q,V,B,S,M  
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

**Electrical Test Operation(s)**

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

Line: Hitachi, K4 fab facility

Flow: 1 MEG EEPROM CMOS 1LM, 6 ", 0.8um

Location: Pocatello ID

Line: AMI, Fab 9

Flow: A/D Converter

**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/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP	28-44		gold	100 mil
LLC	28-40		gold	50 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Microchip Technology (Thailand) Co., Ltd (MTHAI)****Quality System Information**

Microchip Technology (Thailand) Co., Ltd (MTHAI)

17/2 Moo 18, Suwiontawong Road

Chachoengsao, Th 24000

CAGE Code: N/A

Company Contact: Padet Sang nikornnopkao, (66-38)845530

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	

**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: Garden Grove CA

Line: Linear

Flow: SGM5901, SGM5902

Location: Philippines (PSI)

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

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**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: Singapore,  
Line: Photronics  
Flow: Per QM Plan 1-04-1347  
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

**Wafer Fabrication Operation(s)**

Location: Singapore,  
Line: Chartered Semiconductor (CSM)  
Flow: 0.35 um, .45um, .6um CMOS FPGA  
Location: Nagaokakyo, Kyoto Japan  
Line: Matsushita (MEC)  
Flow: 0.25um, 0.6um, 0.8um and 1.0um CMOS FPGA  
Location: Hsinchu City Taiwan  
Line: United Microelectronics corp (UMC)  
Flow: .15um, 0.25um CMOS and .22u Flash/CMOS FPGA  
Location: Regensburg, Germany  
Line: Infineon Technologies  
Flow: 0.25um Flash/CMOS FPGA  
Location: Hsinchu City, Taiwan  
Line: Winbond Electronics  
Flow: .045um, 0.6um, 0.8um CMOS FPGA  
Location: Manassas, VA  
Line: BAE Systems  
Flow: 0.8 Micron CMOS Rad Hard FPGA

**Assembly Operation(s)**

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

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

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

Electrical Test Operation(s)

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

Environmental Test Operation(s)

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

Package Information 2/

Table with 5 columns: Type, Lead Range, Matrix Size, Lead Finish, Lead Pitch. Row 1: Flatpack, 256, gold

**Microsemi-Phoenix**

**Quality System Information**

Microsemi-Phoenix  
 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: Tempe AZ

Line: Premier Semiconductor Services

Flow: Solder lead finish

Location: Pantronix, Fremont CA

Line: Ceramic, with screening

Flow: Q Only

Location: Amertron, Pampanga, Philippines

Line: Ceramic, with screening

Flow: Q Only

**Electrical Test Operation(s)**

Location: White Electronic Designs, Phoenix AZ

Line: Electrical Tests

Flow: Q Only

Location: Amertron, Pampanga, Philippines

Line: Electrical Test

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/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
DIP-J lead			solder/gold	
DIP-S lead			solder/gold	
DIP-straight lead			solder/gold	
Flatpack			solder/gold	
LCC			solder/gold	
ZIP			solder/gold	

**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**

**Minco Technology Labs**

**Quality System Information**

Minco Technology Labs  
1805 Rutherford Lane  
Austin, TX 78754  
Website: <http://www.mincotech.com/>  
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

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**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				

**ON Semiconductor**

**Quality System Information**

ON Semiconductor  
2300 Buckskin Road  
Pocatello, ID 83201-2798  
Website: <http://www.onsemi.com/>  
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, American Fork, UT  
Line: QML Design  
Flow: 12MQE00004A  
Location: ON Semiconductor, Lower Gwynedd, PA  
Line: QML Design  
Flow: 12MQE00004A  
Location: ON Semiconductor, Dallas, TX  
Line: QML Design  
Flow: 12MQE00004A  
Location: ON Semiconductor, Pocatello, ID  
Line: QML Design  
Flow: 12MQE00004A

**Mask Development Center(s)**

Location: Wafer Fab Controlled  
Line: Wafer Fab Controlled  
Flow: 12MID7619163

**Wafer Fabrication Operation(s)**

Location: ON Semiconductor, Gresham, OR  
Line: Y2: ONC18D  
Flow: 12MID7019030  
Location: ON Semiconductor, Pocatello, ID  
Line: Fab 10: ABB,CAB,CYB,CYC,CWB,CWC,C6H,C6I,C6O,C5A,C5B,C3H,C3I,C8I,C8H,C8W  
Flow: 12MID7019030

**Assembly Operation(s)**

Location: Pantronix, Fremont, CA  
Line: QML Ceramic Packages and hot solder dip  
Flow: 12MID7020040  
Location: Amkor Technology, Buchon, South Korea  
Line: QML Plastic Packages  
Flow: 12MID7020037  
Location: Amkor Technology, Metro Manila, Philippines  
Line: QML Ceramic Packages  
Flow: 12MID7020040  
Location: Criteria Labs, Austin TX  
Line: Hot Solder Dip  
Flow: 12MID7050013  
Location: Amkor Technology, Metro Manila, Philippines  
Line: QML Plastic LQFP Packages  
Flow: 12MID7020062  
Location: Amkor Technology, Metro Manila, Philippines  
Line: QML Plastic Packages  
Flow: 12MID7020037

**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  
 Website: <http://www.onsemi.com/>  
 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

**Assembly Operation(s)**

Location: Amkor Technology, Seoul, South Korea

Line: QML Plastic Packages

Flow: 12MID7020037

Location: Amkor Technology, Gwangju, South Korea

Line: QML Plastic Packages

Flow: 12MID7020037

Location: Kyocera, San Diego, CA

Line: QML Ceramic DBGA Packages

Flow: 12MID7020040

**Electrical Test Operation(s)**

Location: ON Semiconductor, Carmona Philippines

Line: QML Technology Flow 12MID7050013 & 12MID7050026

Flow: 12MID7050024

Location: ON Semiconductor, Pocatello, ID

Line: QML Technology Flow 12MID7050013 & 12MID7050026

Flow: 12MID7450000

**Environmental Test Operation(s)**

Location: ON Semiconductor, Carmona Philippines

Line: QML Technology Flow 12MID7050013 & 12MID7050026

Flow: 12MID7020044

Location: Hi-Reliability Microelectronics, Milpitas, CA

Line: QML Technology Flow 12MID7050013 & 12MID7050026

Flow: 12MID7020044

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CLCC	84		solder/gold	50 mil
CPGA	69-181		gold	100 mil
CQFP	100-352		gold	25 mil
DBGA	228-277		solder ball	50 mil
JLDCC	84		solder plate	50 mil
LFPBGA	84		solder plate	25 mil
LQFP	144-208		solder plate	20 mil
PBGA	564 balls		solder ball	50 mil
PQFP	44-240		solder plate	20 mil
SBGA	560 balls		solder ball	50 mil
Side-Braze	28-48		gold	100 mil

**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

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**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: 3DTT2  
Company Contact: Jagar Sandhu, (408) 734 8240  
Qualifying Activity Contact: Philip Patterson, (614) 692-2178  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

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#### Technology Types:

0.5, 0.6, 0.8, 1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS, 0.25um 1P3M 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: Pocatello ID  
Line: CWB, C8H  
Flow: ON Semiconductor (formerly AMIS) QML Flow  
Location: Hsin-Chu  
Line: TSMC Mask  
Flow: TSMC ISO 9000 Flow

#### Wafer Fabrication Operation(s)

Location: Hsin-Chu  
Line: TSMC Fab 2A  
Flow: TSMC ISO-9000 Flow  
Location: Pocatello ID  
Line: CWB, C8H  
Flow: ON Semiconductor (formerly AMIS) QML Flow

#### Assembly Operation(s)

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  
Location: Milpitas CA  
Line: Corwil  
Flow: Ceramic with glass seal flow, Cerpack

#### Electrical Test Operation(s)

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

#### Environmental Test Operation(s)

Location: Milpitas CA  
Line: Golden Altos  
Flow: Temp Cycle, Group D  
Location: Sunnyvale CA  
Line: Pyramid, Hermaticity Tests, Constant Acceleration, PIND, Temp Cycle  
Flow: Pyramid Lot Traveler  
Location: Milpitas CA  
Line: Hi-Rel Microelectronics  
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) 692-2178

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q

**Technology Types:**

0.5, 0.6, 0.8, 1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS, 0.25um 1P3M 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: Steve Hirschfeld, (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: Fairchild Semiconductor, S. Portland ME  
 Line: Schottky, CMOS and BiCMOS  
 Flow: Q  
 Location: Xfab, Lubbock TX  
 Line: CMOS, BiCMOS  
 Flow: Q  
 Location: OEM Suppliers with EOL Agreements  
 Line: OEM Purchased Die  
 Flow: QIP 32

**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

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**Technology Types:**

**Product Types:**

**Assembly Operation(s)**

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

**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

**SRI International**

**Quality System Information**

SRI International  
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: Photronics Brookfield, CT

**Wafer Fabrication Operation(s)**

Location: Princeton, NJ

Line: SRI International 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: Sunnyvale CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: Digital / Memory

Location: Round Rock, TX

Line: Anloy Technologies

Flow: Digital / Memory

Location: Princeton, NJ

Line: SRI International

Flow: Digital / Memory

Location: Austin TX

Line: Austin Semiconductor, Inc.

Flow: Digital / Memory

Location: Milpitas CA

Line: Hi-Rel Microelectronics

Flow: Digital / Memory

**Environmental Test Operation(s)**

Location: Milpitas, Ca

Line: Golden Altos

Flow: MIL-STD-883

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

**SRI International**

**Quality System Information**

SRI International  
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  
Flow: MIL-STD-883  
Location: Milpitas CA  
Line: Hi-Rel Microelectronics  
Flow: MIL-STD-883  
Location: Fremont CA  
Line: Pantronix Corp, QML  
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: Carrollton TX  
 Line: RHF voltage regulators + RHF operational amplifiers  
 Flow: confidential, contact manufacturer

Location: Agrate Italy  
 Line: RHF ACMOS  
 Flow: confidential, contact manufacturer

Location: Crolles France  
 Line: RHF AD converters  
 Flow: confidential, contact manufacturer

Location: Crolles France  
 Line: RHF VCX Family  
 Flow: confidential, contact manufacturer

Location: Carrollton TX  
 Line: RHF ACMOS  
 Flow: confidential, contact manufacturer

**Assembly Operation(s)**

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

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

**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) 487-3305  
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: Sherman, TX  
Line: MPD ASIC / FIFO / JTAG / Mixed Signal  
Flow: Military Products Design Rules  
Location: Sherman, TX  
Line: SLL Logic/Mixed Signal/ Linear  
Flow: HVAL Design Rules  
Location: Dallas, TX  
Line: DSP Design  
Flow: DSP Design Rules  
Location: Dallas, TX  
Line: Logic Design  
Flow: Logic Design Rules  
Location: Houston TX  
Line: DSP Design  
Flow: DSP Design Rules  
Location: Hiji, Japan  
Line: Logic  
Flow: Logic Design Rules  
Location: Dallas, TX  
Line: Linear Design  
Flow: Linear Design Rules  
Location: Bangalore India  
Line: DSP/MCU/ASIC  
Flow: HPA/DSP/MCU  
Location: Freising, Germany  
Line: Logic / Mixed Signal / Linear  
Flow: HVAL 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: Sherman, TX  
Line: Logic, Analog/Mixed Signal, Programmable Logic (Classes Q and V)  
Flow: SFAB  
Location: Houston TX  
Line: Logic, Interface, ASIC, DSP (Class Q)  
Flow: HFAB

**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) 487-3305  
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: Freising, Germany  
Line: Logic, Interface, Analog/Mixed Signal (Class Q and V)  
Flow: FFAB  
Location: Miho, Japan  
Line: DSP (Class Q)  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: Logic, Interface, Analog/Mixed Signal, ASIC, DSP (Classes Q and V)  
Flow: DFAB  
Location: Merrimack, NH  
Line: MFAB (Classes Q and V) Die/Wafer Bank only  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: DSP (Class Q and V)  
Flow: DMOSV  
Location: Anam Korea  
Line: DSP  
Flow: ANAM1  
Location: Tucson AZ  
Line: Analog/Mixed Signal (Die/Wafer Bank Only)  
Flow: Contact Texas Instruments  
Location: Hiji, Japan  
Line: Contact Texas Instruments (Class Q)  
Flow: Contact Texas Instruments  
**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  
Location: Singapore  
Line: Plastic (High Pin Count)  
Flow: Contact Texas Instruments  
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

**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) 487-3305  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q,N, V

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**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: Bangkok, Thailand (MMT)  
Line: Special Products Assembly (Hermetic) (Classes Q and V)

Flow: Contact Texas Instruments

Location: Tokyo,

Line: TAB Assembly

Flow: Contact Texas Instruments

**Electrical Test Operation(s)**

Location: Taipei, Taiwan (TITL)

Line: Special Products Test (Classes Q and N)

Flow: Contact Texas Instruments

Location: Baguio City, Philippines (TIPI)

Line: Contact Texas Instruments (Classes Q and V)

Flow: Contact Texas Instruments

Location: Sherman, TX

Line: Special Products Test (Class Q)

Flow: Sherman Test Floor

Location: Houston TX

Line: Special Products Test (Class Q)

Flow: Houston Test Floor

Location: Dallas TX (CLAB)

Line: Special Product (Class Q)

Flow: Contact Texas Instruments

Location: Bangkok, Thailand (MMT)

Line: Test (Classes Q and V)

Flow: Contact Texas Instruments

Location: Kuala Lumpur, Malaysia

Line: Test (Class Q)

Flow: Contact Texas Instruments

**Environmental Test Operation(s)**

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

Location: Houston TX

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) 487-3305  
 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

---

#### **Technology Types:**

BiPolar, CMOS, BiCMOS

#### **Product Types:**

Analog, linear, interface, LVDS

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

Location: TISVA, Furstenfeldbruck, Germany

Line: TISVA Design Rules

Flow: Q and V

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

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

Location: Dupont, Santa Clara, CA

Line: TISVA Specific

Flow: Q and V

Location: Photonics, Danbury, CT

Line: TISVA Specific

Flow: Q and V

Location: Dupont, Rouseff, France

Line: TISVA Specific

Flow: Q and V

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

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

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

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

Line: 8" (BiPolar and CMOS)

Flow: Q only

Location: Scientific Coating Lab, Santa Clara, CA

Line: Wafer Backside Gold

Flow: Selected analog parts (Q and V)

Location: TISVA, Greenock, Scotland

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

Flow: 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

---

#### Technology Types:

BiPolar, CMOS, BiCMOS

#### Product Types:

Analog, linear, interface, LVDS

#### Wafer Fabrication Operation(s)

Location: TISVA, South Portland ME

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

Flow: Q and V

#### Assembly Operation(s)

Location: Golden Altos, Milpitas CA

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

Flow: V

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

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

Flow: Q and V

Location: TISVA Melaka Malaysia

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

Location: Team Pacific, FTI Complex, Taguig, Philippines

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

Flow: Q only

Location: Golden Altos, Milpitas CA

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

Flow: Q and V

Location: Millennium Microtech, Bangkok Thailand

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

Flow: Q and V

#### 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: TISVA Melaka Malaysia

Line: Group B, D

Flow: Q and V

Location: TISVA, South Portland ME

Line: Ionizing Radiation (Total Dose)

Flow: Q and V

Location: contact manufacturer

Line: Burn-In, Life Test

Flow: Q and V

Location: White Sands Missile Range New Mexico

Line: Ionizing Radiation (Low 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: Aeroflex RAD, Colorado Springs, CO

Line: Ionizing Radiation (Low Dose)

Flow: Q and V

Location: Golden Altos, Milpitas CA

Line: Group B, D

Flow: Q and V

Location: TISVA, Santa Clara, CA

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

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	

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

**Assembly Operation(s)**

Location: Amkor Korea  
Line: Plastic  
Flow: MFC0067, MFC0068  
Location: Six Sigma, Milpitas CA  
Line: Column attach (CG717 5962-02530 ONLY)  
Flow: Per Six Sigma  
Location: SPIL Taiwan  
Line: Bump  
Flow: MFC0082  
Location: Amkor Philippines  
Line: Plastic, Ceramic  
Flow: MFC0067, MFC0068, MFC0007, MFC0008

**Electrical Test Operation(s)**

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

**Environmental Test Operation(s)**

Location: Silicon Turnkey Solutions (STS), Milpitas CA  
Line: Burn-in / QCI  
Flow: BIC0009, ADQ0007

**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

**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: Milpitas, CA

Line: Golden Altos

Flow: Military Hermetic QML Q Certified/Qualified

Location: San Diego CA

Line: Maxwell Technology

Flow: Military Hermetic QM Q/V 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

### **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:

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

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

### **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:

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

All American Semiconductor, 16115 Northwest 52nd Avenue, Miami, FL 33014

### **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:

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

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

Nu Horizons, 70 Maxess Road, Melville, NY 11747

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

### **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

## **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 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:

Avnet, 2211 S. 47th Street, Phoenix, AZ 85034  
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  
Falcon Electronics, 47 Mall Dr (# 5), Commack, NY 11725  
Arrow Electronics, 50 Marcus Drive, Melville, NY 11747-4210  
Allied Electronics, 7410 Pebble Dr., Fort Worth, TX 76118  
Future Electronics, 237 Hymus Boulevard, Qubeck, Point Claire, Quebec H9R 5C7 Canada

### **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>