ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16504

Issue Date: 30-Jul-2010

TITLE: Qualification of Serial SPI EEPROM devices CAT25080, CAT25160 and CAT25640 for fabrication at ON Semiconductor's Gresham, Oregon Wafer Fab

PROPOSED FIRST SHIP DATE: 01-Nov-2010
Customers needing additional time to qualify Gresham die will be given 60 more days.

AFFECTED CHANGE CATEGORY(S): CAT25080, CAT25160 and CAT25640 (all Packages, all Temperatures)

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or Denisa Stefan< denisa.stefan@onsemi.com >

SAMPLES: Samples available per "Affected Device List" table on Page 4
Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available
Contact your local ON Semiconductor Sales Office or Peter Cosmin < peter.cosmin@onsemi.com >

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

ON Semiconductor is pleased to announce that, as part of its ongoing effort to improve product availability, the Serial SPI EEPROM devices CAT25080, CAT25160 and CAT25640 are now qualified for production in the 0.35 µm CMOS EE process at ON Semiconductor's 8-inch Wafer Fab in Gresham, Oregon, USA. The Gresham Wafer Fab is ISO9001:2008, ISO/TS16949:2009 and ISO14001:2004 certified. Wafers for these devices will also continue to be supplied by our foundry partner OKI Semiconductor, Japan from a 6-inch line running a 0.35 µm CMOS EE process.

This will provide increased die capacity to meet our growing demand, while maintaining 100% backward compatibility to the previous CAT25xxx die revisions.

This notification and acceptance thereof, allows for the use of either Gresham or OKI die in future shipments under the same OPN.

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RELIABILITY DATA SUMMARY:

QTP: 09004, CAT24C64 Rev F / CAT25640 Rev F, Gresham 0.35um Process

Product	Qual Lot Number	Assy Lot	Wfr Lot
CAT24C64	lot 1	WE024548ACA	GAL26919# 21
CAT24C64	lot 2		GAL26919 #23
CAT24C64	lot 3		GAL50908 #22
CAT24C02	lot 4	WE018993AFS1	55NMA373SEC5
CAT24C02	lot 5	WE021454BFS1	611QA029SED6
CAT25640	lot 6	STMICRO026313A	GAM02932 #17

Notes:
1) Note: STMICROXXXXXX is the conventional name for the lots assembled at STAR Microelectronics Thailand.
2) Family data from other density products may be applicable when available

		Package	Lot Number	Samples	168hrs	408hrs	1000hrs		
HTOL High Temp Op Life (3x77)	408hrs, 150C release Per JA108 Tritemp test before and after	SOIC	lot 1	77	PASS	PASS	PASS		
			lot 4	77	PASS	PASS	PASS		
			lot 5	77	PASS	PASS	PASS		
			lot 6	77	PASS	PASS			
		Package	Lot Number	Samples	24hrs				
ELFR Early Life Failure Rate	Per AEC-Q100-008 HTOL conditions, 24hrs, 150C Room/Hot testing before and after	SOIC	lot 1	800	PASS				
			lot 4	800	PASS				
			lot 5	800	PASS				
			lot 6	800	PASS				
		Package	Lot Number	Samples	100k	200k	300k	400k	500k
EDR	**NVM Endurance**	SOIC							
Per JESD22-A103/ Q100-005 Room/Hot test before and after	1M Cycles		lot 1	77	PASS	PASS	PASS	PASS	PASS
			lot 6	77	PASS	PASS	PASS	PASS	PASS
		Package	Lot Number	Samples	600k	700k	800k	900k	1M
		SOIC	lot 1	77	PASS	PASS	PASS	PASS	PASS
			lot 6	77	PASS	PASS	PASS	PASS	PASS
	Wafer Level Endurance 1M Cycles	Wafer	Lot Number	Samples	1 M				
			lot 2	77	PASS				
			lot 3	77	PASS				
EDR	**NVM Data Retention**	Data	Lot Number	Samples	168hrs	336hrs	500hrs	1000hrs	
Per Q100-005 Room/Hot test before and after	Package Level 1000hrs, 150C Cycling Precon to 100k	"00"	lot 1	77	PASS	PASS	PASS	PASS	
			lot 6	77	PASS	PASS	PASS		
		"FF"	lot 1	77	PASS	PASS	PASS	PASS	
			lot 6	77	PASS	PASS	PASS		
		Data	Lot Number	Samples	100hrs				
	Wafer Level Bake at 225C, 100hrs Endurance Preconditioning: 500k Cycles		Wafer Level lot2	77	PASS				
			Wafer Level lot3	77	PASS				
			Wafer Level lot2	77	PASS				
			Wafer Level lot3	77	PASS				

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RELIABILITY DATA – QTP 09004 – Cont'd

		Package	Lot Number	ss	500V	1000V	1500V	2000V
ESD AEC Q100-002 1 lot, 3 units per level	**Human Body Model**	SOIC						
			lot 1	3/level	PASS	PASS	PASS	PASS
			lot 6	77	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	2500V	3000V	3500v	4000v
		SOIC	lot 1	3/level	PASS	PASS	PASS	PASS
			lot 6	77	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	50V	100V	150V	200V
ESD AEC Q100-003 1 lot, 3 units per level	**Machine Model**	SOIC	lot 1	3/level	PASS	PASS	PASS	PASS
			lot 6	77	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	100ma			
LU (1 x 6)	**Latch Up** per AEC-Q100-004 Room / Hot testing after LU test	SOIC	lot 1		25C	125C		
				6	PASS	PASS		
		Package	Lot Number	ss	Result			
CHAR Characterization (3 x 30)	Per AEC-Q003	SOIC	lot 1	30	PASS			
			lot 2	30	PASS			
			lot 3	30	PASS			
			lot 6	30	PASS			

ELECTRICAL CHARACTERISTIC SUMMARY:

Gresham die are 100% compatible to the corresponding OKI die in the sense of meeting existing data sheet specifications.

A detailed characterization report for each product is available upon request.

CHANGED PART IDENTIFICATION:

While both Gresham and OKI die will be offered under the same OPN, new package marking will be used only for Gresham die, with OKI die marking continuing unchanged. The Gresham die marking reflects the integration of former CSI (Catalyst) into ON Semiconductor, and provides for easier identification of device and die revision, especially for smaller packages with less room for marking.

Die origin will also be identified on the packaging box label by the 2-digit wafer fabrication country code of CS: US for Gresham and CS: Japan for OKI.

The top package marking format for the new Gresham die versus current marking for the OKI die is shown in the Appendix.

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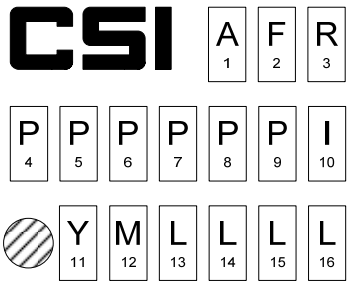
Appendix – PART IDENTIFICATION

Package Marking – Gresham die versus actual OKI die

1) SOIC -150mil 8pin (W, V), SOIC – 208mil 8pin (X)

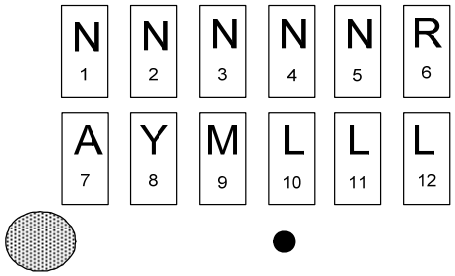
Current OKI die



FRONT SIDE MARK:

1: Assembly location code
2: Mark "4" for (lead finish NiPdAu)
3: Product Revision
4-9: Product Name: "PPPPPP"
10: Temp Range (I=Industrial; E=Extended)
11: Production Year (last digit)
12: Production Month (1-9, A,B,C)
13-16: Last four digits of assembly lot number

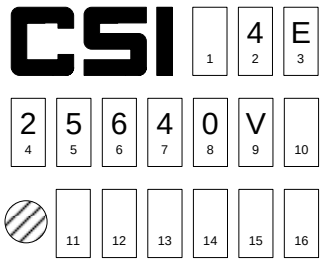
New Gresham die



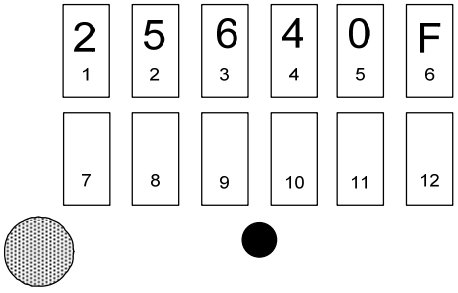
FRONT SIDE MARK:

1-5: Device name(5 char)
6: Production Revision
7: Assembly location
8: Production Year
9: Production Month
10-12: Assembly Lot Number

Example: CAT25640VI-G



Example: CAT25640VI-G (Rev F)



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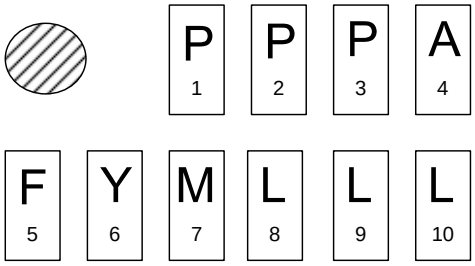
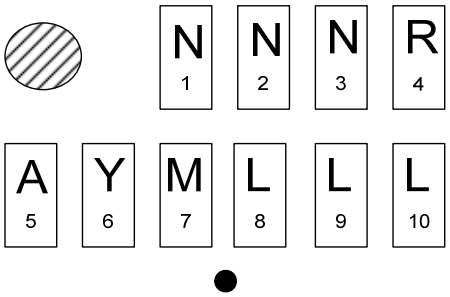
2) TSSOP- 8pin (Y)

Current OKI die



New Gresham die



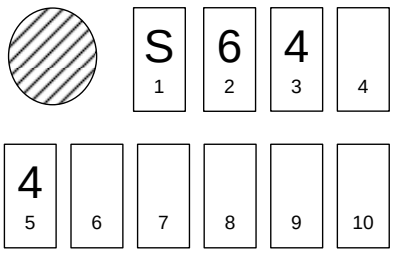
FRONT SIDE MARK:

1-3: Device name "PPP"
4: Assembly location
5: Lead finish
6: Production Year
7: Production Month
8-10: Assembly Lot Number

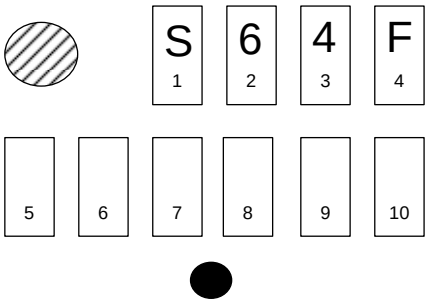
FRONT SIDE MARK:

1-3: Device name (3 digit)
4: Product Revision
5: Assembly location
6: Production Year
7: Production Month
8-10: Lot Number

Example: CAT25640YI-G

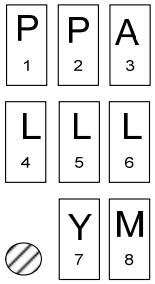


Example: CAT25640YI-G (Rev F)



3) TDFN 2x3mm (VP2) and UDFN 2x3mm (HU3, HU4)

Current OKI die



FRONT SIDE MARK:

1-2: Device name

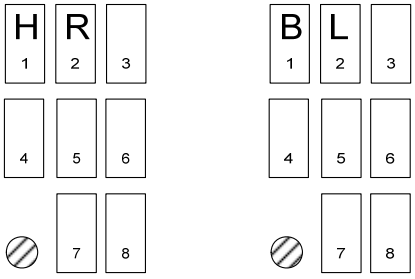
3: Assembly location

4-6: Lot Number

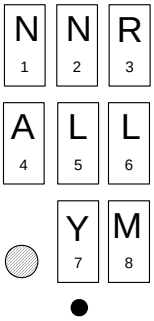
7: Production Year

8: Production Month

Example:
CAT25640VP2I-G / CAT25640HU3I-G



New Gresham die



FRONT SIDE MARK:

1-2: Device code

3: Code for revision and package

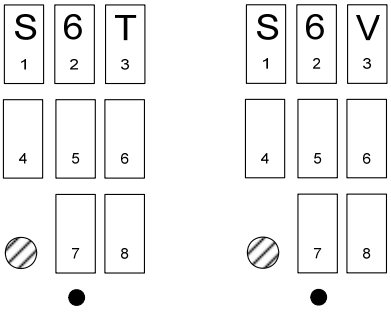
4: Assembly location

5-6: Lot Number

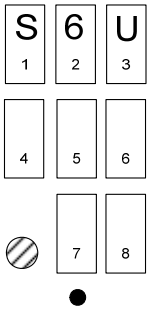
7: Production Year

8: Production Month

Example:
CAT25640VP2I-G / CAT25640HU3I-G



CAT25640HU4I-G



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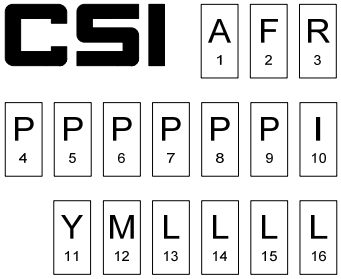
4) PDIP 8LD (L)

Current OKI die



FRONT SIDE MARK:

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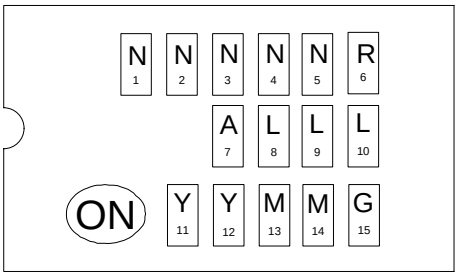
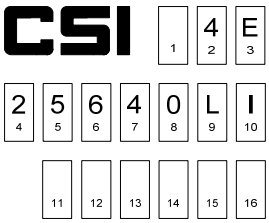
3: Product Revision
4-9: Product Name: "PPPPPP"
10: Temp Range (I=Industrial; E=Extended)
11: Production Year (last digit)
12: Production Month (1-9, A,B,C)
13-16: Last four digits of assembly lot number

New Gresham die

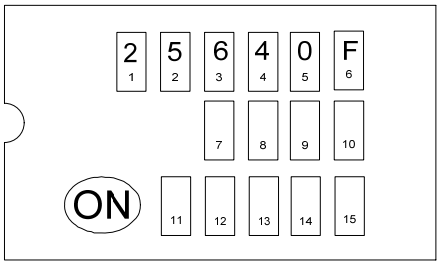


1-5: Device name
6: Product Revision
7: Assembly location code
8-10: Assembly lot number
11-12: Production Year
13-14: Production Week
15: Pb-free designator

Example: CAT25640LI-G

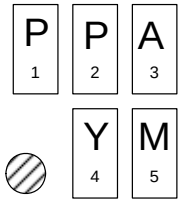


Example: CAT25640LI-G (Rev F)



5) UDFN8-2X2mm (HU2)

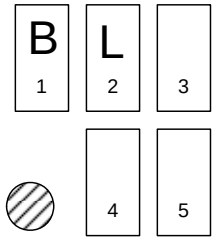
Current OKI die



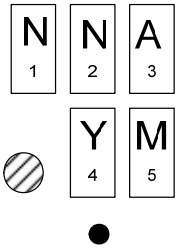
FRONT SIDE MARK:

1-2: Device name
3: Assembly location code
4: Production Year
5: Production Month

Example: CAT25160HU2I-G



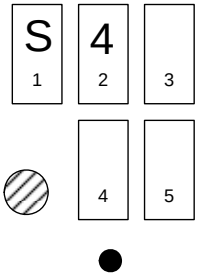
New Gresham die



FRONT SIDE MARK:

1-2: Device name
3: Assembly location code
4: Production Year
5: Production Month

Example: CAT25160HU2I-G



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List of Affected General Parts:

Part Number (OPN)	Sample Availability
CAT25080LI-G	10/30/2010
CAT25080VI-G	10/30/2010
CAT25080VI-GT3	10/30/2010
CAT25080YI-G	10/30/2010
CAT25080YI-GT3	10/30/2010
CAT25080HU2I-GT3	10/30/2010
CAT25080VP2I-GT3	10/30/2010
CAT25080LE-G	10/30/2010
CAT25080VE-G	10/30/2010
CAT25080VE-GT3	10/30/2010
CAT25080YE-G	10/30/2010
CAT25080YE-GT3	10/30/2010
CAT25080HU2E-GT3	10/30/2010
CAT25080VP2E-GT3	10/30/2010
CAT25080HU4I-GT3	10/30/2010
CAT25080HU4E-GT3	10/30/2010

Part Number (OPN)	Sample Availability
CAT25640LI-G	9/30/2010
CAT25640VI-G	7/30/2010
CAT25640VI-GT3	7/30/2010
CAT25640YI-G	7/30/2010
CAT25640YI-GT3	7/30/2010
CAT25640HU4I-GT3	7/30/2010
CAT25640VP2I-GT3	7/30/2010
CAT25640HU3I-GT3	9/30/2010
CAT25640LE-G	9/30/2010
CAT25640VE-GT3	7/30/2010
CAT25640YE-GT3	7/30/2010
CAT25640HU4E-GT3	7/30/2010
CAT25640VP2E-GT3	7/30/2010

CAT25160LI-G	8/15/2010
CAT25160VI-G	8/8/2010
CAT25160VI-GT3	8/8/2010
CAT25160YI-G	8/8/2010
CAT25160YI-GT3	8/8/2010
CAT25160VP2I-GT3	8/8/2010
CAT25160HU4I-GT3	8/8/2010
CAT25160HU2I-GT3	8/8/2010
CAT25160LE-G	8/15/2010
CAT25160VE-GT3	8/8/2010
CAT25160YE-GT3	8/8/2010
CAT25160HU4E-GT3	8/8/2010
CAT25160VP2E-GT3	8/8/2010
CAT25160YE-GT3C	8/8/2010
CAT25160VI-GT3C	8/8/2010

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List of Affected Customer Specific Parts:

CAT25080VP2IGTQH
CAT25C08VT-QN
CGX25C08LIG
CAT25C16YIT-QH
CAT25C16ZD2IGTKD
CAT25C16SIT-FN
CAT25C64SIT-FR