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|---|---|--|---------------------------------|
| PCN Number: | 20130926001A | PCN Date: | 07/14/2014 |
| Title: | BCB Elimination for 0.4 & 0.5mm Pitch WCSP Bump <=25 Bump Count | | |
| Customer Contact: | PCN Manager | Phone: | +1(214)480-6037 |
| Dept: | Quality Services | | |
| Proposed 1st Ship Date: | 05/12/2014 | Estimated Sample Availability: | Date Provided at Sample Request |
| Change Type: | | | |
| <input type="checkbox"/> Assembly Site | <input type="checkbox"/> Assembly Process | <input type="checkbox"/> Assembly Materials | |
| <input type="checkbox"/> Design | <input type="checkbox"/> Electrical Specification | <input type="checkbox"/> Mechanical Specification | |
| <input type="checkbox"/> Test Site | <input type="checkbox"/> Packing/Shipping/Labeling | <input type="checkbox"/> Test Process | |
| <input type="checkbox"/> Wafer Bump Site | <input type="checkbox"/> Wafer Bump Material | <input checked="" type="checkbox"/> Wafer Bump Process | |
| <input type="checkbox"/> Wafer Fab Site | <input type="checkbox"/> Wafer Fab Materials | <input type="checkbox"/> Wafer Fab Process | |
| <input type="checkbox"/> | <input type="checkbox"/> Part number change | | |

PCN Details

Description of Change:

Revision A is to announce the retraction of select devices. These devices will continue to be manufactured as prior and will not be subjected to the change described in this notification. Affected devices are identified with a **strikethrough** and are highlighted in yellow in the Product Affected Section.

Texas Instruments Incorporated is announcing the qualification of BCB (benzocyclobutene) layer elimination on 0.4 and 0.5 mm pitch Thin Micro SMD for 25 bumps. Only non-trim devices are applicable. The affected devices are listed in the "Product Affected" section.

Reason for Change:

Continuity of Supply.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None.

Changes to product identification resulting from this PCN:

None.

Product Affected:

| | | | |
|----------------------------|--------------------------------|-----------------------------|------------------------------------|
| ARC9TLVOTL/NOPB | LM3655TLX | LM94023BITME/NOPB | LP3985ITLX-2.7/NOPB |
| BP18TM/NOPB | LM3686TLE-AADW/NOPB | LM94023BITMX/NOPB | LP3985ITLX-2.8/E7001676 |
| BP18TMX/NOPB | LM3686TLE-AADW/NOPB | LMC555CTP/NOPB | LP3985ITLX-2.8/NOPB |
| BP6TME/NOPB | LM3686TLE-AAED/NOPB | LMC555CTPX/NOPB | LP3985ITLX-2.8/NOPB |
| BP6TMX/NOPB | LM3686TLE-AAED/NOPB | LMC6035ITL/NOPB | LP3985ITLX-2.8/E7001676 |
| BP8TLE/NOPB | LM3686TLE-AAEF/NOPB | LMC6035ITLX | LP3985ITLX-2.9/NOPB |
| BP9TME/NOPB | LM3686TLE-AAEF/NOPB | LMC6035ITLX/NOPB | LP3985ITLX-2.9/NOPB |
| BP9TMX/NOPB | LM3686TLX-AADW/NOPB | LMC8101TP/NOPB | LP3985ITLX-285/NOPB |
| EU13LMH2110TM/NOPB | LM3686TLX-AADW/NOPB | LMC8101TPX/NOPB | LP3985ITLX-285/NOPB |
| LM10502TLE/NOPB | LM3686TLX-AAED/NOPB | LMH2100TM/NOPB | LP3985ITLX-3.0/NOPB |
| LM10502TLX/NOPB | LM3686TLX-AAED/NOPB | LMH2100TMX/NOPB | LP3985ITLX-3.0/NOPB |
| LM20LVTME/NOPB | LM3686TLX-AAEF/NOPB | LMH2110TM/NOPB | LP3985ITLX-3.1/NOPB |
| LM20LVTMX/NOPB | LM3686TLX-AAEF/NOPB | LMH2110TMX/NOPB | LP3985ITLX-3.1/NOPB |
| LM20SITL/NOPB | LM3695YFQR | LMH2110TMX/S7002718 | LP3985ITLX-3.2/NOPB |
| LM20SITLX/NOPB | LM393TL | LMH2110TMX/S7002718 | LP3985ITLX-3.2/NOPB |
| LM2755TM/NOPB | LM393TL/NOPB | LMH2121TME/NOPB | LP3985ITLX-3.3/NOPB |
| LM2755TMX/NOPB | LM393TLX | LMH2121TMX/NOPB | LP3985ITLX-3.3/NOPB |
| LM2903ITL/NOPB | LM393TLX/NOPB | LMH2180TM/NOPB | LP3985ITLX-4.75/NOPB |
| LM2903ITLX | LM4665ITL/NOPB | LMH2180TMX/NOPB | LP3985ITLX-4.75/NOPB |

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|---------------------------|----------------------------|-----------------------------|---------------------------------|
| LM2903ITLX/NOPB | LM4667ITL | LMH2190TM-38/NOPB | LP3985ITLX-4.8/NOPB |
| LM2904ITP/NOPB | LM4667ITL/NOPB | LMH2190TMX-38/NOPB | LP3985ITLX-4.8/NOPB |
| LM2904ITPX/NOPB | LM4670ITL/NOPB | LMH2191TME/NOPB | LP3985ITLX-5.0/NOPB |
| LM317LITP/NOPB | LM4670ITLX/NOPB | LMH2191TMX/NOPB | LP3985ITLX-5.0/NOPB |
| LM317LITPX/NOPB | LM4671ITL/NOPB | LMR70503TM/NOPB | LP3987ITL-2.5/NOPB |
| LM3291TME/NOPB | LM4671ITLX/NOPB | LMR70503TMX/NOPB | LP3987ITL-2.6/NOPB |
| LM3291TMX/NOPB | LM4673TM/NOPB | LMS4684ITL | LP3987ITL-2.8/NOPB |
| LM34904ITM/NOPB | LM4673TMX/NOPB | LMS4684ITL/NOPB | LP3987ITL-2.85/NOPB |
| LM34904ITMX/NOPB | LM4674ATL/NOPB | LMS4684ITLX | LP3987ITL-2.85/NOPB |
| LM34908TM-3.5/NOPB | LM4674ATLX/NOPB | LMS4684ITLX/NOPB | LP3987ITL-3.0/NOPB |
| LM34908TM-5.7/NOPB | LM4674TLX/NOPB | LMV1090TL/NOPB | LP3987ITLX-2.5/NOPB |
| LM34908TM-ADJ/NOPB | LM4675TL/NOPB | LMV1090TLX/NOPB | LP3987ITLX-2.5/NOPB |
| LM34908TM-ADJA/NOPB | LM4675TLX/NOPB | LMV225TL/NOPB | LP3987ITLX-2.6/NOPB |
| LM34908TM-ADJA/NOPB | LM48311TL/NOPB | LMV225TLX/NOPB | LP3987ITLX-2.6/NOPB |
| LM34908TM-ADJA2/NOPB | LM48311TLX/NOPB | LMV226TL/NOPB | LP3987ITLX-2.8/NOPB |
| LM34908TM-ADJA2/NOPB | LM48312TLE/NOPB | LMV226TLX/NOPB | LP3987ITLX-2.8/NOPB |
| LM34908TM-ADJB/NOPB | LM48312TLX/NOPB | LMV228TL/NOPB | LP3987ITLX-2.85/E7001675 |
| LM34908TM-ADJB/NOPB | LM48340TM/NOPB | LMV228TLX/NOPB | LP3987ITLX-2.85/NOPB |
| LM34908TMX-3.5/NOPB | LM48411TL/NOPB | LMV232TL/NOPB | LP3987ITLX-2.85/NOPB |
| LM34908TMX-3.5/NOPB | LM48411TL/S7002599 | LMV232TLX/NOPB | LP3987ITLX-2.85/E7001675 |
| LM34908TMX-5.7/NOPB | LM48411TLX/NOPB | LMV7272TL/J7002014 | LP3987ITLX-3.0/NOPB |
| LM34908TMX-5.7/NOPB | LM48411TLX/S7002606 | LMV7272TL/NOPB | LP3987ITLX-3.0/NOPB |
| LM34908TMX-ADJ/NOPB | LM48411TLX/S7002606 | LMV7272TLX/J7002015 | LP3999ITL-1.8/NOPB |
| LM34908TMX-ADJ/NOPB | LM48413TL/NOPB | LMV7272TLX/NOPB | LP3999ITLX-1.8/E7000583 |
| LM34908TMX-ADJA/NOPB | LM48413TLX/NOPB | LMV7272TLX/J7002015 | LP3999ITLX-1.8/NOPB |
| LM34908TMX-ADJA/NOPB | LM48512TL/NOPB | LMV981TL/NOPB | LP3999ITLX-1.8/NOPB |
| LM34908TMX-ADJB/NOPB | LM48512TLX/NOPB | LMV981TLX/J7002010 | LP3999ITLX-1.8/E7000583 |
| LM34908TMX-ADJB/NOPB | LM48513TL/NOPB | LMV981TLX/NOPB | LP5522TM/NOPB |
| LM34908UM-3.5/NOPB | LM48513TLX/NOPB | LP3907TL-JJ11/NOPB | LP5522TMX/NOPB |
| LM34908UMX-3.5/NOPB | LM48555TL/NOPB | LP3907TL-JJCP/NOPB | LP5524TM-5/NOPB |
| LM34908UMX-3.5/NOPB | LM48555TLX/NOPB | LP3907TL-JSXS/NOPB | LP5524TMX-5/NOPB |
| LM34940TM-ADJ/NOPB | LM48556TL/NOPB | LP3907TL-PLNTO/NOPB | LP5562TME/NOPB |
| LM34940TMX-ADJ/NOPB | LM48556TLX/NOPB | LP3907TL-PLNTO/NOPB | LP5562TMX/NOPB |
| LM34940TMX-ADJ/NOPB | LM48557TL/NOPB | LP3907TL-SMP1/NOPB | LP5952TL-0.7/NOPB |
| LM3532TME-40/NOPB | LM48557TLX/NOPB | LP3907TLX-0B/NOPB | LP5952TL-1.0/NOPB |
| LM3532TME-40A/NOPB | LM48557TLX/S7002424 | LP3907TLX-JJ11/NOPB | LP5952TL-1.2/NOPB |
| LM3532TMX-40/NOPB | LM48557TLX/S7002424 | LP3907TLX-JJ11/NOPB | LP5952TL-1.3/NOPB |
| LM3532TMX-40A/NOPB | LM48560TL/NOPB | LP3907TLX-JJCP/NOPB | LP5952TL-1.4/NOPB |
| LM3532TMX-40A/S7003106 | LM48560TLX/NOPB | LP3907TLX-JJCP/NOPB | LP5952TL-1.5/NOPB |
| LM3532TMX-40A/S7003106 | LM48580TL/NOPB | LP3907TLX-JSXS/NOPB | LP5952TL-1.6/NOPB |
| LM3533TME-40/NOPB | LM48580TLX/NOPB | LP3907TLX-JSXS/NOPB | LP5952TL-1.8/NOPB |
| LM3533TMX-40/NOPB | LM4879ITL/NOPB | LP3907TLX-PLNTO/NOPB | LP5952TL-2.0/NOPB |
| LM3534TME-A1/NOPB | LM48821TL/NOPB | LP3907TLX-PLNTO/NOPB | LP5952TLX-0.7/NOPB |
| LM3534TME/NOPB | LM48821TLX/NOPB | LP3918TL-A/NOPB | LP5952TLX-1.0/NOPB |
| LM3534TMX/NOPB | LM48822TL/NOPB | LP3918TL-L/NOPB | LP5952TLX-1.2/NOPB |
| LM3555TLE/NOPB | LM48822TLX/NOPB | LP3918TL/NOPB | LP5952TLX-1.3/NOPB |
| LM3555TLX/NOPB | LM48823TL/NOPB | LP3918TLX-A/NOPB | LP5952TLX-1.4/NOPB |
| LM3556TME/NOPB | LM48823TLX/NOPB | LP3918TLX-L/NOPB | LP5952TLX-1.5/NOPB |
| LM3556TMX/NOPB | LM48824TM/NOPB | LP3918TLX/NOPB | LP5952TLX-1.6/NOPB |
| LM3559TLE/NOPB | LM48824TMX/NOPB | LP3928TLX-1828/NOPB | LP5952TLX-1.8/NOPB |
| LM3559TLE/S7002732 | LM48860TL/NOPB | LP3928TLX-1828/NOPB | LP5952TLX-2.0/NOPB |

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| LM3559TLX/NOPB | LM48860TLX/NOPB | LP3983ITL-2.5/NOPB | LP8557AYFQR |
| LM3559TLX/S7002731 | LM48861TM/NOPB | LP3983ITLX-1.6/NOPB | LP8557AYFQT |
| LM3560TLE-20/NOPB | LM48861TMX/NOPB | LP3983ITLX-1.6/NOPB | LP8557E00AYFQR |
| LM3560TLE/NOPB | LM48861TMX/S7002583 | LP3985ITL-2.5/NOPB | LP8557E00AYFQT |
| LM3560TLX-20/NOPB | LM48861TMX/S7002583 | LP3985ITL-2.6/NOPB | LP8711TLE/NOPB |
| LM3560TLX/NOPB | LM49120TL/NOPB | LP3985ITL-2.7/NOPB | LP8711TLX/NOPB |
| LM3561TME/NOPB | LM49120TLX/NOPB | LP3985ITL-2.8/NOPB | LP8720TLE-B/NOPB |
| LM3561TMX/NOPB | LM4921ITL/NOPB | LP3985ITL-2.9/NOPB | LP8720TLE-SMP1/NOPB |
| LM3563A3TME/NOPB | LM4921ITLX/NOPB | LP3985ITL-2.85/NOPB | LP8720TLE-SMP1/NOPB |
| LM3563TME/NOPB | LM4941TM/NOPB | LP3985ITL-3.0/NOPB | LP8720TLE/NOPB |
| LM3565TLE/NOPB | LM4941TMX/NOPB | LP3985ITL-3.1/NOPB | LP8720TLX-B/NOPB |
| LM3565TLX/NOPB | LM4954TL/NOPB | LP3985ITL-3.2/NOPB | LP8720TLX/NOPB |
| LM358TP/NOPB | LM4990ITL/NOPB | LP3985ITL-3.3/NOPB | LP8727TME-B/NOPB |
| LM358TPX/NOPB | LM4990ITLX/NOPB | LP3985ITL-4.75/NOPB | LP8727TME-SMP1/NOPB |
| LM3630ATME | LM78L05ITP/NOPB | LP3985ITL-4.75/NOPB | LP8727TME-SMP1/NOPB |
| LM3630ATMX | LM78L05ITPX/NOPB | LP3985ITL-4.8/NOPB | LP8727TME/NOPB |
| LM3630TME/NOPB | LM78L09ITPX/NOPB | LP3985ITL-5.0/NOPB | LP8727TMX-B/NOPB |
| LM3630TMX/NOPB | LM79L05ACTL/NOPB | LP3985ITLX-2.5/NOPB | LP8727TMX/NOPB |
| LM3642TLE-LT/NOPB | LM79L05ACTLX | LP3985ITLX-2.5/NOPB | NE139LMH2191TM/NOPB |
| LM3642TLE/NOPB | LM79L05ACTLX/NOPB | LP3985ITLX-2.6/NOPB | NE139LMH2191TM/NOPB |
| LM3642TLX-LT/NOPB | LM8335TLE/NOPB | LP3985ITLX-2.6/NOPB | PLM3534TMXA1/J |
| LM3642TLX/NOPB | LM8335TLX/NOPB | LP3985ITLX-2.7/NOPB | |

Qualification Data: Approved 1/23/2014

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1: LP3907TLX-PLNTO/NOPB(CL)

Package Construction Details

| | | | |
|-----------------------------------|--------------------------|--------------------------|--------|
| Assembly & Bump Site: | TIEM - MALACCA / TIEM-BP | Bump Composition: | SnAgCu |
| # Pins-Designator, Family: | 25-WCSP, WCSP | Bump Diameter: | 300um |

Qualification: Plan Test Results

| Reliability Test | Conditions | Sample Size / Fail | | |
|-------------------|-----------------------|--------------------|-------|-------|
| | | Lot#1 | Lot#2 | Lot#3 |
| **Biased HAST | 130C/85%RH (96 Hours) | 77/0 | -- | -- |
| **Life Test | 150C (500 Hours) | 77/0 | -- | -- |
| Temperature Cycle | -40/125C (500 Cycles) | 77/0 | -- | -- |

Notes: **Preconditioning: MSL 1@260C peak +5/0C

Qual Vehicle 2: LP3907TLXPK4J3(TL)

Package Construction Details

| | | | |
|-----------------------------------|--------------------------|--------------------------|--------|
| Assembly & Bump Site: | TIEM - MALACCA / TIEM-BP | Bump Composition: | SnAgCu |
| # Pins-Designator, Family: | 25-WCSP, WCSP | Bump Diameter: | 300um |

| Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results | | | | | |
|--|-----------------------|-------------------|-------|-------|--|
| Reliability Test | Conditions | Sample Size /Fail | | | |
| | | Lot#1 | Lot#2 | Lot#3 | |
| **Biased HAST | 130C/85%RH (96 Hours) | 77/0 | 77/0 | 77/0 | |
| **Life Test | 150C (500 Hours) | 77/0 | -- | -- | |
| Temperature Cycle | -40/125C (500 Cycles) | 77/0 | 77/0 | 77/0 | |
| Notes: **Preconditioning: MSL 1@260C peak +5/0C | | | | | |

Qualification Data: Approved 12/20/2013

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1: LP8727TMXBNOPB(CL)

Package Construction Details

| | | | |
|-----------------------------------|--------------------------|--------------------------|--------|
| Assembly & Bump Site: | TIEM – MALACCA / TIEM-BP | Bump Composition: | SnAgCu |
| # Pins-Designator, Family: | 25-WCSP, WCSP | Bump Diameter: | 250um |

| Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results | | | | | |
|--|-----------------------|-------------------|-------|-------|--|
| Reliability Test | Conditions | Sample Size /Fail | | | |
| | | Lot#1 | Lot#2 | Lot#3 | |
| **Biased HAST | 130C/85%RH (96 Hours) | 77/0 | -- | -- | |
| **Life Test | 125C (500 Hours) | 77/0 | -- | -- | |
| Temperature Cycle | -40/125C (500 Cycles) | 77/0 | -- | -- | |
| Notes: **Preconditioning: MSL 1@260C peak +5/0C | | | | | |

Qual Vehicle 2: LP8727TMXBNOPB(TL)

Package Construction Details

| | | | |
|-----------------------------------|--------------------------|--------------------------|--------|
| Assembly & Bump Site: | TIEM – MALACCA / TIEM-BP | Bump Composition: | SnAgCu |
| # Pins-Designator, Family: | 25-WCSP, WCSP | Bump Diameter: | 250um |

| Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results | | | | | |
|--|-----------------------|-------------------|-------|-------|--|
| Reliability Test | Conditions | Sample Size /Fail | | | |
| | | Lot#1 | Lot#2 | Lot#3 | |
| **Biased HAST | 130C/85%RH (96 Hours) | 77/0 | 77/0 | 77/0 | |
| **Life Test | 125C (500 Hours) | 77/0 | -- | -- | |
| Temperature Cycle | -40/125C (500 Cycles) | 77/0 | 77/0 | 77/0 | |
| Notes: **Preconditioning: MSL 1@260C peak +5/0C | | | | | |

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or to your local Field Sales Representative.

| Location | E-Mail |
|--------------|--|
| USA | PCNAmericasContact@list.ti.com |
| Europe | PCNEuropeContact@list.ti.com |
| Asia Pacific | PCNAsiaContact@list.ti.com |
| Japan | PCNJapanContact@list.ti.com |