

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

Date: 11/18/2024

Specification Details:

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

Contact Information:

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

Notes:

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

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

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

1/ This note has been removed.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. TRACEABILITY

COMMERCIAL OFF THE SHELF - LIMITED
QML - YES

2. BURN-IN

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

3. PRODUCT CHANGE NOTIFICATION

COMMERCIAL OFF THE SHELF - LIMITED
QML - YES

4. AVAILABILITY

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

5. MILITARY TEMPERATURE TESTING

COMMERCIAL OFF THE SHELF - NO
QML - YES

6. AVAILABILITY OF QUALIFICATION AND RELIABILITY DATA

COMMERCIAL OFF THE SHELF - LIMITED
QML - YES

7. FAILURE ANALYSIS FOR FIELD FAILURES

COMMERCIAL OFF THE SHELF - LIMITED
QML - YES

8. EXTENSIVE BACKGROUND INFORMATION IN USING PRODUCT IN MILITARY ENVIRONMENTS

COMMERCIAL OFF THE SHELF - LIMITED
QML - YES

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

COMMERCIAL OFF THE SHELF - NO
QML - YES

For more detailed information the user may contact:

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

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

Part Configuration:

SMD PINs shall be as follows:

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

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

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

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: Harrison Betz, (360) 954-9219

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: Vancouver, WA

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: Raleigh, NC

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

Flow: Design Manual Ver 1.0

Location: Aalborg, Denmark

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

Flow: Design Manual Ver 1.0

Location: Beaverton, OR

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: Valencia, Spain

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

Flow: Design Manual Ver 1.0

Location: Wilmington, MA

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

Flow: Design Manual Ver. 1.0

Location: Toronto, Canada

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: Austin, TX

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: Santa Clara, CA

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

Flow: Design Manual Ver 1.0

Location: Sandy, UT

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

Flow: Design Manual Ver 1.0

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: Harrison Betz, (360) 954-9219
Qualifying Activity Contact: Scott Thomas, (614) 692-0587
QML Status: Full QML Certification/Qualification
Radiation hardness level: 100 K
Class: Q and V

Technology Types:

Bipolar, CMOS, Bi-CMOS, Bi-FET

Product Types:

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

Design Center(s)

Location: Nashua (DSP Tools), NH
Line: Linear, Mixed Signal, & Digital (Q and V)

Flow: Design Manual Ver 1.0

Location: Somerset, NJ

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: Newbury, United Kingdom

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

Flow: Design Manual Ver. 1.0

Location: San Jose, CA

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

Flow: Design Manual Ver 1.0

Location: San Diego, CA

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

Flow: Design Manual Ver 1.0

Wafer Fabrication Operation(s)

Location: TSMC; Hsin-chu, Taiwan

Line: CMOS, Bi-MOS (Q)

Flow: ADI-0088

Location: OKI Tokoyo, Japan

Line: Bipolar (Q)

Flow: ADI-0088

Location: Santa Clara, CA

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

Flow: ADI-0088

Location: Limerick, Ireland

Line: CMOS, BiMOS (Q and V)

Flow: ADI-0088

Location: Wilmington, MA

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

Flow: ADI-0088

Location: Chartered Semiconductor, Singapore

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

Flow: ADI-0088

Assembly Operation(s)

Location: ADI, Gen. Trias, Cavite, Philippines

Line: Ceramic, metal can

Flow: F-0133M,F0153M & F0154M

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: Harrison Betz, (360) 954-9219
 Qualifying Activity Contact: Scott Thomas, (614) 692-0587
 QML Status: Full QML Certification/Qualification
 Radiation hardness level: 100 K
 Class: Q and V

Technology Types:

Bipolar, CMOS, Bi-CMOS, Bi-FET

Product Types:

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

Assembly Operation(s)

Location: ADI, Greensboro, NC

Line: Ceramic Packages

Flow: ADI-0300

Location: ADI, Manila, Philippines

Line: Ceramic Package, metal can package

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

Electrical Test Operation(s)

Location: ADI, Gen. Trias, Cavite, Philippines

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: Wilmington, MA

Line: Electrical Screening, Group A

Flow: Per PROMIS system corresponding to part number

Location: ADI, Manila, Philippines

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

Location: Greensboro, NC

Line: Electrical Test

Flow: Per PROMIS system corresponding to part number

Environmental Test Operation(s)

Location: Limerick, Ireland

Line: Environmental Test

Flow: LK-00399

Location: ADI, Gen. Trias, Cavite, Philippines

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

Flow: Per PROMIS system corresponding to part number

Location: ADI, Manila, Philippines

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

Flow: ADI-0300

Location: Wilmington, MA

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

Flow: Per PROMIS system corresponding to part number

Package Information 2/

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

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 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 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
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)

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: 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
Location: Manassas, VA
Line: BAE Systems Burn-in and Mil-screen
Flow: QM Plan Baseline Process Flows

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

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)

Technology Types:

Assembly/Test

Product Types:

N/A

Assembly Operation(s)

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

Environmental Test Operation(s)

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

Package Information 2/

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

Cypress Semiconductor

Quality System Information

Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709
Website: <http://www.cypress.com>
CAGE Code: 65786, Symbol Code: CETK
Company Contact: 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, FRAM

Product Types:

nvSRAM, PLD, clocks

Design Center(s)

Location: San Jose, CA

Line: N/A

Flow: Cypress design rules

Wafer Fabrication Operation(s)

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

Flow: A439/A439P

A866/A866P

A918/A918P, A866/A866P, 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, 16Meg Fast Async Rad Hard LL65UP-25ODR 65nm

Flow: A918/A918P

Location: Taiwan Semiconductor Mfg, Taiwan

Line: PLD, 0.5 u

Flow: QM Plan 90-00033

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, FRAM

Product Types:

nvSRAM, PLD, clocks

Electrical Test Operation(s)

Location: Integra, Wichita, KS

Line: nvSRAM

Flow: 16-0001 program change procedure

Location: CML, Cavite City, Philippines

Line: PROM, PLD, clocks

Flow: 16-0001 program change procedure

Location: Hsinchu Taiwan

Line: KYEC Wafer Sort,

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

Location: Hsinchu Taiwan

Line: ChipMos Wafer Sort

Flow: SORT Test 144M QDRII+ SRAM

Environmental Test Operation(s)

Location: SemPac, Philippines

Line: Burn-in & Life Test

Flow: 29-nnnnn per device type

Location: CML, Cavite City, Philippines

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

Flow: 22-00012, Group C and D Travelers

Location: Albuquerque NM

Line: JD instruments Radiation Testing

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

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

Assembly Operation(s)

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

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

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: Bloomington, MN

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

Location: Bloomington, MN

Line: Cypress

Flow: R9 (90 Nanometer CMOS)

Location: Original IC Manufacturer

Line: Various

Flow: Various

Assembly Operation(s)

Location: Milpitas, CA

Line: Golden Altos, Alternate Assembly

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

Location: Simi Valley, CA

Line: DPA Class V contract assembly

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

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

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&QV(A/T)

Technology Types:

90 nm CMOS & Assembly/Test

Product Types:

Asynchronous SRAM, Class Q&V assembly/test

Package Information 2/

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

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

Eastern State Components

Quality System Information

Eastern State Components
108 Prats Junction Rd
Sterling, MA 015642
CAGE Code: 0R708
Company Contact: Stephen Keledjian
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: TO Can (MMT)
Flow: MMT AH 039
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: Sidebrazed (MMT)
Flow: MMT AH 034

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

Frontgrade Technologies (formerly CAES)

Quality System Information

Frontgrade Technologies (formerly CAES)

4350 Centennial Boulevard

Colorado Springs, CO 80907-3486

Website: <https://www.cobhamaes.com/pagesfamily/fams-hirel.cfm>

CAGE Code: 65342

Company Contact: Michael Vester, (719) 594-8009

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

QML Status: Full QML Certification/Qualification

Radiation hardness level: 1 Meg

Class: Q,V,Y

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: TSMC, Taiwan

Line: 0.18 um,0.25um ,0.35um

Flow: Antifuse Logic

Location: Pocatello, ID

Line: 0.6um , 0.8um CMOS

Flow: 141280/121260 1.2 um; 14101/14102 1.5 um

Location: Manassas, VA

Line: 0.8 um CMOS

Location: Camas, WA

Line: 0.18 um

Flow: Logic

Location: Camas, WA

Line: 0.25 um

Flow: ASIC Logic

Assembly Operation(s)

Location: Colorado Springs, CO

Line: Flatpack, DIP, PGA & LCC packages

Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

Electrical Test Operation(s)

Location: Colorado Springs, CO

Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

Environmental Test Operation(s)

Location: Colorado Springs, CO

Line: CMOS Gate Array

Flow: 30503/01 Rev A (Class Q); 30503/02 Rev A (Class V)

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**Frontgrade Technologies (formerly CAES)****Quality System Information**

Frontgrade Technologies (formerly CAES)

4350 Centennial Boulevard

Colorado Springs, CO 80907-3486

Website: <https://www.cobhamaes.com/pagesfamily/fams-hirel.cfm>

CAGE Code: 65342

Company Contact: Michael Vester, (719) 594-8009

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

QML Status: Full QML Certification/Qualification

Radiation hardness level: 1 Meg

Class: Q,V,Y

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**Golden Altos Corporation****Quality System Information**

Golden Altos Corporation
 44061 Old Warm Springs Blvd
 Fremont, CA 94538
 Website: <http://www.goldenaltos.com/>
 CAGE Code: 065N4
 Company Contact: Karla Patricia Dy, (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

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: Plymouth, MN
Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM
Flow: 22017935 (SOI IV), 22019135 (SOI IVE), 22020920 (SOI V), 22025794 (S150)
Location: NXP (Chandler, AZ and Austin, TX)
Line: Wafer Bumps
Flow: 22027391

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: Kyocera, San Diego, CA
Line: Non-hermetic Flip Chip
Flow: 22028780
Location: Six Sigma, Milpitas, CA
Line: Column Attach (Q & V)
Flow: PR-2010

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: Plymouth, MN
Line: SOI IV (Q & V), SOI IVE(Q & V), SOI V (Q & V), S150 (V), MRAM
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

Package Information 2/

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CGA	783 Max		solder	40-50 mil
DBGGA/LGA	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: Class V QAS-6243 and Class Q QAS-6242

Environmental Test Operation(s)

Location: Milpitas, CA

Line: Military 883

Flow: DLA Laboratory Suitability per VQC-20-035107

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	

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**Kyocera International, Inc.****Quality System Information**

Kyocera International, Inc.
 8611 Balboa Avenue
 San Diego, CA 92123-1580
 Website: <http://americas.kyocera.com/kai/semiparts/>
 CAGE Code: 03KL1
 Company Contact: Jorge Nieblas, (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, Yishun Industrial Park A, Singapore

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Colchester, VT

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technoogy, Ismaning, Germany

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Auburn, NH

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Colorado Springs, CO

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, North Chelmsford, MA

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Milpitas, CA

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Santa Barbara, CA

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Tempe, AZ

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technoloby, Hangzhou, P.R.C

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Plano, TX

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Cary, NC

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Location: Linear Technology, Grass Valley, CA

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Mask Development Center(s)

Location: Mask Fab Contractors

Line: QM Plan 06-03-7039

Flow: Q,V,B,S,M

Linear Technology

Quality System Information

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

Assembly Operation(s)

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

Electrical Test Operation(s)

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

Environmental Test Operation(s)

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

Technology Types:

Bipolar, CMOS, BiCMOS

Product Types:

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

Package Information 2/

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

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

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: Tempe, AZ

Line: Premier Semiconductor Services

Flow: Solder lead finish

Location: Amertron, Pampanga, Philippines

Line: Ceramic, with screening

Flow: Q Only

Electrical Test Operation(s)

Location: White Electronic Designs, Phoenix, AZ

Line: Electrical Tests

Flow: Q Only

Location: Amertron, Pampanga, Philippines

Line: Electrical Test

Flow: Q Only

Environmental Test Operation(s)

Location: Amertron, Pampanga, Philippines

Line: Burn-in

Flow: Q Only

Location: White Electronic Designs, Phoenix, AZ

Line: Conformance Tests

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 (MMT)****Quality System Information**

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

17/2 Moo 18, Suwiontawong Road

Chachoengsao, Th 24000

CAGE Code: N/A

Company Contact: Sasithorn Tareesarn, (66-38)545400

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	

Microchip Technology Nantes

Quality System Information

Microchip Technology Nantes
La Chantrerie BP 70602
44306 Nantes Cedex 3, FR
Website: <https://www.microchip.com/en-us/solutions/aerospace-and-defense>
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: R
Class: Q and V

Technology Types:

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

Product Types:

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

Design Center(s)

Location: Garching, Germany
Line: Microchip Technology Design Center
Flow: contact manufacturer
Location: Nantes, France
Line: Microchip Technology Design Center
Flow: contact manufacturer
Location: Bracknell, UK
Line: Microchip Technology Design Center
Flow: contact manufacturer

Mask Development Center(s)

Location: Taoyuan, Taiwan
Line: TOPPAN CHUNGWA ELECTRONICS CO., LTD. (T.C.E.)
Flow: N/A

Wafer Fabrication Operation(s)

Location: UMC, Tainan, Taiwan
Line: 12A for CMOS 0.09 μ m and RT Variouts
Location: UMC, HsinChu, Taiwan
Line: 8S for CMOS 0.18 μ m and RT Variouts
Flow: 8S for CMOS 0.18 μ m and RT Variouts
Location: L Foundry (formerly Atmel), Rousset Cedex, France
Line: CMOS 0.35um, 0.25um, 0.18um and RT Variouts
Flow: contact manufacturer
Location: MHS Nantes, FR --- (Formerly Atmel-Nantes) France
Line: CMOS 0.8,0.6,0.5 RT and RTP Variout
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: Microchip Technology
Flow: contact manufacturer

Environmental Test Operation(s)

Location: Nantes, France
Line: Microchip Technology
Flow: contact manufacturer

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

Microchip Technology Nantes

Quality System Information

Microchip Technology Nantes
La Chantrerie BP 70602
44306 Nantes Cedex 3, FR
Website: <https://www.microchip.com/en-us/solutions/aerospace-and-defense>
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: R
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

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
 A Division of Microchip
 11861 Western Avenue
 Garden Grove, CA 92641-2119
 Website: <http://www.microsemi.com/contact/contactfind.asp>
 CAGE Code: 34333, Symbol Code: CESD
 Company Contact: Carole Polizzi, (714) 799-6609
 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: Manufacturer

Mask Development Center(s)

Location: Micro Technology Inc. 2355 W. Chandler Blvd. Chandler, AZ

Line: Linear

Flow: Manufacturer

Wafer Fabrication Operation(s)

Location: Microchip Technology Inc. 1200 South 52nd St. Tempe AZ

Line: Linear

Flow: SGM59XX

Assembly Operation(s)

Location: 17/2 Moo 18, Suwintawong Rd, Tambol Saladaeng, Bangumpriew, Amphur Bangnampriao, Chacheongsao Province, Thailand, 24000

Line: Linear

Flow: SGM59XX, SGM59XX

Electrical Test Operation(s)

Location: 17/2 Moo 18, Suwintawong Rd, Tambol Saladaeng, Bangumpriew, Amphur Bangnampriao, Chacheongsao Province, Thailand, 24000

Line: Linear

Flow: SGM59XX, SGM59XX

Environmental Test Operation(s)

Location: 17/2 Moo 18, Suwintawong Rd, Tambol Saladaeng, Bangumpriew, Amphur Bangnampriao, Chacheongsao Province, Thailand, 24000

Line: Linear

Flow: SGM59XX, SGM59XX

Package Information 2/

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

Microsemi SoC Corp., a Microchip Company

Quality System Information

Microsemi SoC Corp., a Microchip Company
3870 North First Street
San Jose, CA 95134
Website: <https://www.microsemi.com/contact/contactfind.asp>
CAGE Code: 0J4Z0
Company Contact: Thomas Nguyen, (408) 819-1056
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 Field Programmable Gate Arrays

Product Types:

Field Programmable Gate Array and Radiation Tolerance FPGA

Design Center(s)

Location: San Jose CA
Line: Microchip Design Systems
Flow: Manufacturer

Mask Development Center(s)

Location: Hsinchu City Taiwan
Line: UMC

Flow: Manufacturer

Location: Malta NY

Line: Global Foundry

Flow: Manufacturer

Wafer Fabrication Operation(s)

Location: Malta NY

Line: Global Foundry

Flow: 0.35um, 0.45um, 0.6um, 12NM CMOS FPGA

Location: Regensburg, Germany

Line: Infineon Technologies

Flow: 0.25um, 0.13 Flash/CMOS FPGA

Location: Hsinchu City, Taiwan

Line: United Microelectronics corp (UMC)

Flow: 0.13 Flash, 65NM Flash, 28 NM Sonos, 0.15um, 0.25um CMOS and 0.22u Flash/CMOS FPGA

Assembly Operation(s)

Location: Milpitas, CA

Line: Six Sigma

Flow: Solder Dip, Column Attachment

Location: San Diego, CA

Line: Kyocera America, Inc.

Flow: Ceramic Quad Flatpak (CQFP) Ceramic Column Grid Array (CCGA) and Pin Grid Array (CPGA)

Location: Fremont CA

Line: Golden Altos

Flow: Ceramic Quad Flatpak (CQFP)

Electrical Test Operation(s)

Location: San Jose CA

Line: Microsemi SoC Corp., a Microship Company

Flow: C-00-QMP

Environmental Test Operation(s)

Location: Spokane, WA

Line: Hi Rel Lab

Flow: Destructive Physical Analysis

Location: Sunnyvale, CA

Line: EAG

Flow: Failure analysis, SEM analysis

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: <https://www.microsemi.com/contact/contactfind.asp>
CAGE Code: 0J4Z0
Company Contact: Thomas Nguyen, (408) 819-1056
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 Field Programmable Gate Arrays

Product Types:

Field Programmable Gate Array and Radiation Tolerance FPGA

Environmental Test Operation(s)

Location: Santa Clara, CA
Line: Covalent Metrology
Flow: Failure analysis
Location: Santa Clara CA
Line: Eurofins EAG Engineering
Flow: Burn-In, Life Test
Location: Milpitas, CA
Line: Six Sigma
Flow: Solderability, Column Pull, Fine and Gross Leak
Location: Milpitas CA
Line: Micross
Flow: Group B & D
Location: Milpitas, CA
Line: RQE
Flow: Burn-In, Life Test
Location: Englewood CO
Line: Onedia Research Services
Flow: Internal Gas Analysis
Location: San Jose CA
Line: ICE Engineering
Flow: Burn-In, Life Test
Location: San Jose CA
Line: Microsemi SoC Corp., a Microchip Company
Flow: Burn-In, Life Test
Location: El Segundo CA
Line: Eurofins EAG Material Science
Flow: Destructive Physical Analysis
Location: Santa Clara CA
Line: NDT Labs
Flow: Radiography

Package Information 2/

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

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

Micross (Silicon Turnkey Solutions)

Quality System Information

Micross (Silicon Turnkey Solutions)
1804 McCarthy Blvd
Milpitas, CA 95035
Website: <http://www.sts-usa.com/>
CAGE Code: 1VVP6
Company Contact: Pauli 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)

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/

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
Flatpack	40-352		Gold	25-50 mil

Micross Components

Quality System Information

Micross Components
 1810 S. Orange Blossom Trail
 Apopka, FL 32703
 Website: <http://www.micross.com/>
 CAGE Code: 57300
 Company Contact: Steven White, (813) 892-1558
 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

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/

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

onsemi Pocatello

Quality System Information

onsemi Pocatello
2300 Buckskin Road
Pocatello, ID 83201-2798
Website: <http://www.onsemi.com/>
CAGE Code: 31471
Company Contact: Harry Shaun, 208-572-0138
Qualifying Activity Contact: Shing Yu, (614) 692-0588
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q and N

Technology Types:

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

Product Types:

ASICs, gate arrays, standard cells

Design Center(s)

Location: Pocatello, ID
Line: QML Design
Flow: 12MQE00004A
Location: onsemi Lower Gwynedd, Lower Gwynedd, PA
Line: QML Design
Flow: 12MQE00004A
Location: onsemi Richardson, Richardson, TX
Line: QML Design
Flow: 12MQE00004A
Location: onsemi Lindon, Lindon, UT
Line: QML Design
Flow: 12MQE00004A

Mask Development Center(s)

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

Wafer Fabrication Operation(s)

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

Assembly Operation(s)

Location: Criteria Labs, Austin, TX
Line: Hot Solder Dip
Flow: 12MID7050013
Location: Integra Technologies Silicon Valley, Milpitas CA
Line: QML Ceramic Packages
Flow: 12MID7020040
Location: Pantronix, Fremont, CA
Line: QML Ceramic Packages (Residual Inventory Only)
Flow: AMIS 7020040
Location: A.S.E. Inc., Kaohsiung, Taiwan
Line: QML Plastic Packages
Flow: 12MID7020037
Location: Amkor Technology, Metro Manila, Philippines
Line: QML Plastic Packages
Flow: 12MID7020037
Location: Pocatello, ID
Line: QML Ceramic Packages and hot solder dip
Flow: 12MID7020040

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

onsemi Pocatello
 2300 Buckskin Road
 Pocatello, ID 83201-2798
 Website: <http://www.onsemi.com/>
 CAGE Code: 31471
 Company Contact: Harry Shaun, 208-572-0138
 Qualifying Activity Contact: Shing Yu, (614) 692-0588
 QML Status: Full QML Certification/Qualification
 Radiation hardness level: N/A
 Class: Q and N

Technology Types:

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

Product Types:

ASICs, gate arrays, standard cells

Assembly Operation(s)

Location: Amkor Technology, Metro Manila, Philippines

Line: QML Plastic LQFP Packages

Flow: 12MID7020062

Location: Kyocera, San Diego, CA

Line: QML Ceramic DBGA Packages

Flow: 12MID7020040

Electrical Test Operation(s)

Location: onsemi Carmona, Carmona Cavite Philippines

Line: QML Technology Flow 12MID7050013 & 12MID7050026

Flow: 12MID7050024

Location: LA 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: onsemi Carmona, Carmona Cavite Philippines

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 ball	25 mil
LQFP	144-208		solderpl/NiPdAu	20 mil
PBGA	564 balls		solder ball	50 mil
PQFP	44-240		solderpl/NiPdAu	20 mil
SBGA	560 balls		solder ball	50 mil
Side-Braze	28-48		gold	100 mil

Pyramid Semiconductor

Quality System Information

Pyramid Semiconductor
1249 Reamwood Ave
Sunnyvale, CA 94089
Website: <http://www.pyramidsemiconductor.com/>
CAGE Code: 3DTT2
Company Contact: Timothee Dargnies, (408) 734 8240
Qualifying Activity Contact: Jerrod Abel, (614) 692-9933
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q

Technology Types:

0.5, 0.6, 0.8, 1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS, 0.25um 1P3M CMOS

Product Types:

SRAMs, EEPROMs, Microprocessor, EEPROM, , Processor Interface

Design Center(s)

Location: Sunnyvale, CA
Line: CMOS
Flow: Contact Pyramid Semiconductor

Mask Development Center(s)

Location: Pocatello, ID
Line: CWB, C8H
Flow: onsemi QML Flow
Location: Hsin-Chu,
Line: TSMC Mask
Flow: TSMC ISO 9000 Flow

Wafer Fabrication Operation(s)

Location: Pocatello, ID
Line: CWB, C8H
Flow: onsemi QML Flow
Location: Hsin-Chu,
Line: TSMC Fab 2A
Flow: TSMC ISO-9000 Flow

Assembly Operation(s)

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

Electrical Test Operation(s)

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

Environmental Test Operation(s)

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

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: Timothee Dargnies, (408) 734 8240
Qualifying Activity Contact: Jerrod Abel, (614) 692-9933
QML Status: Full QML Certification/Qualification
Radiation hardness level: N/A
Class: Q

Technology Types:

0.5, 0.6, 0.8, 1.0 um CMOS Single poly double metal, 0.6, 0.8um 1P2M CMOS, 0.6um 1P2M Silicide CMOS, 0.25um 1P3M CMOS

Product Types:

SRAMs, EEPROMs, Microprocessor, EEPROM, , Processor Interface

Package Information 2/

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

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: Heather Cohn, (321) 456-6648
Qualifying Activity Contact: Paul Granchi, (614) 692-9975
QML Status: Full QML Certification/Qualification
Radiation hardness level: 300 K
Class: Q,V,T,M

Technology Types:

Bipolar, CMOS, linear, CMOS SAJI

Product Types:

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

Wafer Fabrication Operation(s)

Location: 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: Amkor, Philippines

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

Flow: Non-rad hard, Class M only

Location: Millenium Microtech, Chachoengsao, Thailand

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

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

Location: Intersil, Palm Bay, FL

Line: Compliant Hermetic

Flow: 841XXX, 240XXX, 352XXX

Electrical Test Operation(s)

Location: Criterion Labs, Austin, TX

Line: Wafer Probe

Flow: Class Q, T, V

Location: Carsem (S), Ipoh, Malaysia

Line: Wafer Probe

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

Location: STATS ChipPAC, Kuala Lumpur, Malaysia

Line: Test

Flow: Contact Manufacturer

Location: Intersil, Palm Bay, FL

Line: Compliant

Flow: Contact Manufacturer

Location: Criteria/Austin, Texas

Line: Wafer Probe

Flow: Class Q, T, V

Location: Lingsen, Taichung, Taiwan

Line: Test

Flow: Non-rad hard, Class M only

Location: Intersil, Milpitas, CA

Line: Test

Flow: Non-rad hard, Class M only

Environmental Test Operation(s)

Location: Millenium Microtech, Chachoengsao, Thailand

Line: Compliant Hermetic

Flow: 86XXXX, 40-H721-052-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: Heather Cohn, (321) 456-6648
 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: Intersil, Palm Bay, FL

Line: Compliant Hermetic

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

Location: STATS ChipPAC, Kuala Lumpur, Malaysia

Line: Compliant Hermetic

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

Package Information 2/

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

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

Renesas Electronics America (formerly known as IDT)

Quality System Information

Renesas Electronics America (formerly known as IDT)

6024 Silver Creek Valley Road

San Jose, CA 95138

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

CAGE Code: 8QEK4

Company Contact: Donald Lopez, 408.284.1476

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: TSMC Fab 3, Hsinchu, Taiwan

Line: Fab 3

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

Location: IDT, Hillsboro, OR

Line: Fab 4

Flow: CMOS 7, CMOS 8, CMOS 9

Location: IDT, Salinas, CA

Line: Fab 2 (Die/Wafer Stock Only)

Flow: 0.6um CMOS 8, 0.8um CMOS 7

Assembly Operation(s)

Location: MMT, Tambon Saladang Bangnumpruiw, Thailand

Line: Hermetic Assembly

Flow: Form 4H-LS-0309

Location: Amkor, Muntinlupa City, Philippines

Line: Hermetic Assembly

Flow: IDT Hermetic Flow

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

Renesas Electronics America (formerly known as IDT)

Quality System Information

Renesas Electronics America (formerly known as IDT)

6024 Silver Creek Valley Road

San Jose, CA 95138

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

CAGE Code: 8QEK4

Company Contact: Donald Lopez, 408.284.1476

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

QML Status: Full QML Certification/Qualification

Radiation hardness level: N/A

Class: Q

Technology Types:

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

Product Types:

SRAM, Logic

Package Information 2/

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

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

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

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: Jerrod Abel, (614) 692-9933
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: Milpitas, CA

Line: Golden Altos

Flow: Hermetic, Solder Seal

Location: Orlando, FL

Line: Micross Components

Flow: Hermetic, Solder Seal

Electrical Test Operation(s)

Location: Milpitas, CA

Line: Hi-Rel Microelectronics (Micross)

Flow: Digital / Memory

Location: Princeton, NJ

Line: SRI International

Flow: Digital / Memory

Location: Lago Vista, TX

Line: Anloy Technologies

Flow: Digital / Memory

Location: Santa Clara, CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: Digital / Memory

Environmental Test Operation(s)

Location: Santa Clara, CA

Line: Engineering and Solutions Technology (EAST), LLC

Flow: MIL-STD-883

Location: Milpitas, CA

Line: Golden Altos

Flow: MIL-STD-883

Location: Princeton, NJ

Line: SRI International

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: Jerrod Abel, (614) 692-9933
 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 (Micros)
 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: Emmanuelle Guerinel, +33671527637
 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), 65nm Space (GR740 Complex Digital Asic Microprocessor)

Product Types:

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

Design Center(s)

Location: Customer + IP Library Grenoble France

Line: ASIC

Flow: Contact Manufacturer

Location: Catania, Italy

Line: RHF ACMOS , RHR Current limiter, RHR DA converter, RHR Mos driver, RHP/F VCX, RHF Voltage regulators

Flow: Contact Manufacturer

Location: Grenoble France

Line: RHF AD converter , RHF AHCMOS , RHF Ampli diff , RHR comparators, RHR/F LVDS, RHF Operational Amplifier, RHR/F Op Amp, RHF Osc, RHF Voltage reference

Flow: Contact Manufacturer

Wafer Fabrication Operation(s)

Location: Crolles, France

Line: RHF AD converter, RHF AHCMOS, RHF Ampli diff, RHR comparators, RHR DA converter, RHF LVDS, RH-LVDS, RHF Op Amp, RHR Op Amp, RHF Osc, RHP/RHF VCX, RHF Voltage reference, ASIC

Flow: Contact Manufacturer

Location: Agrate, Italy

Line: RHR current limiter, RHR Mos driver

Flow: confidential, contact manufacturer

Location: AngMoKio Singapore

Line: RHF ACMOS, RHF Op Amp, RHF Voltage regulators

Flow: confidential, contact manufacturer

Location: Carrollton, TX

Line: RHF ACMOS, RHF Op Amp

Flow: confidential, contact manufacturer

Assembly Operation(s)

Location: Rennes, France

Line: Hermetic Assembly

Flow: QML V and QML Q - Contact Manufacturer

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
CCGA	625		Tin-lead	0.039 inch
CLGA	625		Gold	0.039 inch
DIP	14-20		solder/gold	0.1 inch
Flatpack	64		gold	0.05 inch
SMD	3		solder/gold	NA
TO	3		solder/gold	0.15 inch

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: Sebastien Renaud, 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: MOS13

Flow: HiP1.3 (.5um)

Location: Italy

Line: F8

Flow: CMOSE5-U35

Location: Scotland

Line: MOS1

Flow: 1.5 um

Location: Sendai, Japan

Line: TCS

Flow: 1 um

Location: Austin, TX

Line: MOS11

Flow: 0.65 um

Location: Austin, TX

Line: MOS8

Flow: 1.0 um

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-B1300

Flow: 2A00Q

Location: France

Line: GR18-B160

Flow: 2A00Q

Location: France

Line: GR180-AEHR

Flow: TC23EFM, TC13FM, TC23FVB

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: Sebastien Renaud, 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: GR180-B1300

Flow: 0AR3QT0A, 0ARAR3QT

Location: France

Line: J971-AEHR

Flow: 1AR3BIN

Location: France

Line: Sentry20-AEHR

Flow: 2A00QT, 2A00Q

Location: France

Line: J971-AEHR

Flow: 2A00QT, 2A00QL

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: Nancy Schindler, (408) 318-5886
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: Hong Kong
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: e2v a&d (DBA QP Semiconductor) - Milpitas, CA
Line: N/A
Flow: Per SCD-14 Device Design Requirements
Location: Swindon, UK
Line: N/A
Flow: Per SCD-14 Device Design Requirements
Location: Taiwan
Line: N/A
Flow: Per SCD-14 Device Design Requirements
Location: Canada
Line: N/A
Flow: Per SCD-14 Device Design Requirements
Location: San Jose, CA
Line: N/A
Flow: Per SCD-14 Device Design Requirements
Location: Seattle, WA
Line: N/A
Flow: Per SCD-14 Device Design Requirements

Wafer Fabrication Operation(s)

Location: California
Line: QP11 Micrel, OP AMPs/Switches bipolar
Flow: 1u, 2 metal
Location: California
Line: QP7 BICMOS, Bipolar logic, Bipolar analog
Flow: 1u, 2 metal
Location: Taiwan
Line: QP5 Macronix, CMOS Non-Volatile
Flow: 0.45u, 2 metal
Location: Lubbock, TX
Line: QP2 Xfab, CMOS
Flow: 0.8u, 3 metal
Location: UK
Line: QP12 Plessey, Bipolar logic
Flow: 1u, 3 metal

Master Listing of QML Technologies, Operations, Lines, Flows, Packages and Qualification Information**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: Nancy Schindler, (408) 318-5886
 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: 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: Golden Altos, Milpitas, CA
 Line: Military Hermetic
 Flow: Per SCD-12 Assembly Build Requirements
 Location: Millennium Microtech (Thailand) Co., Ltd.- (MMT), Chachoengsao, Thailand
 Line: Military Hermetic, QML Q, S/V Certified
 Flow: QPL-AH-001, QP Labs Process Flow and Special Requirements

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: Dennis Tanguay, (408) 721-3509
Qualifying Activity Contact: Andy Thacker, (614) 692-0589
QML Status: Full QML Certification/Qualification
Radiation hardness level: 300K
Class: Q,N, V

Technology Types:

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

Product Types:

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

Design Center(s)

Location: Dallas, TX
Line: Logic Design
Flow: Logic Design Rules
Location: Santa Clara, CA
Line: Mixed Signal/Linear
Flow: Mixed Signal/Linear
Location: Freising, Germany
Line: Logic / Mixed Signal / Linear
Flow: HVAL Design Rules
Location: Dallas, TX
Line: DSP Design
Flow: DSP Design Rules
Location: Fort Collins, CO
Line: Logic Design
Flow: Logic Design
Location: Sherman, TX
Line: MPD ASIC / FIFO / JTAG / Mixed Signal
Flow: Military Products Design Rules
Location: Bangalore, India
Line: TISVA Design Rules
Flow: TISVA Design Rules
Location: Freising, Germany
Line: TISVA Design Rules
Flow: TISVA Design Rules
Location: Federal Way, WA
Line: Mixed Signal/Linear
Flow: Mixed Signal/Linear
Location: Dallas, TX
Line: Linear Design
Flow: Linear Design Rules
Location: Sherman, TX
Line: SLL Logic/Mixed Signal/ Linear
Flow: HVAL Design Rules
Mask Development Center(s)
Location: Corbell, France
Line: Toppan
Flow: Contact Texas Instruments
Location: Dresden, Germany
Line: Toppan
Flow: Contact Texas Instruments

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: Dennis Tanguay, (408) 721-3509
Qualifying Activity Contact: Andy Thacker, (614) 692-0589
QML Status: Full QML Certification/Qualification
Radiation hardness level: 300K
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

Mask Development Center(s)

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

Wafer Fabrication Operation(s)

Location: Miho, Japan
Line: Miho 5,6 (Class Q only)
Flow: Miho
Location: Greenock, Scotland
Line: Bipolar and CMOS (Classes Q and V)
Flow: GFAB, Die bank only
Location: South Portland, ME
Line: MFAB, CMOS 7, CMOS 8, CMOS 9 (Classes Q and V)
Flow: MFAB
Location: Dallas, TX
Line: Logic, Analog/Mixed Signal (Class Q/V)
Flow: DMOS6
Location: Dallas, TX
Line: DSP (Class Q and V)
Flow: DMOS5
Location: Sherman, TX
Line: Logic, Analog/Mixed Signal, Programmable Logic (Classes Q and V)
Flow: SFAB
Location: Dallas, TX
Line: Logic, Interface, Analog/Mixed Signal, ASIC, DSP (Classes Q and V)
Flow: DFAB
Location: Freising, Germany
Line: Logic, Interface, Analog/Mixed Signal (Class Q and V)
Flow: FFAB

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: Dennis Tanguay, (408) 721-3509
Qualifying Activity Contact: Andy Thacker, (614) 692-0589
QML Status: Full QML Certification/Qualification
Radiation hardness level: 300K
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: Houston, TX
Line: Logic (Q/V); Interface, CMOS/Bipolar ASIC, Memory (Class Q); Die Stock Only
Flow: HFAB

Assembly Operation(s)

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

Electrical Test Operation(s)

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

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

Texas Instruments

12500 TI Blvd

Dallas, TX 75243

Website: <http://focus.ti.com/hirel/howtobuy.shtml>

CAGE Code: 01295

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

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

QML Status: Full QML Certification/Qualification

Radiation hardness level: 300K

Class: Q,N, V

Technology Types:

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

Product Types:

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

Package Information 2/

Type	Lead Range	Matrix Size	Lead Finish	Lead Pitch
CBGA	144-567		Solder	
CDBGGA	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

TT Electronics Welwyn Components LTD

Quality System Information

TT Electronics Welwyn Components LTD
Welwyn Electronics Park
Northumberland, UK
Website: <http://www.ttelectronics.com/>
CAGE Code: U1395
Company Contact: Clive Lincoln
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: Welwyn Components, England

Line: Hermetic CerDip

Location: Welwyn Components, England

Line: Hermetic metal can

Electrical Test Operation(s)

Location: Welwyn Components, England

Line: Linear Test

Environmental Test Operation(s)

Location: Welwyn Components, 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

VPT Componentsts

Quality System Information

VPT Componentsts
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

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: onsemi

Flow: Contact XTREME Semiconductor

Wafer Fabrication Operation(s)

Location: Pocatello, ID

Line: AMI Semiconductor

Flow: QML Flow

Assembly Operation(s)

Location: Milpitas, CA

Line: Golden Altos

Flow: Military Hermetic QML Q Certified/Qualified

Location: San Diego, CA

Line: Maxwell Technology

Flow: Military Hermetic QM Q/V Certified/Qualified

Electrical Test Operation(s)

Location: San Diego, CA

Line: Maxwell Technology

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

Location: Leander, TX

Line: Anloy Technology

Flow: 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

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

Microchip Technology 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

Microsemi Analog Mixed Signal Group

Distributors:

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

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

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

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

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

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

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

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

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

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

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

Distributors:

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

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

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

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

Distributors:

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

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

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

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

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

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

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

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

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

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

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

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>