



# nvSRAM Products

## QC Flows

This document is intended to provide Simtek nvSRAM customers with an overview of the following:

- Simtek Subcontract Manufacturing Partners
- Production Flow, Wafer Foundry
- Production Flow, Wafer Sort
- Production Flow, Package Assembly
- Production Flow, Package Level test
- Production Flow, Finished Product Inventory
- Materials Procurement
- RoHS Materials Controls
- Product Traceability
- RMA and Failure Analysis Process
- PCN and Change Notification

Further information is available on the Simtek website at [www.simtek.com](http://www.simtek.com) and from [appseng@simtek.com](mailto:appseng@simtek.com)



# Simtek nvSRAM Products

## Key Subcontract Manufacturing Partners

<b>Wafer Foundry</b>	0.25 Micron Products	DongBu-Anam, Bucheon, Korea
	0.8 Micron Products	Chartered Semiconductor Manufacturing, Singapore
<b>Package Assembly</b>	28 330 SOIC Packages	ASE, Taiwan
	All Other Package types	Amkor Technologies, Philippines
<b>Package Level Testing</b>		Integra Technologies, KS, USA
		Amkor Technologies, Philippines
<b>Drop-Ship</b>		Integra Technologies, KS, USA
		Amkor Technologies, Philippines
		Simtek, Colorado Springs

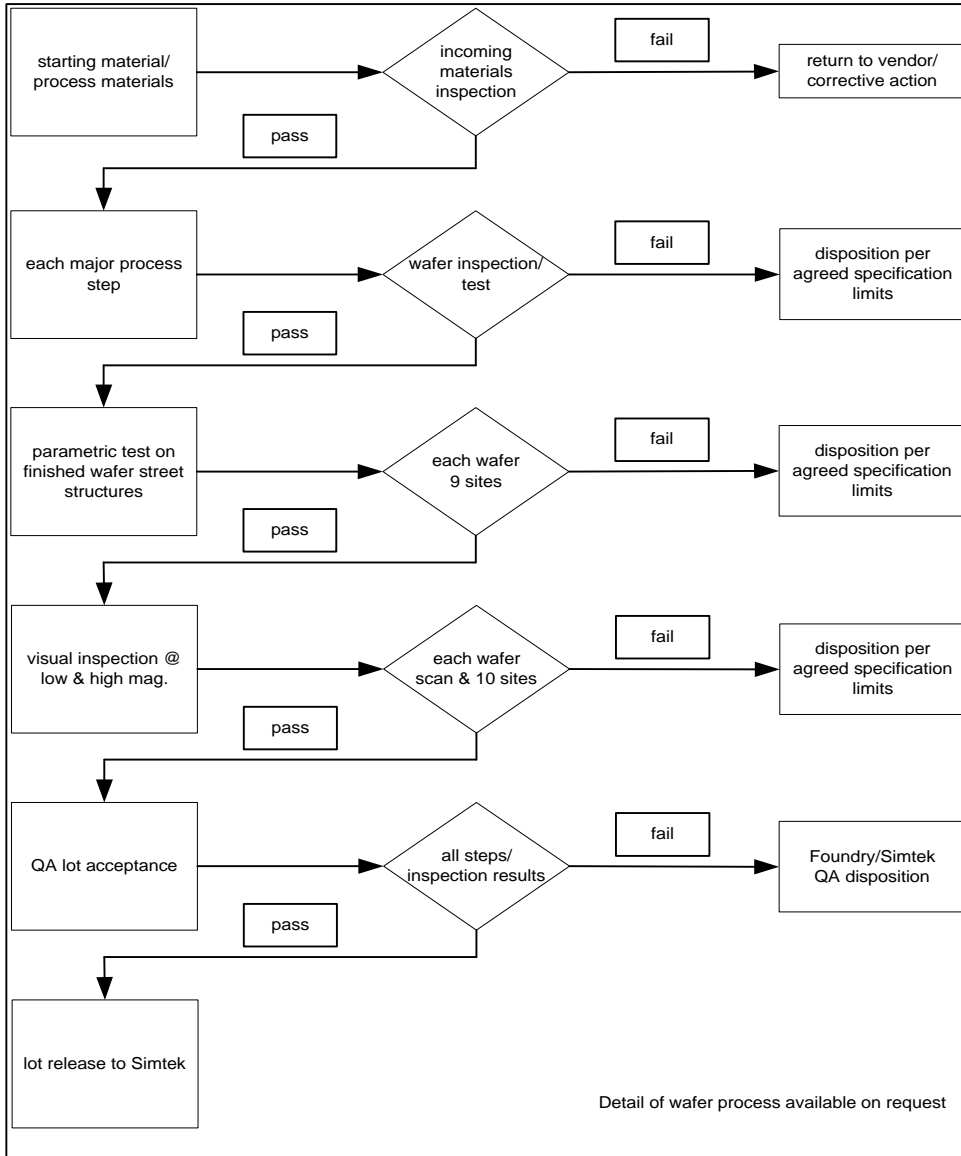


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## QC Wafer Fab

Supplier: DongbuAnam  
Location: Bucheon, Korea  
Facility ID: Fab AFB1 - 0.25 micron line  
Quality System: ISO 9001, QS-9000  
Environmental System: ISO 14001  
Monitors: Full SPC program plus reliability monitors

Note:  
Change notification is in place.  
Allowable reworks are documented.



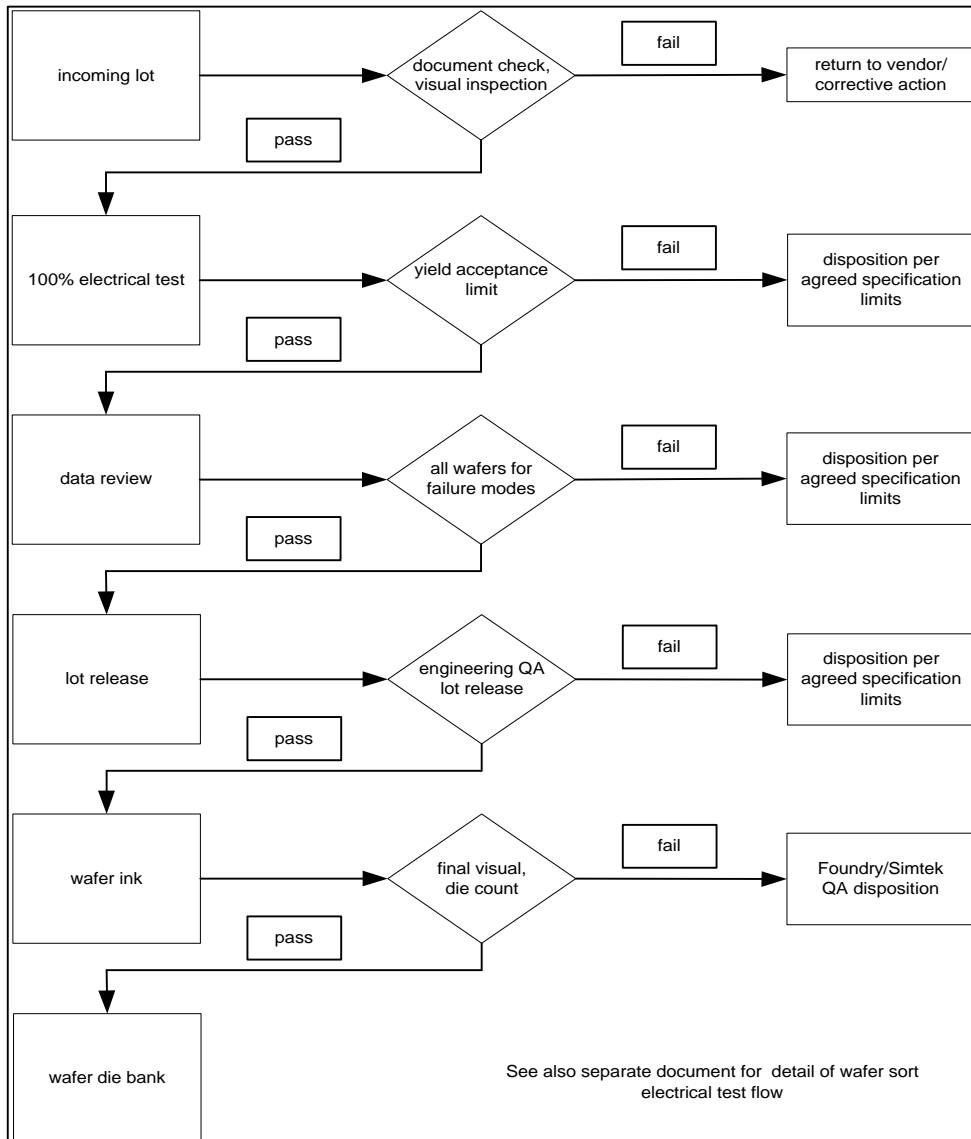


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## QC Wafer Sort

Supplier: Simtek Corporation  
Location: Colorado Springs, CO USA  
Quality System: Mil-Prf-38535, ISO9001:2000  
Equipment: Keithley Prober, Teradyne J937 Tester  
Monitors: Yield and Failure Mode Trend Analysis

Note:  
100% die sort includes  
retention and endurance screens

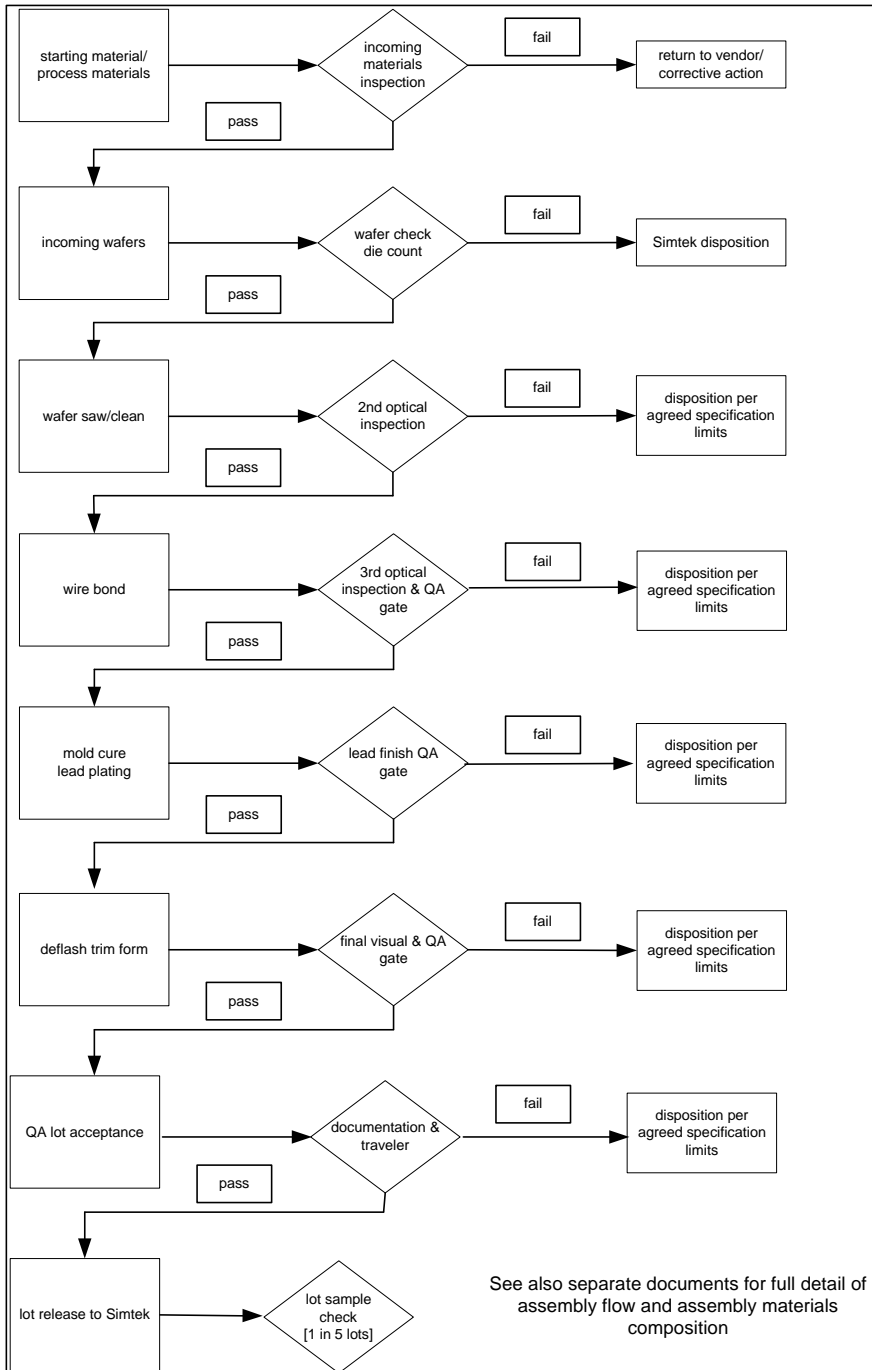




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## QC Assembly

Supplier: Amkor Technologies  
Location: Philippines  
Quality System: Mil-Prf-38535, ISO9001:2000  
Environmental System: ISO 14001  
Monitors: Full SPC program plus reliability monitors





# Production Assembly Flow

[example of matte tin plating flow]

Package SSOP 48 300  
 Flow ID P596-0000-0204  
 Plant Amkor ATP2  
 Plating Type Matte tin

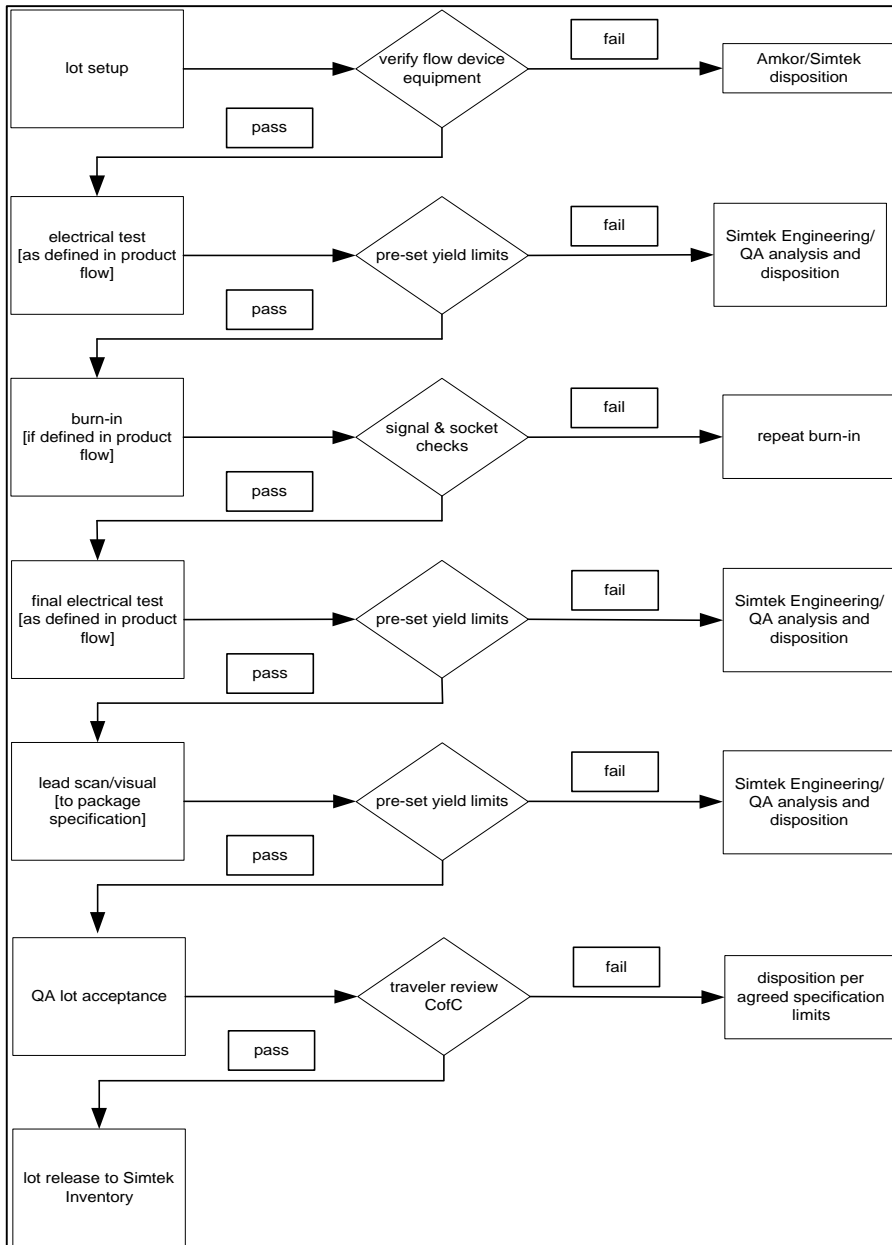
Process Step	Amkor Spec	Condition
Die ID check		1st 10 characters must tally
Backgrind to 15mil		
Wafer thickness check		actual vs Amkor spec for package type
Wafer qty / variance check		0 variance accepted
Die qty / variance check		5% variance accepted
Wafer Mount	001-0506-2001	Non contact
Bar Code	02-0540-1032	Print Sticker
Saw / Clean	001-0507-2002/3	CO <sub>2</sub> Bubbler
2nd Optical QA Gate	001-0309-2013	LTPD 5/0
Die Attach & Wafer Map setup	02-0610-1159	
Lead Frame setup		Lead Frame and Pad Size ID
Die Attach	001-0510-2042	Material: Abelstik Epoxy 8290
Die Attach Cure	001-0510-2052	175C ± 5C /1hr
Wire Bond	001-0511-2044	Material: 1.2 mil Au long loop
3rd Optical QA Gate	001-0313-2009	LTPD 5/0
Mold	001-0517-2447	Material: Sumitomo G600
Post Mold Cure	001-0514-2038	175C ± 5C 5hr
Resin / Flash Gate	001-0517-2448	LTPD 10/0
Gross Deflash / Trim	001-0521-2014	
Lead Finish	001-0522-2571	Material: Matte Tin 100%
Lead Finish QA	001-0322-2584	LTPD 2/0
Plating Anneal		150C ± 10C /1hr ± 10m
Laser Mark [1]	001-0519-2063	Back Side
Laser Mark [2]	001-0519-2063	Top Side
Trim / Form / Singulation	001-0521-2014	Gull Form
Final QA Gate	001-0330-2010	LTPD 2/0
Packing	001-0531-2234	
	Tube 101015362	300mil SOIC AAP Univerasal Antistatic Clear
	EndPlug 101304139	300mil SOIC AAWW Standard
	Bag 101160818	Antistatic Shielding 12*25"
	Box 101162527	4K [L=22", W=103/4" H=51/8"]



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## QC Final Test & Burn-In

Supplier: Amkor Test Services  
Location: Wichita KS USA  
Quality System: Mil-Prf-38535, ISO9001:2000  
Monitors: Yield & Failure Mode Trend Analysis

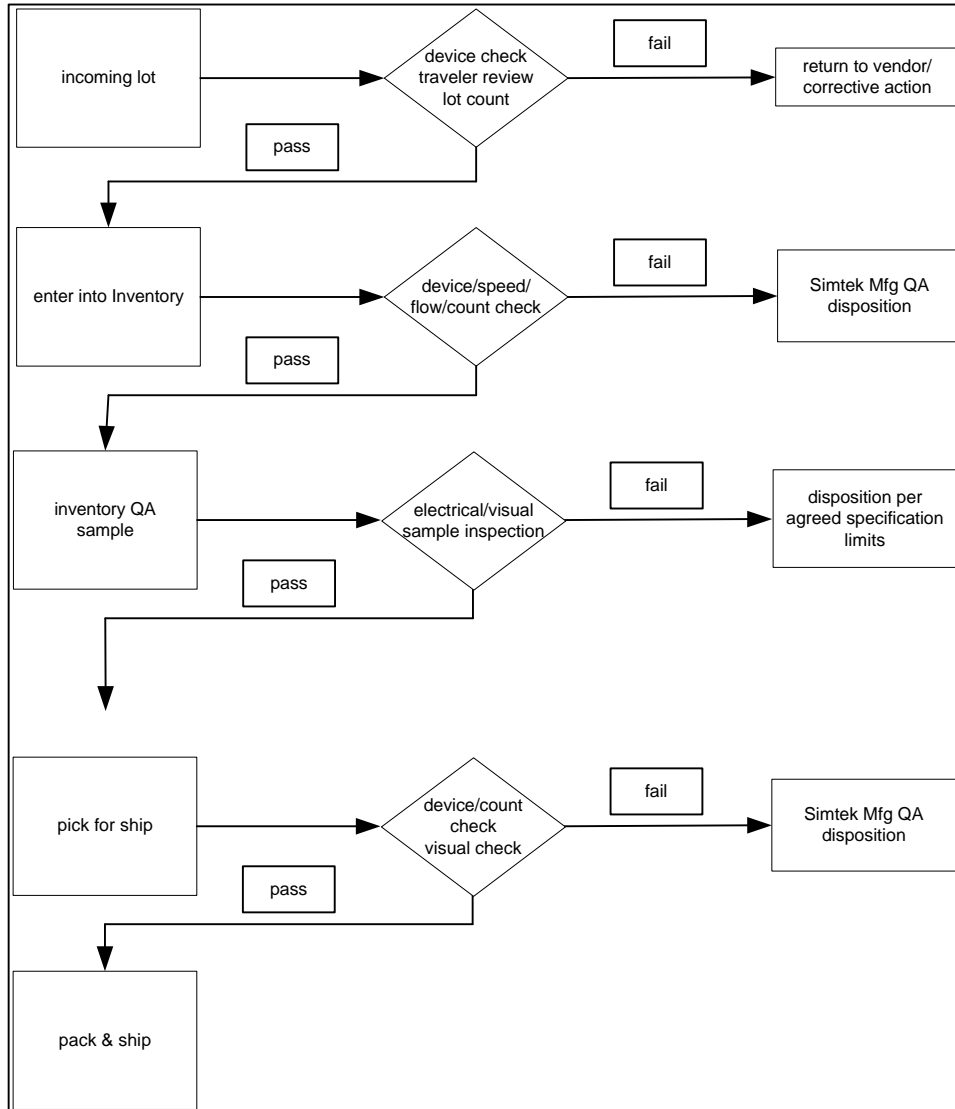




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## QC Finished Product Inventory Sampling

Supplier: Simtek Corporation  
Location: Colorado Springs, CO USA  
Quality System: Mil-Prf-38535, ISO9001:2000  
Monitors: Electrical & Mechanical Sampling plus Reliability Monitors

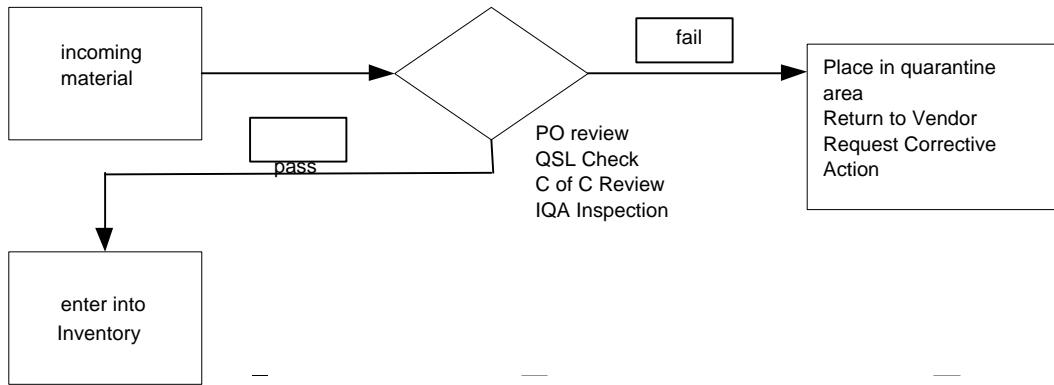




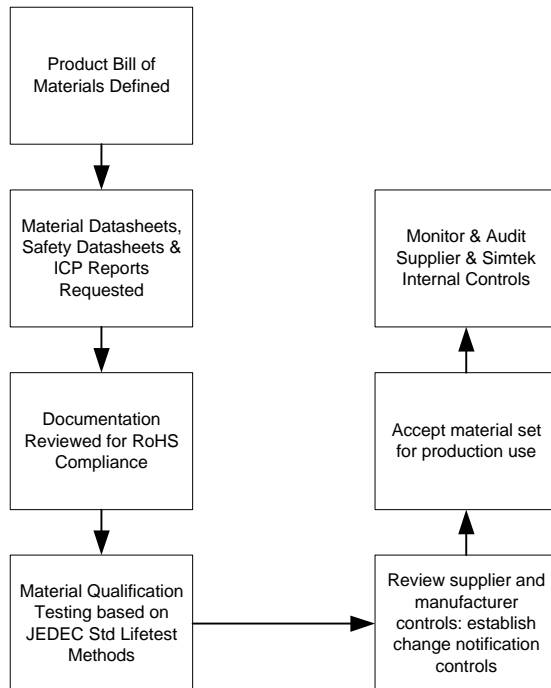
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## QC Materials

Supplier: Simtek Corporation  
 Location: Colorado Springs, CO USA  
 Quality System: Mil-Prf-38535, ISO9001:2000  
 Controls: Qualified Supplier Listing, Purchase Order Controls, RoHS Controls



### RoHS Controls





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## Product Traceability

Supplier: Simtek Corporation

Location: Colorado Springs, CO USA

Quality System: Mil-Prf-38535, ISO9001:2000

wafer lot	wafer lot ID starting material lot ID equipment logs fab out date & datecode traveler
wafer sort	wafer lot ID wafer ID die ID stored in spare cells traveler
assembly lot	wafer lot id wafer #s used assembly lot ID date in/out seal week yield
test lot	assembly lot ID test lot ID burn-in split ID test program ID date in/out yields & failure modes
finished goods lot	test split lot ID date & qty in
shipment	date shipped qty shipped finished goods lot ID customer ID PO ID Shipper ID
mark	bottom: Assembly Lot / Country top: Datecode / Tracecode

All tracking data is entered in Production database which links to Orders database. Traceability is established from substrate lot to line item shipment.



# nvSRAM Products

## PCN and Change Notification

Simtek follows JEDEC guidelines for the definition of major and minor changes to its products, and also for notification of customers when changes are planned. These guidelines apply to both the definition of notifyable changes and the qualification or requalification requirements related to those changes.

Notice of intent to make Major Changes to product will, whenever possible, be provided at least 6 months before the planned implementation date.

Simtek PCNs are posted on the Simtek website, and also via PCNAlert. Direct notification will be provided where the PCN contact email address has been provided by the customer.

Simtek customers are asked to provide Simtek with details of their PCN notification systems and procedures, particularly the contact email address for PCN notification.

Notification of intent to discontinue products will, whenever possible, be given at least 12 months before the planned discontinuance date. An opportunity for a last time buy, plus information on available alternative products, will be provided under the PCN process outlined above.

