

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

**Date: 8/27/2020**

**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



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: Newbury, United Kingdom  
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: Vancouver, WA  
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: San Diego, CA  
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: Nashua (DSP Tools), NH  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver 1.0  
Location: Valencia, Spain  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver 1.0  
Location: Cambridge, Great Britain  
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: Raleigh, NC  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver 1.0  
Location: Toronto, Canada  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver 1.0  
Location: Longmont, CO  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver 1.0  
Location: Wilmington, MA  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver. 1.0

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: San Jose, CA  
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  
Location: Santa Clara, CA  
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: Beaverton, OR  
Line: Linear, Mixed Signal, & Digital (Q and V)  
Flow: Design Manual Ver. 1.0

**Wafer Fabrication Operation(s)**

Location: OKI Tokoyo, Japan  
Line: Bipolar (Q)  
Flow: ADI-0088  
Location: TSMC; Hsin-chu, Taiwan  
Line: CMOS, Bi-MOS (Q)  
Flow: ADI-0088  
Location: Chartered Semiconductor, Singapore  
Line: Fabs 1,2 and 3, CMOS (Q)  
Flow: ADI-0088  
Location: Wilmington, MA  
Line: Bipolar, BiFET, BiCMOS (Q and V)  
Flow: ADI-0088  
Location: Santa Clara, CA  
Line: Bipolar, BiFET, BiCMOS (Q and V)  
Flow: ADI-0088  
Location: Limerick, Ireland  
Line: CMOS, BiMOS (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, Gen. Trias, Cavite, Philippines

Line: Ceramic, metal can

Flow: F-0133M,F0153M &amp; F0154M

Location: ADI, Greensboro, NC

Line: Ceramic Packages

Flow: ADI-0300

**Electrical Test Operation(s)**

Location: Wilmington, MA

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: ADI, Gen. Trias, Cavite, Philippines

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: Greensboro, NC

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

Location: ADI, Manila, Philippines

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

**Environmental Test Operation(s)**

Location: Limerick, Ireland

Line: Environmental Test

Flow: LK-00399

Location: Wilmington, MA

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

Flow: Per PROMIS system corresponding to part number

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

**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: Valerie Lepaludier, 33240181633  
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: Nantes, France  
Line: Atmel Design Center  
Flow: contact manufacturer  
Location: Milan, Italy  
Line: Atmel Design Center  
Flow: contact manufacturer  
Location: Bracknell, UK  
Line: Atmel Design Center  
Flow: contact manufacturer  
Location: Garching, Germany  
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: MHS Nantes, FR --- (Formerly Atmel-Nantes) France  
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  
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

**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: Valerie Lepaludier, 33240181633

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, (571) 364-7657  
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 RHC MOS (RHC 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

**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: Burlington, VT  
Line: IBM Microelectronics  
Flow: R25 (IBM 0.25um CMOS6SF)  
Location: Manassas, VA  
Line: Semiconductor Technology Center  
Flow: QM Plan Baseline Process Flows RH25  
Location: East Fishkill, NY  
Line: IBM Microelectronics  
Flow: RH45 (IBM 45nm SOI12S0)  
Location: Manassas, VA  
Line: Semiconductor Technology Center  
Flow: QM Plan Baseline Process Flows 0.8um - RHC MOS3E, RHC MOS4E, RHC MOS4S  
Location: Manassas, VA  
Line: Semiconductor Technology Center  
Flow: QM Plan Baseline Process Flows 0.8um with ONO anti-fuse- RHC MOS4EF  
Location: Manassas, VA  
Line: Semiconductor Technology Center  
Flow: QM Plan Baseline Process Flows 0.5um - RHC MOS5M, RHC MOS5ML

**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 DLA-suitable Labs (e2v, Pernicka, Silicon Cert, Oneida, Silicon Turnkey Solutions, Integra Technologies)  
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, (571) 364-7657

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

**Cobham Semiconductor Solutions**

**Quality System Information**

Cobham Semiconductor Solutions  
4350 Centennial Boulevard  
Colorado Springs, CO 80907-3486  
Website: <https://www.cobhamaes.com/pagesfamily/fams-hirel.cfm>  
CAGE Code: 65342  
Company Contact: Jackie Mortensen, (719) 594-8330  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q,V,Y

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

### Cobham Semiconductor Solutions

#### Quality System Information

Cobham Semiconductor Solutions  
4350 Centennial Boulevard  
Colorado Springs, CO 80907-3486  
Website: <https://www.cobhamaes.com/pagesfamily/fams-hirel.cfm>  
CAGE Code: 65342  
Company Contact: Jackie Mortensen, (719) 594-8330  
Qualifying Activity Contact: Scott Thomas, (614) 692-0587  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q,V,Y

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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

#### Package Information 2/

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

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

**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 (A/T)

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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: David Hoffman, 408-943-2108  
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: Bloomington, MN

Line: 72Meg QDR Rad Hard R9 90nm

Flow: 001-00536

001-00536

Location: Bloomington, MN

Line: 4Meg QDR Rad Hard C9 90nm

Flow: 001-00536

Location: Tainan Taiwan

Line: UMC FAB12A, 16Meg Fast Async Rad Hard LL65UP-25ODR 65nm

Flow: A918/A918P

Location: Tainan Taiwan

Line: UMC FAB 12A, 144Meg QDRIV Rad Hard LL65FH-12 65nm

Flow: A866/A866P

Location: Tainan Taiwan

Line: UMC Fab 12A, 144Meg QDRII+ Rad Hard LL65P-18R 65nm

Flow: A439/A439P

A866/A866P

A918/A918P, A866/A866P, A918/A918P

**Assembly Operation(s)**

Location: Amkor Anam, Manila, Philippines

Line: CLCC, CERDIP

Flow: 49-1xxxx per package type

Location: Simi Valley Ca

Line: DPACI

Flow: FP 4 Meg QDR Rad Hard C9 90mm

Location: Simi Valley Ca

Line: DPACI

Flow: LGA/CGA 72Meg QDR

LGA/CGA 72 Meg QDR Rad Hard R9 90mm

**Electrical Test Operation(s)**

**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: David Hoffman, 408-943-2108  
 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

**Electrical Test Operation(s)**

Location: CML, Cavite City, Philippines

Line: PROM, PLD, clocks

Flow: 16-0001 program change procedure

Location: Hsinchu Taiwan

Line: KEYEC Wafer Sort,

Flow: SORT Test 144M QDRIV SRAM, 16M Async SRAM

Location: Integra, Wichita, KS

Line: nvSRAM

Flow: 16-0001 program change procedure

Location: Hsinchu Taiwan

Line: ChipMos Wafer Sort

Flow: SORT Test 144M QDRII+ SRAM

**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: SemPac, Philippines

Line: Burn-in & Life Test

Flow: 29-nnnnn per device type

Location: Albuquerque NM

Line: JD instruments Radiation Testing

**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**

*Data Device Corporation (DDC), formerly Maxwell*

**Quality System Information**

Data Device Corporation (DDC), formerly Maxwell  
13000 Gregg St., STE C  
Poway, CA 92064  
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: Poway, CA  
Line: DDC  
Flow: Characterization of Hitachi Die; RAD PAK Technology

**Wafer Fabrication Operation(s)**

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

**Assembly Operation(s)**

Location: Poway, CA  
Line: DDC  
Flow: Side Brazed Flat pack Only, up thru seal then transfers to DDC Bohemia, NY  
Location: Bohemia, NY  
Line: DDC  
Flow: Post-seal screen, electricals, marking, QCI, shipping

**Electrical Test Operation(s)**

Location: Bohemia, NY  
Line: DDC  
Flow: Per device specification  
Location: Poway, CA  
Line: DDC  
Flow: Per device specification

**Environmental Test Operation(s)**

Location: Bohemia, NY  
Line: DDC  
Flow: Screening per QM Plan rev AC  
Location: Poway, CA  
Line: DDC  
Flow: Screening per QM Plan rev AC

**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

### 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&QV(A/T)

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#### Technology Types:

90 nm CMOS & Assembly/Test

#### Product Types:

Asynchronous SRAM, Class Q&V assembly/test

#### Design Center(s)

Location: Original Manufacturer

Line: Various

Flow: Various

Location: San Jose, CA

Line: Cypress

Flow: Cypress Design Rules

#### Mask Development Center(s)

Location: Original Manufacturer

Line: Various

Flow: Various

#### Wafer Fabrication Operation(s)

Location: Original IC Manufacturer

Line: Various

Flow: Various

Location: Bloomington, MN

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

Location: Bloomington, MN

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

#### Assembly Operation(s)

Location: 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&amp;QV(A/T)

**Technology Types:**

90 nm CMOS &amp; Assembly/Test

**Product Types:**

Asynchronous SRAM, Class Q&amp;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

Eastern State Components

Quality System Information

Eastern State Components  
108 Prats Junction Rd  
Sterling, Ma 015642  
CAGE Code: 0R708  
Company Contact: Stephen Keledjian, (978)206 6571  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
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: Sterling Ma  
Line: Siliconix QML wafer and die stock  
Flow: SG2M rev 01

Assembly Operation(s)

Location: Sterling Ma  
Line: Sidebrazed (MMT)  
Flow: MMT AH 034  
Location: Sterling Ma  
Line: Sidebrazed Assembly (VPT)  
Flow: QAP 305 (H) 3 and 5  
Location: Sterling Ma  
Line: TO Can assembly (VPT)  
Flow: QAP 305(H) 4 and 5  
Location: Sterling Ma  
Line: TO Can (MMT)  
Flow: MMT AH 039

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Sidebrazed	8-40		Solder/gold	40-50 mil
TO Can	2-10		Solder	40-50 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: Clemence Palero, (408) 956-1010  
 Qualifying Activity Contact: Paul Granchi, (614) 692-9975  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: QV (A/T)

**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

**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: Wayne Orf, (763) 954-2172  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q, V, Y

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**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: Chandler, AZ  
Line: MRAM  
Flow: 22031906-SD, 58035282-SD  
Location: NXP (Chandler, AZ and Austin, TX)  
Line: Wafer Bumps  
Flow: 22027391  
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)

**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: Six Sigma, Milpitas, CA  
Line: Column Attach (Q & V)  
Flow: PR-2010  
Location: Micross Components, Orlando, FL  
Line: Military Hermetic QML Q/V Certified  
Flow: S HW SCA  
Location: Kyocera, San Diego, CA  
Line: Non-hermetic Flip Chip  
Flow: 22028780

**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: Six Sigma, Milpitas, CA  
Line: Test Services  
Flow: TS-2001  
Location: Micross Components, Orlando, FL  
Line: 883 Testing  
Flow: GMS 10006

**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: Wayne Orf, (763) 954-2172  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 1 Meg  
Class: Q, V, Y

---

**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

**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

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
CGA	783 Max		solder	40-50 mil
DBGALGA	783 Max		solder balls/Au	40-50 mil
DIP	24-28		gold	100 mil
Flatpack	28-352		gold	20-50 mil
Flip Chip	1761 Max		gold	
Pin Grid Array	128 Max		gold	100 mil

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Integra Technologies Silicon Valley (formerly CORWIL)****Quality System Information**

Integra Technologies Silicon Valley (formerly CORWIL)

1635 McCarthy Boulevard

Milpitas, CA 95035

Website: <http://www.integra-tech.com>

CAGE Code: 061F4

Company Contact: Nawal Cotran, (408) 321-6556

Qualifying Activity Contact: Shing Yu, (614) 692-0588

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: QV (A/T)

**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	

**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: IDT, Hillsboro, OR

Line: Fab 4

Flow: CMOS 7, CMOS 8, CMOS 9

Location: TSMC Fab 3, Hsinchu, Taiwan

Line: Fab 3

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

**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: KESP, Penang, Malaysia

Line: Burn-In Monitor

Flow: TSS-5512-C, TSC-6121

Location: IDT, Penang,

Line: N/A

Flow: QCA-0600

Location: MMT, Tambon Saladang Bangnumpruiw, Thailand

Line: QCI Monitor

Flow: Form TSP-4019



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

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

**Quality System Information**

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

---

**Technology Types:**

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

**Product Types:**

SRAM, Logic

**Package Information 2/**

<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

**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,V,Y(A/T)

---

**Technology Types:**

Assembly/Test

**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  
 5245 South 39th St.  
 Phoenix, AZ 85040-9008  
 Website: <http://www.lansdale.com/>  
 CAGE Code: 58625  
 Company Contact: Dale Lillard, (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: Milpitas, CA

Line: Integra Technologies Silicon Valley

Flow: Integra Certified QML Flow

**Electrical Test Operation(s)**

Location: Sunnyvale, CA

Line: EAST

Flow: Standard EAST Electrical Test procedures

**Environmental Test Operation(s)**

Location: Sunnyvale, CA

Line: EAST

Flow: Standard EAST 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  
720 Sycamore Drive  
Milpitas, CA 95035-7406  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Regina Soares, (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, Colorado Springs, CO

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Auburn, NH

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, 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 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

Location: Linear Technology, Cary, NC

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, Milpitas, CA

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, Tempe, AZ

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, Plano, TX

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  
720 Sycamore Drive  
Milpitas, CA 95035-7406  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Regina Soares, (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, Camas, WA

Line: Fab 3 Bipolar, CMOS, BiCMOS

Flow: Q,V,B,S,M

Location: Linear Technology, Milpitas, CA

Line: Fab 4 Hillview 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: Team Pacific, FTI Complex, Taguig, Philippines

Line: TO Can, with screening

Flow: Q, B, M

Location: Amkor/Anam, Muntinlupa, Philippines

Line: Ceramic, with screening

Flow: Q, B, M

Location: Linear Technology, Milpitas, CA

Line: Ceramic and Metal Can, with Screening

Flow: Q,V,B,S,M

**Electrical Test Operation(s)**

Location: Linear Technology, Penang, Malaysia

Line: Wafer Sort

Flow: Q,V,B,S,M

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

**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

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

**Linear Technology**

**Quality System Information**

Linear Technology  
720 Sycamore Drive  
Milpitas, CA 95035-7406  
Website: <http://www.linear.com/>  
CAGE Code: 64155, Symbol Code: CENU  
Company Contact: Regina Soares, (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

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**Technology Types:**

Bipolar, CMOS, BiCMOS

**Product Types:**

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

**Package Information 2/**

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

**Mercury Corp.- Memory and Storage Solutions**

**Quality System Information**

Mercury Corp.- Memory and Storage Solutions  
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: Amertron, Pampanga, Philippines

Line: Ceramic, with screening

Flow: Q Only

Location: Tempe, AZ

Line: Premier Semiconductor Services

Flow: Solder lead finish

**Electrical Test Operation(s)**

Location: 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	

**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: NQV (A/T)

**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Chachoengsao, Thailand

Line: Hermetic and Plastic

Flow: Standard Military

**Environmental Test Operation(s)**

Location: Chachoengsao, Thailand

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: Philippines, (PSI)

Line: Linear

Flow: SGM5901, SGM5902

Location: Team Pacific, FTI Complex, Taguig, Philippines

Line: Linear

Flow: SGM5901, SGM5902

Location: Garden Grove, CA

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

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

### **Microsemi SoC Corp., a Microchip company**

#### **Quality System Information**

Microsemi SoC Corp., a Microchip company  
3870 North First Street  
San Jose, CA 95134  
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) 643-6213  
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: Regensburg, Germany  
Line: Infineon Technologies  
Flow: 0.25um Flash/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: Winbond Electronics  
Flow: .045um, 0.6um, 0.8um CMOS FPGA  
Location: Singapore,  
Line: Chartered Semiconductor (CSM)  
Flow: 0.35 um, .45um, .6um CMOS FPGA  
Location: Manassas, VA  
Line: BAE Systems  
Flow: 0.8 Micron CMOS Rad Hard FPGA  
Location: Hsinchu City, Taiwan  
Line: United Microelectronics corp (UMC)  
Flow: .15um, 0.25um CMOS and .22u Flash/CMOS FPGA

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

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

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Microsemi SoC Corp., a Microchip company****Quality System Information**

Microsemi SoC Corp., a Microchip company  
 3870 North First Street  
 San Jose, CA 95134  
 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) 643-6213  
 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: San Jose, CA

Line: Six Sigma

Flow: Solder Dip

**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: Sunnyvale, CA

Line: AMER

Flow: Failure analysis, SEM analysis

Location: Santa Clara, CA

Line: Riga Analytical Lab inc.

Flow: Failure analysis

Location: Spokane, WA

Line: Hi Rel

Flow: Failure analysis, SEM analysis

Location: Santa Clara, CA

Line: QP Semi

Flow: Group B &amp; D

Location: Milpitas, CA

Line: RQE

Flow: Burn-In, Life Test

Location: Sunnyvale, CA

Line: Accurel

Flow: Failure analysis, SEM analysis

Location: San Jose, CA

Line: Six Sigma

Flow: Solderability

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Flatpack	256		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&QV(A/T)

**Technology Types:**

OEM & Assembly/Test

**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**

**Micros Components AIT**

**Quality System Information**

Micros Components AIT  
3021 East Cornwallis Rd  
Research Triangle Park, NC 27709  
Website: <http://www.micros.com>  
CAGE Code: 7QZQ8  
Company Contact: Rex Anderson, (919) 433-6925  
Qualifying Activity Contact: Paul Granchi, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Class: Q, V, Y

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**Technology Types:**

**Product Types:**

Column Attach Process

**Assembly Operation(s)**

Location: Research Triangle Park, NC

Line: Column Attach

Flow: CCGA-01

**Environmental Test Operation(s)**

Location: Milpitas, CA

Line: Silicon Turnkey Solutions, Various MIL-STD-883 Testing

Flow: SEE STS DLA Commercial Lab Suitability Letter

Location: Hatfield, PA

Line: Micros Components, Solderability

Flow: 883 TM2003

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
CGA	2-2500		solder	1mm, 1.27mm

## 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: Paul Syndergaard, 208-234-6844  
Qualifying Activity Contact: Shing Yu, (614) 692-0588  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q and N

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#### Technology Types:

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

#### Product Types:

ASICs, gate arrays, standard cells

#### Design Center(s)

Location: ON Semiconductor, Pocatello, ID

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, Lower Gwynedd, PA

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, American Fork, UT

Line: QML Design

Flow: 12MQE00004A

Location: ON Semiconductor, Dallas, TX

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: Amkor Technology, Metro Manila, Philippines

Line: QML Plastic Packages

Flow: 12MID7020037

Location: Kyocera, San Diego, CA

Line: QML Ceramic DBGA Packages

Flow: 12MID7020040

Location: Amkor Technology, Metro Manila, Philippines

Line: QML Plastic LQFP Packages

Flow: 12MID7020062

Location: Integra Technologies Silicon Valley, Milpitas CA

Line: QML Ceramic Packages

Flow: 12MID7020040

Location: Criteria Labs, Austin, TX

Line: Hot Solder Dip

Flow: 12MID7050013

#### Electrical Test Operation(s)

**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: Paul Syndergaard, 208-234-6844  
 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

**Electrical Test Operation(s)**

Location: ON Semiconductor Carmona Philippines (OSPI)  
 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: Hi-Reliability Microelectronics, Milpitas, CA  
 Line: QML Technology Flow 12MID7050013 & 12MID7050026  
 Flow: 12MID7020044  
 Location: ON Semiconductor Carmona Philippines (OSPI)  
 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

### Pyramid Semiconductor

#### Quality System Information

Pyramid Semiconductor  
1249 Reamwood Ave  
Sunnyvale, CA 94089  
Website: <http://www.pyramidsemiconductor.com/>  
CAGE Code: 3DTT2  
Company Contact: Joe Rothstein, (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: Contact 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: Pocatello, ID  
Line: CWB, C8H  
Flow: ON Semiconductor (formerly AMIS) QML Flow  
Location: Hsin-Chu,  
Line: TSMC Fab 2A  
Flow: TSMC ISO-9000 Flow

#### Assembly Operation(s)

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

#### Electrical Test Operation(s)

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

#### Environmental Test Operation(s)

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



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

**Pyramid Semiconductor**

**Quality System Information**

Pyramid Semiconductor  
1249 Reamwood Ave  
Sunnyvale, CA 94089  
Website: <http://www.pyramidsemiconductor.com/>  
CAGE Code: 3DTT2  
Company Contact: Joe Rothstein, (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

**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

**Renesas Electronics America**

**Quality System Information**

Renesas Electronics America  
1650 Robert J. Colan Blvd. NE  
Palm Bay, FL 32905-3398  
Website: <https://www.renesas.com/>  
CAGE Code: 34371, Symbol Code: CDWO  
Company Contact: David McCarthy, (321) 724-7055  
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: 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

Location: Yamaha, Hamamatsu, Japan

Line: Yamaha C5.6

Flow: Non-rad hard, Class M only

**Assembly Operation(s)**

Location: Millenium Microtech, Chachoengsao, Thailand

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

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

Location: Amkor, Philippines

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

Flow: Non-rad hard, Class M only

Location: Intersil, Palm Bay, FL

Line: Compliant Hermetic

Flow: 841XXX, 240XXX, 352XXX

**Electrical Test Operation(s)**

Location: Intersil, Milpitas, CA

Line: Test

Flow: Non-rad hard, Class M only

Location: Lingsen, Taichung, Taiwan

Line: Test

Flow: Non-rad hard, Class M only

Location: Criteria/Austin, Texas

Line: Wafer Probe

Flow: Class Q, T, V

Location: Intersil, Palm Bay, FL

Line: Compliant

Flow: Contact Manufacturer

Location: STATS ChipPAC, Kuala Lumpur, Malaysia

Line: Test

Flow: Contact Manufacturer

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

**Environmental Test Operation(s)**

Location: STATS ChipPAC, Kuala Lumpur, Malaysia

Line: Compliant Hermetic

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

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

Renesas Electronics America  
 1650 Robert J. Colan Blvd. NE  
 Palm Bay, FL 32905-3398  
 Website: <https://www.renesas.com/>  
 CAGE Code: 34371, Symbol Code: CDWO  
 Company Contact: David McCarthy, (321) 724-7055  
 Qualifying Activity Contact: Paul Granchi, (614) 692-9975  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 300 K  
 Class: Q,V,T,M

**Technology Types:**

Bipolar, CMOS, linear, CMOS SAJI

**Product Types:**

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

**Environmental Test Operation(s)**

Location: Millenium Microtech, Chachoengsao, Thailand

Line: Compliant Hermetic

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

Location: Intersil, Palm Bay, FL

Line: Compliant Hermetic

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

**Package Information 2/**

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

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

**Design Center(s)**

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

**Wafer Fabrication Operation(s)**

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

**Assembly Operation(s)**

Location: Rochester, Newburyport MA  
 Line: Hermetic Assembly and Environmental Screening  
 Flow: QIP104 Appendix B1,C2  
 Location: Golden Altos, Milpitas, CA  
 Line: Hermetic Assembly and Environmental Screening  
 Flow: Q and V  
 Location: Millennium Microtech, Bangkok, Thailand  
 Line: Hermetic Assembly and Environmental Screening  
 Flow: Q and V

**Environmental Test Operation(s)**

Location: Rochester, Newburyport MA  
 Line: Burn-in and Life Test, QCI Group D  
 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

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

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 metal can

Location: Lutterworth, England

Line: Hermetic CerDip

#### 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**

**Silicon Turnkey Solutions**

**Quality System Information**

Silicon Turnkey Solutions  
1804 McCarthy Blvd  
Milpitas, CA 95035  
Website: <http://www.sts-usa.com/>  
CAGE Code: 1VVP6  
Company Contact: Paui Kamper, (408) 904 4230  
Qualifying Activity Contact: Michael Grammens, (614) 692-0604  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q (A/T)

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**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Milpitas, CA  
Line: STS  
Flow: Hermetic Single Die/Planar MCM Class Q Flow Rev 01

**Electrical Test Operation(s)**

Location: Milpitas, CA  
Line: STS  
Flow: DLA Laboratory Suitability per VQC-15-028944

**Environmental Test Operation(s)**

Location: Milpitas, CA  
Line: STS  
Flow: DLA Laboratory Suitability per VQC-15-028944

**Package Information 2/**

<b>Type</b>	<b>Lead Range</b>	<b>Matrix Size</b>	<b>Lead Finish</b>	<b>Lead Pitch</b>
Flatpack	40-352		Gold	25-50 mil

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, V, Y

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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  
Website: <https://games.com/>  
CAGE Code: 0DKS7  
Company Contact: Eleanor Xavier, (609) 734-2627  
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

**Design Center(s)**

Location: Princeton, NJ

Line: N/A

Flow: GEM Design Rules

**Mask Development Center(s)**

Location: Princeton, NJ

Line: Design

Flow: Photonics Brookfield, CT

**Wafer Fabrication Operation(s)**

Location: Princeton, NJ

Line: SRI International

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

**Assembly Operation(s)**

Location: Orlando, FL

Line: Micross Components

Flow: Hermetic, Solder Seal

Location: Milpitas, CA

Line: Golden Altos

Flow: Hermetic, Solder Seal

**Electrical Test Operation(s)**

Location: Lago Vista, TX

Line: Anloy Technologies

Flow: Digital / Memory

Location: Milpitas, CA

Line: Hi-Rel Microelectronics (Micross)

Flow: Digital / Memory

Location: Santa Clara, CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: Digital / Memory

Location: Princeton, NJ

Line: SRI International

Flow: Digital / Memory

**Environmental Test Operation(s)**

Location: Santa Clara, CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: MIL-STD-883

Location: Princeton, NJ

Line: SRI International

Flow: MIL-STD-883

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  
Website: <https://games.com/>  
CAGE Code: 0DKS7  
Company Contact: Eleanor Xavier, (609) 734-2627  
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: Milpitas, CA  
Line: Hi-Rel Microelectronics (Micross)  
Flow: MIL-STD-883

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Can	10		solder/gold	as required
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, 33299264839  
Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 100 - 300K  
Class: Q and V

---

**Technology Types:**

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

**Product Types:**

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

**Design Center(s)**

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

**Wafer Fabrication Operation(s)**

Location: Crolles, France  
Line: RHF LVDS  
Flow: confidential, contact manufacturer  
Location: Agrate, Italy  
Line: RHR MOS driver  
Flow: confidential, contact manufacturer  
Location: Agrate, Italy  
Line: RHR current limiter  
Flow: confidential, contact manufacturer  
Location: Singapore,  
Line: RHF ACMOS  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHF amplifier, differential  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHR op amp  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHR DA converter  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RH LVDS  
Flow: confidential, contact manufacturer  
Location: Singapore,  
Line: RHF Op Amp  
Flow: confidential, contact manufacturer  
Location: Singapore,  
Line: RHF voltage regulator  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHF voltage reference  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHF op amp  
Flow: confidential, contact manufacturer  
Location: Crolles, France  
Line: RHF oscillator  
Flow: confidential, contact manufacturer

**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, 33299264839  
 Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 100 - 300K  
 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

**Wafer Fabrication Operation(s)**

Location: Crolles, France  
 Line: RHR comparator  
 Flow: confidential, contact manufacturer  
 Location: Carrollton, TX  
 Line: RHF ACMOS  
 Flow: confidential, contact manufacturer  
 Location: Crolles, France  
 Line: RHF VCX family  
 Flow: confidential, contact manufacturer  
 Location: Crolles, France  
 Line: RHF AD converter  
 Flow: confidential, contact manufacturer  
 Location: Crolles, France  
 Line: RHF AHCMOS  
 Flow: confidential, contact manufacturer  
 Location: Agrate, Italy  
 Line: RHR current limiter  
 Flow: confidential, contact manufacturer  
 Location: Carrollton, TX  
 Line: RHF voltage regulator + RHF operational amplifiers  
 Flow: confidential, contact manufacturer

**Assembly Operation(s)**

Location: Rennes, France  
 Line: Hermetic Assembly  
 Flow: 8384040 & 8384043 QML Q  
 Location: Rennes, France  
 Line: Hermetic Assembly  
 Flow: 8384040 & 8384043 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	

**Teledyne e2v**

**Quality System Information**

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

---

**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: MOS8

Flow: 1.0 um

Location: Scotland

Line: MOS1

Flow: 1.5 um

Location: Italy

Line: F8

Flow: CMOSE5-U35

Location: Sendai, Japan

Line: TCS

Flow: 1 um

Location: Austin, TX

Line: MOS11

Flow: 0.65 um

Location: Austin, TX

Line: MOS13

Flow: HiP1.3 (.5um)

Location: France

Line: HCMOS

Flow: 3.0 um

**Assembly Operation(s)**

Location: France

Line: F5

Flow: CDSG-QFPBTND

**Electrical Test Operation(s)**

Location: France

Line: J971-AEHR

Flow: 1AR3BIN

Location: France

Line: J971-AEHR

Flow: 2A00QT, 2A00QL

Location: France

Line: J971-B1300

Flow: 2A00Q

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

Teledyne e2v

Avenue de Rochepleine BP-123,

38521 Saint-Egreve Cedex, FR

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

CAGE Code: F8385

Company Contact: Rolande Blanc, 33476583189

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

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q, V, Y

**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: GR18-B160

Flow: 2A00Q

Location: France

Line: GR180-AEHR

Flow: TC23EFM, TC13FM, TC23FVB

Location: France

Line: GR180-B1300

Flow: 0AR3QT0A, 0ARAR3QT

Location: France

Line: Sentry20-AEHR

Flow: 2A00QT, 2A00Q

Location: France

Line: F3

Flow: ASSG-QFPBDMA

**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

**Teledyne e2v, Inc. (aerospace and defense)**

### Quality System Information

Teledyne e2v, Inc. (aerospace and defense)

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: San Jose, CA

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: Taiwan

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: Tempe, AZ

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: Hong Kong

Line: N/A

Flow: Per SCD-14 Device Design Requirements

Location: Seattle, WA

Line: N/A

Flow: Per SCD-14 Device Design Requirements

### Wafer Fabrication Operation(s)

Location: Lubbock, TX

Line: QP2 Xfab, CMOS

Flow: 0.8u, 3 metal

Location: Taiwan

Line: QP5 Macronix, CMOS Non-Volatile

Flow: 0.45u, 2 metal

Location: California

Line: QP7 BiCMOS, Bipolar logic, Bipolar analog

Flow: 1u, 2 metal

Location: California

Line: QP11 Micrel, OP AMPs/Switches bipolar

Flow: 1u, 2 metal

Location: UK

Line: QP12 Plessey, Bipolar logic

Flow: 1u, 3 metal

**Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information****Teledyne e2v, Inc. (aerospace and defense)****Quality System Information**

Teledyne e2v, Inc. (aerospace and defense)  
 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: Golden Altos, Milpitas, CA  
 Line: Military Hermetic  
 Flow: Per SCD-12 Assembly Build Requirements  
 Location: e2v a&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: 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

**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: Integra, Wichita, Kansas  
 Line: Electrical Test  
 Flow: Per SOP-01-0004, Burn-in and Test Program Development (DRO/BRO)  
 Location: e2v a&d (DBA QP Semiconductor) - Milpitas, CA  
 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&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

**Texas Instruments**

**Quality System Information**

Texas Instruments  
12500 TI Blvd  
Dallas, TX 75243  
Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
CAGE Code: 01295  
Company Contact: Dorothy Taylor, (214) 567-2769  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 100K  
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: Freising, Germany  
Line: Logic / Mixed Signal / Linear  
Flow: HVAL Design Rules  
Location: Dallas, TX  
Line: Logic Design  
Flow: Logic Design Rules  
Location: Dallas, TX  
Line: DSP Design  
Flow: DSP Design Rules  
Location: Sherman, TX  
Line: SLL Logic/Mixed Signal/ Linear  
Flow: HVAL Design Rules  
Location: Dallas, TX  
Line: Linear Design  
Flow: Linear Design Rules

**Mask Development Center(s)**

Location: Round Rock, TX  
Line: Toppan  
Flow: Contact Texas Instruments  
Location: Dresden, Germany  
Line: Toppan  
Flow: Contact Texas Instruments  
Location: Corbell, France  
Line: Toppan  
Flow: Contact Texas Instruments  
Location: Corbell, France  
Line: Toppan  
Flow: Contact Texas Instruments  
Location: Brookfield, CT  
Line: Photronics  
Flow: Contact Texas Instruments  
Location: Allen, TX  
Line: Photronics  
Flow: Contact Texas Instruments

**Wafer Fabrication Operation(s)**

Location: Dallas, TX  
Line: Logic, Interface, Analog/Mixed Signal, ASIC, DSP (Classes Q and V)  
Flow: DFAB



**Texas Instruments**

**Quality System Information**

Texas Instruments  
12500 TI Blvd  
Dallas, TX 75243  
Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
CAGE Code: 01295  
Company Contact: Dorothy Taylor, (214) 567-2769  
Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: 100K  
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: Merrimack, NH  
Line: MFAB (Classes Q and V) Die/Wafer Bank only  
Flow: Contact Texas Instruments  
Location: Dallas, TX  
Line: Logic, Analog/Mixed Signal (Class Q/V)  
Flow: DMOS6  
Location: Houston, TX  
Line: Logic (Q/V); Interface, CMOS/Bipolar ASIC, Memory (Class Q); Die Stock Only  
Flow: HFAB  
Location: Hiji, Japan  
Line: Die Wafer Bank Only (Class Q)  
Flow: Contact Texas Instruments  
Location: Freising, Germany  
Line: Logic, Interface, Analog/Mixed Signal (Class Q and V)  
Flow: FFAB  
Location: Sherman, TX  
Line: Logic, Analog/Mixed Signal, Programmable Logic (Classes Q and V)  
Flow: SFAB  
Location: Dallas, TX  
Line: DSP (Class Q and V)  
Flow: DMOS5  
Location: Anam, Korea  
Line: DSP (Q Level Only)  
Flow: ANAM1

**Assembly Operation(s)**

Location: Baguio City, Philippines (TIPI)  
Line: Contact Texas Instruments (Plastic)  
Flow: Contact Texas Instruments  
Location: Microchip Technology (MMT), Bangkok, Thailand  
Line: Special Products Assembly (Hermetic) (Classes Q and V)  
Flow: Contact Texas Instruments  
Location: Taipei, Taiwan (TITL)  
Line: Plastic  
Flow: Contact Texas Instruments

**Electrical Test Operation(s)**

Location: Sherman, TX  
Line: Special Products Test (Class Q)  
Flow: Sherman Test Floor  
Location: Taipei, Taiwan (TITL)  
Line: Special Products Test (Classes Q and N)  
Flow: Contact Texas Instruments

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

Texas Instruments  
 12500 TI Blvd  
 Dallas, TX 75243  
 Website: <http://focus.ti.com/hirel/howtobuy.shtml>  
 CAGE Code: 01295  
 Company Contact: Dorothy Taylor, (214) 567-2769  
 Qualifying Activity Contact: Andy Thacker, (614) 692-0589  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: 100K  
 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

**Electrical Test Operation(s)**

Location: Dallas, TX (CLAB)  
 Line: Special Product (Class Q)  
 Flow: Contact Texas Instruments  
 Location: Microchip Technology (MMT), Bangkok, Thailand  
 Line: Test (Classes Q and V)  
 Flow: Contact Texas Instruments  
 Location: Baguio City, Philippines (TIPI)  
 Line: Contact Texas Instruments (Classes Q and V)  
 Flow: Contact Texas Instruments

**Environmental Test Operation(s)**

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

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CBGA	144-567		Solder	
CDBGA	352-600		Solder	
CDIP	8-40		Solder	
CFCBGA (Flip Chip)	429		Solder	
CFP	8-408		Solder or Gold	
CLGA	10-400		Gold	
CQFP	36-64		Solder or Gold	
HTQFP	48		Palladium or Sn	
LCC (Metal/Ceramic Lid)	20-68		Solder	
MCGA	349-472		Solder	
PGA		68-325	Solder or Gold	
QFP (Plastic)	100-144		Palladium or Sn	
SOIC	8-14		Palladium or Sn	
Side Braze DIP	8-64		Solder or Gold	
TSSOP	32		Palladium or Sn	

## 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, 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, Furstenfeldbruck, Germany

Line: TISVA Design Rules

Flow: Q and V

Location: TISVA, Takada, Japan

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: Photonics, Danbury, CT

Line: TISVA Specific

Flow: Q and V

Location: Dupont, Rousett, France

Line: TISVA Specific

Flow: Q and V

Location: Dupont, Santa Clara, CA

Line: TISVA Specific

Flow: Q and V

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

Location: 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

Location: TISVA, South Portland, ME

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

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: Quality Backgrind and Backmetal Service, Santa Clara, CA

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

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

Location: TISVA Melaka, Malaysia

Line: Wafer Thinning

Flow: Selected analog parts (Q and V)

Location: Golden Altos, Milpitas CA

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

Flow: V

Location: Millennium Microtech, Bangkok, Thailand

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

Flow: Q and V

Location: Golden Altos, Milpitas CA

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

Flow: Q and V

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

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

Flow: Q and V

Location: Team Pacific, FTI Complex, Taguig, Philippines

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

Flow: Q only

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

Location: TISVA, Santa Clara, CA

Line: Electrical Test

Flow: Q and V

Location: TISVA Melaka, Malaysia

Line: Electrical Test

Flow: Q and V

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

Location: TISVA, South Portland, ME

Line: Ionizing Radiation (Total Dose)

Flow: Q and V

Location: Aeroflex RAD, Colorado Springs, CO

Line: Ionizing Radiation (Low Dose)

Flow: Q and V

Location: White Sands Missile Range, New Mexico

Line: Ionizing Radiation (Low Dose)

Flow: Q and V

Location: contact manufacturer

Line: Burn-In, Life Test

Flow: Q and V

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

Texas Instruments SVA (formerly National Semiconductor)

2900 Semiconductor Drive

Santa Clara, CA 95052-8090

Website: <http://www.ti.com/contacts/>

CAGE Code: 27014, Symbol Code: CCXP

Company Contact: Dennis Tanguay, (408) 721-3509

Qualifying Activity Contact: Shing Yu, (614) 692-0588

QML Status: Full QML Certification/Qualification

Radiation hardness level: 30-300 K

Class: Q and V

**Technology Types:**

BiPolar, CMOS, BiCMOS

**Product Types:**

Analog, linear, interface, LVDS

**Environmental Test Operation(s)**

Location: TISVA Melaka, Malaysia

Line: Group B, D

Flow: Q and V

Location: TISVA, Santa Clara, CA

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

Flow: Q and V

Location: Golden Altos, Milpitas CA

Line: Group B, D

Flow: Q and V

**Package Information 2/**

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

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

VPT Componensts  
 780 Boston Rd  
 Billerica Ma 01821  
 CAGE Code: 9N185  
 Company Contact: Khanh Tran, 978-771-8133  
 Qualifying Activity Contact: Michael Grammens, (614) 512 5424  
 QML Status: Full QML Certification/Qualification  
 Radiation hardness level: N/A  
 Class: Q (A/T)

**Technology Types:**

Assembly/Test

**Product Types:**

N/A

**Assembly Operation(s)**

Location: Billerica Ma  
 Line: QML Assembly/Test TO Can  
 Flow: QAP 305 (H) 4 & 5  
 Location: Billerica Ma  
 Line: QML Assembly/Test SideBraze  
 Flow: QAP 305 (H) 3 & 5

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Cerquad	20-32		Solder/gold	25- 50 mil
Flatpack	8-32		Solder/gold	25-50 mil
PGA		84, 100, 120	Solder/gold	
Side-Braze	8-40		Solder/gold	25-50 mil
TO Can	8-40		Solder	40-50 mil

**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

**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, Philippines  
 Line: Ceramic  
 Flow: MFC0007, MFC0008  
 Location: SPIL, Taiwan  
 Line: Bump  
 Flow: MFC0082

**Electrical Test Operation(s)**

Location: San Jose, CA  
 Line: Xilinx (backup)  
 Flow: QAP0094  
 Location: Silicon Turnkey Solutions (STS), Milpitas, CA  
 Line: Burn-in / QCI  
 Flow: BIC0009. ADQ0007

**Package Information 2/**

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CLCC	44		solder	50 mil
CQFP	100-228		gold plate	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
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, (858) 230-6961  
Qualifying Activity Contact: Jonathan Puhalsky, (614) 692-2458  
QML Status: Full QML Certification/Qualification  
Radiation hardness level: N/A  
Class: Q

**Technology Types:**

1.2um CMOS, 3.0 um CMOS

**Product Types:**

A/D Converter

**Design Center(s)**

Location: Contact Xtreme Semiconductor

Line: OEM

Flow: OEM

**Mask Development Center(s)**

Location: Pocatello, ID

Line: ON Semiconductor (formerly AMIS)

Flow: Contact XTREME Semiconductor

**Wafer Fabrication Operation(s)**

Location: Pocatello, ID

Line: AMI Semiconductor

Flow: QML Flow

**Assembly Operation(s)**

Location: San Diego, CA

Line: Maxwell Technology

Flow: Military Hermetic QM Q/V Certified/Qualified

Location: Milpitas, CA

Line: Golden Altos

Flow: Military Hermetic QML Q Certified/Qualified

**Electrical Test Operation(s)**

Location: San Diego, CA

Line: Maxwell Technology

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

Location: Leander, TX

Line: Anloy Technology

Flow: DLA Suitable Commercial Lab for 883 Electrical Test, Tested to SMD specifications

**Environmental Test Operation(s)**

Location: San Diego, CA

Line: Maxwell Technology

Flow: Military Hermetic QML Q Certified/Qualified

Location: Milpitas, CA

Line: Golden Altos

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

### **Linear Technology, 720 Sycamore Drive, Milpitas,, CA 95035-7406**

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

Universal Semiconductor, 2775 West Cypress Creek Drive, Fort Lauderdale, FL 33309

Richardson Electronics, 40W267 Keslinger Road, LaFox, IL 60147

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

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

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

### **Microsemi SoC Corp., a Microchip company, 3870 North First Street, San Jose,, CA 95134**

Distributors:

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

### **Renesas Electronics America, P O Box 37, Palm Bay,, FL 32905-3398**

Distributors:

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

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

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

Distributors:

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

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

Distributors:

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

Nu Horizons, 70 Maxess Road, Melville, NY 11747

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

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

### **Teledyne e2v, Inc. (aerospace and defense), 765 Sycamore Drive, Milpitas,, CA 95035**

Distributors:

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

### **Texas Instruments, 12500 TI Blvd, Dallas,, TX 75243**

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**

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### **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>