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西新宿三井ビルディング

報告書番号：PCN#20091109000  
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お客様各位

日本テキサス・インスツルメンツ株式会社  
営業・技術本部 カスタマドキュメント  
マネージャ 牧 達郎 (牧)

MSP430 一部製品 Cu(銅)線ボンディングワイア変更のご案内

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拝啓 貴社益々ご清栄の事とお喜び申し上げます。平素は弊社製品のご愛顧を賜り、厚く御礼申し上げます。さて、標題の件につきましてご連絡させていただきます。ご査収の程、宜しく願い申し上げます。

今回のお知らせは、変更実施についての最終版の連絡になります。変更の詳細は、次頁以降をご参照下さい。

本通知は、いかなる製品の製造終了に関する状況を変更するものではございません。既に製造終了の連絡をさせていただいている場合には、本通知によって、既通知の最終受注日及び最終出荷日が延長されることはございません。

変更品の出荷につきましては、お客様との早期変更実施の個別契約を締結している場合を除いては、本通知発行日より **30** 日以降に予定いたしております。この通知期間は、弊社品質標準に基づいております。本変更に対するお客様個別のご要求に関しましては、個別契約にて承ります。弊社と合意済みの個別要求につきましては、別途対応させていただきます。担当営業にご確認下さい。

本通知は、通知日前 24 ヶ月以内に本変更対象製品をご購入いただいたお客様に連絡させていただいております。

尚、変更時期につきましては、在庫状況により異なりますので、担当営業にお問い合わせ下さい。また、ご不明な点、ご質問等がございましたら、担当営業或いは[pcn\\_tij@list.ti.com](mailto:pcn_tij@list.ti.com)にお問い合わせ下さい。

以上

## 変更概要

|        |                                                                                  |                                                                               |                                     |                                              |
|--------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------|
| 通知タイプ  | <input type="checkbox"/> Initial notice (Plan)                                   | <input checked="" type="checkbox"/> Final notice                              |                                     |                                              |
| 変更概要   | Design/Specification                                                             | <input type="checkbox"/> Design                                               | <input type="checkbox"/> Electrical | <input type="checkbox"/> Mechanical          |
|        | Wafer Fab                                                                        | <input type="checkbox"/> Site                                                 | <input type="checkbox"/> Process    | <input type="checkbox"/> Material            |
|        | Wafer Bump                                                                       | <input type="checkbox"/> Site                                                 | <input type="checkbox"/> Process    | <input type="checkbox"/> Material            |
|        | <input checked="" type="checkbox"/> Assembly                                     | <input type="checkbox"/> Site                                                 | <input type="checkbox"/> Process    | <input checked="" type="checkbox"/> Material |
|        | Test                                                                             | <input type="checkbox"/> Site                                                 | <input type="checkbox"/> Process    |                                              |
|        | Others                                                                           | <input type="checkbox"/> Packing/Shipping/Labeling <input type="checkbox"/> - |                                     |                                              |
| 変更内容   | MSP430 一部製品 Cu(銅)線ボンディングワイア変更<br>現行 : Au(金)線 ボンディングワイア<br>変更後 : Cu(銅)線 ボンディングワイア |                                                                               |                                     |                                              |
| 対象製品   | 対象製品リスト参照                                                                        |                                                                               |                                     |                                              |
| 変更時期   | 2011 年 2 月中旬の出荷より予定しています。<br>(サンプルは 12 月下旬の出荷より予定しています。)                         |                                                                               |                                     |                                              |
| 品質認定試験 | <input type="checkbox"/> 計画                                                      | <input checked="" type="checkbox"/> 終了                                        |                                     |                                              |
| 製品表示   | <input checked="" type="checkbox"/> 変更無し                                         | <input type="checkbox"/> 変更あり                                                 |                                     |                                              |
| 備考     | —                                                                                |                                                                               |                                     |                                              |

## 変更内容

内容：弊社 ASP-MCU(マイクロコントローラ) MSP430 一部製品について、現行 Au(金)線 ボンディングワイアを使用して製造していますが、ボンディングワイアの機械/電気的特性の向上及び同種製品の組立技術推移に対応する為に、これに替わり、Cu(銅)線 ボンディングワイアへ移行し認定しました。対象製品について、組立サイトの変更はありません。尚、今回の変更で、製品についての互換性(寸法/公差), 外観, 動作特性, 品質, 信頼性への影響はありません。

|           |        |        |
|-----------|--------|--------|
| 変更内容      | 現行     | 変更後    |
| ボンディングワイア | Au(金)線 | Cu(銅)線 |

理由：機械/電気的特性の向上及び同種製品の組立技術推移に対応する為

## 対象製品リスト

| 対象製品名                 |                   |                  |                  |                   |
|-----------------------|-------------------|------------------|------------------|-------------------|
| □: 認定終了品 薄字: 右詰: 未認定品 |                   |                  |                  |                   |
| MSP430A001IPM         | MSP430F1121A1DWR  | MSP430F21111DWR  | MSP430F4121RTDT  | MSP430FG478IPN    |
| MSP430A001IPMR        | MSP430F1121A1PW   | MSP430F21111PW   | MSP430F4132IPM   | MSP430FG478IPNR   |
| MSP430A002IPM         | MSP430F1121A1PWR  | MSP430F21111PWR  | MSP430F4132IPMR  | MSP430FG479IPN    |
| MSP430A002IPMR        | MSP430F1121A1RGE  | MSP430F21111RGER | MSP430F4132IRGZ  | MSP430FG479IPNR   |
| MSP430A003IPW         | MSP430F1121A1RGER | MSP430F21111RGET | MSP430F4132IRGZR | MSP430FW423IPM    |
| MSP430A003IPWR        | MSP430F1121A1RGET | MSP430F2111TDGV  | MSP430F4132IRGZT | MSP430FW423IPMR   |
| MSP430A004IPW         | MSP430F11221DW    | MSP430F2111TDGVR | MSP430F4131PM    | MSP430FW425IPM    |
| MSP430A004IPWR        | MSP430F11221DWR   | MSP430F2111TDW   | MSP430F4131PMR   | MSP430FW425IPMR   |
| MSP430A005IPW         | MSP430F11221PW    | MSP430F2111TDWR  | MSP430F4131RTD   | MSP430FW427IPM    |
| MSP430A005IPWR        | MSP430F11221PWR   | MSP430F2111TPW   | MSP430F4131RTDR  | MSP430FW427IPMR   |
| MSP430A006IPW         | MSP430F11221RHBR  | MSP430F2111TPWR  | MSP430F4131RTDT  | MSP430T100IPM     |
| MSP430A006IPWR        | MSP430F11221RHBT  | MSP430F2111TRGER | MSP430F4152IPM   | MSP430T101IPM     |
| MSP430A0061RTDR       | MSP430F11321DW    | MSP430F2111TRGET | MSP430F4152IPMR  | MSP430T101IPMR    |
| MSP430A0061RTDT       | MSP430F11321DWR   | MSP430F21121PW   | MSP430F4152IRGZ  | MSP430T103IPM     |
| MSP430A007IPW         | MSP430F11321PW    | MSP430F21121PWR  | MSP430F4152IRGZR | MSP430T103IPMR    |
| MSP430A007IPWR        | MSP430F11321PWR   | MSP430F21121RHBR | MSP430F4152IRGZT | MSP430TC0701PZ    |
| MSP430A0071RTDR       | MSP430F11321RHBR  | MSP430F21121RHBT | MSP430F4151PM    | MSP430TEXAS21PEG  |
| MSP430A0071RTDT       | MSP430F11321RHBT  | MSP430F2112TPW   | MSP430F4151PMR   | MSP430TEXAS21PEGR |
| MSP430A008IPN         | MSP430F12221DW    | MSP430F2112TPWR  | MSP430F4151RTDR  | MSP430TEXAS21PM   |
| MSP430A009IPM         | MSP430F12221DWR   | MSP430F2112TRHBR | MSP430F4151RTDT  | MSP430TEXAS21PMR  |
| MSP430A009IPMR        | MSP430F12221PW    | MSP430F2112TRHBT | MSP430F4171PM    | MSP430U227IPMR    |
| MSP430A010IPM         | MSP430F12221PWR   | MSP430F21211DGV  | MSP430F4171PMR   | MSP430U2591DWR    |
| MSP430A010IPMR        | MSP430F12221RHBR  | MSP430F21211DGVR | MSP430F4171RTDR  | MSP430U266IPMR    |

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|                  |                    |                  |                    |                   |
|------------------|--------------------|------------------|--------------------|-------------------|
| MSP430A011IPMR   | MSP430F1222IRHBT   | MSP430F2121IDW   | MSP430F4171RTDT    | MSP430U273IPWR    |
| MSP430A012IDW    | MSP430F122IDW      | MSP430F2121IDWR  | MSP430F4230IDL     | MSP430U276IPWR    |
| MSP430A012IDWR   | MSP430F122IDWR     | MSP430F2121IPW   | MSP430F4230IDLR    | MSP430U286IPWR    |
| MSP430A013IPM    | MSP430F122IPW      | MSP430F2121IPWR  | MSP430F423AIPM     | MSP430U287IPMR    |
| MSP430A013IPMR   | MSP430F122IPWR     | MSP430F2121IRGER | MSP430F423AIPMR    | MSP430U288IPMR    |
| MSP430A014IPMR   | MSP430F122IRHBR    | MSP430F2121IRGET | MSP430F423IPM      | MSP430U293IPWR    |
| MSP430A015IPM    | MSP430F122IRHBT    | MSP430F2121TDGV  | MSP430F423IPMR     | MSP430U295IPMR    |
| MSP430A015IPMR   | MSP430F1232IDW     | MSP430F2121TDGVR | MSP430F4231RTDR    | MSP430U299IPWR    |
| MSP430A017IPN    | MSP430F1232IDWR    | MSP430F2121TDW   | MSP430F4231RTDT    | MSP430U300IPMR    |
| MSP430A018IPN    | MSP430F1232IPW     | MSP430F2121TDWR  | MSP430F4250IDL     | MSP430U307IPM     |
| MSP430A021IPW    | MSP430F1232IPWR    | MSP430F2121TPW   | MSP430F4250IDLR    | MSP430U309IPMR    |
| MSP430A021IRRSAR | MSP430F1232IRHBR   | MSP430F2121TPWR  | MSP430F4250IRGZR   | MSP430U310IPMR    |
| MSP430A023IPM    | MSP430F1232IRHBT   | MSP430F2121TRGER | MSP430F4250IRGZT   | MSP430U311IPMR    |
| MSP430A023IPMR   | MSP430F123IDW      | MSP430F2121TRGET | MSP430F425AIPM     | MSP430U315IPMR    |
| MSP430A024IPM    | MSP430F123IDWR     | MSP430F2122IPW   | MSP430F425AIPMR    | MSP430U320IDWR    |
| MSP430A024IPMR   | MSP430F123IPW      | MSP430F2122IPWR  | MSP430F425IPM      | MSP430U321IPMR    |
| MSP430A025IPM    | MSP430F123IPWR     | MSP430F2122IRHBR | MSP430F425IPMR     | MSP430U323IPZ     |
| MSP430A025IPMR   | MSP430F123IPWR-HYD | MSP430F2122IRHBT | MSP430F4251RTDR    | MSP430U324IPZR    |
| MSP430A026IPM    | MSP430F123IRHBR    | MSP430F2122TPW   | MSP430F4251RTDT    | MSP430U329IPZ     |
| MSP430A026IPMR   | MSP430F123IRHBT    | MSP430F2122TPWR  | MSP430F4260IDL     | MSP430U329IPZR    |
| MSP430A027IPM    | MSP430F133IPAG     | MSP430F2122TRHBR | MSP430F4260IDLR    | MSP430U332IPMR    |
| MSP430A027IPMR   | MSP430F133IPAGR    | MSP430F2122TRHBT | MSP430F4260IRGZR   | MSP430U334IPZR    |
| MSP430A028IPM    | MSP430F133IPM      | MSP430F2131IDGV  | MSP430F4260IRGZT   | MSP430U335IPWR    |
| MSP430A028IPMR   | MSP430F133IPMR     | MSP430F2131IDGVR | MSP430F4270IDL     | MSP430U337IPW     |
| MSP430A029IPM    | MSP430F1331RTDR    | MSP430F2131IDW   | MSP430F4270IDLR    | MSP430U337IPWR    |
| MSP430A029IPMR   | MSP430F1331RTDT    | MSP430F2131IDWR  | MSP430F4270IRGZR   | MSP430U339IPWR    |
| MSP430A030IPW    | MSP430F135IPAG     | MSP430F2131IPW   | MSP430F4270IRGZT   | MSP430U340IPM     |
| MSP430A030IPWR   | MSP430F135IPAGR    | MSP430F2131IPWR  | MSP430F427AIPM     | MSP430U341IPMR    |
| MSP430A030IRRSAR | MSP430F135IPM      | MSP430F2131IRGER | MSP430F427AIPMR    | MSP430U343IPWR    |
| MSP430A030IRSAT  | MSP430F135IPMR     | MSP430F2131IRGET | MSP430F427IPM      | MSP430U344IPWR    |
| MSP430A034IPW    | MSP430F1351RTDR    | MSP430F2131TDGV  | MSP430F427IPMR     | MSP430U345IPMR    |
| MSP430A034IPWR   | MSP430F1351RTDT    | MSP430F2131TDGVR | MSP430F4271RTDR    | MSP430V100IPWR    |
| MSP430A034IRRSAR | MSP430F1471IPM     | MSP430F2131TDW   | MSP430F4271RTDT    | MSP430V102IPM     |
| MSP430A034IRSAT  | MSP430F1471IPMR    | MSP430F2131TDWR  | MSP430F4351IPN     | MSP430V103IPM     |
| MSP430A038IRRSAR | MSP430F1471IPMRG4  | MSP430F2131TPW   | MSP430F4351IPNR    | MSP430V103IPMR    |
| MSP430A038IRSAT  | MSP430F14711RTDR   | MSP430F2131TPWR  | MSP430F4351IPZ     | MSP430V104IPM     |
| MSP430A039IRHBR  | MSP430F14711RTDT   | MSP430F2131TRGER | MSP430F4351IPZR    | MSP430V1061RTDR   |
| MSP430A039IRHBT  | MSP430F147IPAG     | MSP430F2131TRGET | MSP430F435IPN      | MSP430V1061RTDRG4 |
| MSP430A040IRRSAR | MSP430F147IPAGR    | MSP430F2132IPW   | MSP430F435IPNR     | MSP430V107IPM     |
| MSP430A040IRSAT  | MSP430F147IPM      | MSP430F2132IPWR  | MSP430F435IPNR24   | MSP430V108IDLR    |
| MSP430A041IPM    | MSP430F147IPMR     | MSP430F2132IRHB  | MSP430F435IPZ      | MSP430V109IPZ     |
| MSP430A041IPMR   | MSP430F147IPMRG4   | MSP430F2132IRHBR | MSP430F435IPZR     | MSP430V109IPZR    |
| MSP430A0411RTD   | MSP430F147IPMR-KAM | MSP430F2132IRHBT | MSP430F4361IPN     | MSP430V110IPMR    |
| MSP430A0411RTDR  | MSP430F1471RTDR    | MSP430F2132TPW   | MSP430F4361IPNR    | MSP430V111IPM     |
| MSP430A042IRHAR  | MSP430F1471RTDT    | MSP430F2132TPWR  | MSP430F4361IPNRKAM | MSP430V111IPMR    |
| MSP430A042IRHAT  | MSP430F1481IPM     | MSP430F2132TRHBR | MSP430F4361IPZ     | MSP430V112IRHAR   |
| MSP430A043IRGER  | MSP430F1481IPMR    | MSP430F2132TRHBT | MSP430F4361IPZR    | MSP430V112IRHAT   |
| MSP430A043IRGET  | MSP430F14811RTDR   | MSP430F2232IDA   | MSP430F436IPN      | MSP430V114IPM     |
| MSP430A044IPM    | MSP430F14811RTDRG4 | MSP430F2232IDAR  | MSP430F436IPNR     | MSP430V115IPNR    |
| MSP430A044IPMR   | MSP430F14811RTDT   | MSP430F2232IRHAR | MSP430F436IPNR24   | MSP430V116IDGVR   |
| MSP430A045IPWR   | MSP430F148IPAG     | MSP430F2232IRHAT | MSP430F436IPZ      | MSP430V118IPM     |
| MSP430A046IPZ    | MSP430F148IPAGR    | MSP430F2232TDA   | MSP430F436IPZR     | MSP430V118IPMR    |
| MSP430A046IPZR   | MSP430F148IPM      | MSP430F2232TDAR  | MSP430F4371IPN     | MSP430V1191RTDR   |
| MSP430A047IPZ    | MSP430F148IPMG4    | MSP430F2232TRHAR | MSP430F4371IPNR    | MSP430V1201RTDR   |
| MSP430A047IPZR   | MSP430F148IPMR     | MSP430F2232TRHAT | MSP430F4371IPZ     | MSP430V121IRHAR   |
| MSP430A048IPM    | MSP430F1481RTDR    | MSP430F2234IDA   | MSP430F4371IPZR    | MSP430V122IPMR    |
| MSP430A048IPMR   | MSP430F1481RTDT    | MSP430F2234IDAR  | MSP430F4371IPN     | MSP430V123IPMR    |
| MSP430A049IPM    | MSP430F1491IPM     | MSP430F2234IRHAR | MSP430F4371IPNR    | MSP430V124IPWR    |
| MSP430A049IPMR   | MSP430F1491IPMG4   | MSP430F2234IRHAT | MSP430F4371IPZ     | MSP430V125DTPWR   |
| MSP430A050IPM    | MSP430F1491IPMR    | MSP430F2234TDA   | MSP430F4371IPZR    | MSP430V125TPW     |
| MSP430A050IPMR   | MSP430F1491IPMRG4  | MSP430F2234TDAR  | MSP430F4471IPZ     | MSP430V125TPWR    |
| MSP430A051IPM    | MSP430F14911RTDR   | MSP430F2234TRHAR | MSP430F4471IPZR    | MSP430V126IRHAR   |
| MSP430A051IPMR   | MSP430F14911RTDT   | MSP430F2234TRHAT | MSP430F4481IPZ     | MSP430V126IRHARG4 |
| MSP430A052IPW    | MSP430F14911RTDTG4 | MSP430F2252IDA   | MSP430F4481IPZR    | MSP430V126IRHAT   |
| MSP430A052IPWR   | MSP430F149IPAG     | MSP430F2252IDAR  | MSP430F4481IPZ     | MSP430V127IPMR    |
| MSP430A053IPW    | MSP430F149IPAGR    | MSP430F2252IRHAR | MSP430F4481IPZR    | MSP430V129IPW     |

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|-----------------|--------------------|------------------|-------------------|-------------------|
| MSP430A053IPWR  | MSP430F149IPM      | MSP430F2252IRHAT | MSP430F4491IPZ    | MSP430V129IPWR    |
| MSP430A054IPN   | MSP430F149IPMG4    | MSP430F2252TDA   | MSP430F4491IPZR   | MSP430V130IRGZR   |
| MSP430A055IPM   | MSP430F149IPMR     | MSP430F2252TDAR  | MSP430F4491PZ     | MSP430V131IPAGR   |
| MSP430A056IPM   | MSP430F149IPMRG4   | MSP430F2252TRHAR | MSP430F4491PZR    | MSP430V132IRHAR   |
| MSP430A057IPMR  | MSP430F149IPMR-KAM | MSP430F2252TRHAT | MSP430F46161IPZ   | MSP430V132IRHARG4 |
| MSP430A058IRHBR | MSP430F149IRTDR    | MSP430F2254IDA   | MSP430F46161IPZR  | MSP430V133IPWR    |
| MSP430A059IPM   | MSP430F149IRTDG4   | MSP430F2254IDAR  | MSP430F46161PZ    | MSP430V134IPWR    |
| MSP430A059IPMR  | MSP430F149IRTDT    | MSP430F2254IRHAR | MSP430F46161PZR   | MSP430V135IPN     |
| MSP430A059IRTDR | MSP430F149IRTDG4   | MSP430F2254IRHAT | MSP430F46171IPZ   | MSP430V135IPNR    |
| MSP430A059IRTDT | MSP430F155IPM      | MSP430F2254TDA   | MSP430F46171IPZR  | MSP430V136IDLR    |
| MSP430A061IDAR  | MSP430F155IPMR     | MSP430F2254TDAR  | MSP430F46171PZ    | MSP430V137IPAGR   |
| MSP430A062IPZ   | MSP430F155IRTDR    | MSP430F2254TRHAR | MSP430F46171PZR   | MSP430V138TDA     |
| MSP430A062IPZR  | MSP430F155IRTDT    | MSP430F2254TRHAT | MSP430F46181IPZ   | MSP430V138TRHAR   |
| MSP430A064IPM   | MSP430F156IPM      | MSP430F2272IDA   | MSP430F46181IPZR  | MSP430V138TRHAT   |
| MSP430A065IRBHR | MSP430F156IPMR     | MSP430F2272IDAR  | MSP430F46181PZ    | MSP430V142IPMR    |
| MSP430A066IPN   | MSP430F156IRTDR    | MSP430F2272IRHAR | MSP430F46181PZR   | MSP430V143IPM     |
| MSP430A066IPNR  | MSP430F156IRTDT    | MSP430F2272IRHAT | MSP430F46191IPZ   | MSP430V144IRHBR   |
| MSP430A066IPZ   | MSP430F157IPM      | MSP430F2272TDA   | MSP430F46191IPZR  | MSP430V145IPWR    |
| MSP430A066IPZR  | MSP430F157IPMR     | MSP430F2272TDAR  | MSP430F46191PZ    | MSP430V146IPMR    |
| MSP430A067IRGER | MSP430F157IRTDR    | MSP430F2272TRHAR | MSP430F46191PZR   | MSP430V147IPWR    |
| MSP430A068IRHAR | MSP430F157IRTDT    | MSP430F2272TRHAT | MSP430F47126IPZ   | MSP430V148IN      |
| MSP430A069IPZ   | MSP430F1610IPM     | MSP430F2274IDA   | MSP430F47126IPZR  | MSP430V151IPMR    |
| MSP430A076TPMR  | MSP430F1610IPMR    | MSP430F2274IDAR  | MSP430F47127IPZ   | MSP430V152IDWR    |
| MSP430A078IN    | MSP430F1610IRTDR   | MSP430F2274IRHAR | MSP430F47127IPZR  | MSP430V153IRHA    |
| MSP430A078IPW   | MSP430F1610IRTDT   | MSP430F2274IRHAT | MSP430F47163IPZ   | MSP430V153IRHAR   |
| MSP430A078IPWR  | MSP430F1611IPM     | MSP430F2274TDA   | MSP430F47163IPZR  | MSP430V155IPNR    |
| MSP430A078IRSAR | MSP430F1611IPMR    | MSP430F2274TDAR  | MSP430F47166IPZ   | MSP430V156IPN     |
| MSP430A078IRSAT | MSP430F1611IRTDR   | MSP430F2274TRHAR | MSP430F47166IPZR  | MSP430V157IPN     |
| MSP430A078TN    | MSP430F1611IRTDT   | MSP430F2274TRHAT | MSP430F47167IPZ   | MSP430V158IPM     |
| MSP430A078TPW   | MSP430F1612IPM     | MSP430F2330IRHAR | MSP430F47167IPZR  | MSP430V159IRHAR   |
| MSP430A078TPWR  | MSP430F1612IPMR    | MSP430F2330IRHAT | MSP430F47173IPZ   | MSP430V160IPMR    |
| MSP430A078TRSAR | MSP430F1612IRTDR   | MSP430F2330TRHAR | MSP430F47173IPZR  | MSP430V162IPMR    |
| MSP430A078TRSAT | MSP430F1612IRTDT   | MSP430F2330TRHAT | MSP430F47176IPZ   | MSP430V163IPMR    |
| MSP430A079IPN   | MSP430F167IPM      | MSP430F233TPM    | MSP430F47176IPZR  | MSP430V164IRGER   |
| MSP430A079IPNR  | MSP430F167IPMR     | MSP430F233TPMR   | MSP430F47177IPZ   | MSP430V164IRGERG4 |
| MSP430A080IPM   | MSP430F167IRTDR    | MSP430F233TRGC   | MSP430F47177IPZR  | MSP430V165IPZR    |
| MSP430A080IPMR  | MSP430F167IRTDT    | MSP430F233TRGCR  | MSP430F47183IPZ   | MSP430V167IDAR    |
| MSP430A081IPW   | MSP430F168IPM      | MSP430F233TRGCT  | MSP430F47183IPZR  | MSP430V168IPNR    |
| MSP430A081IPWR  | MSP430F168IPMR     | MSP430F2350IRHAR | MSP430F47186IPZ   | MSP430V169IPZ     |
| MSP430A086IPZ   | MSP430F168IRTDR    | MSP430F2350IRHAT | MSP430F47186IPZR  | MSP430V169IPZR    |
| MSP430A086IPZR  | MSP430F168IRTDT    | MSP430F2350TRHAR | MSP430F47187IPZ   | MSP430V170IRTDR   |
| MSP430A088IPWR  | MSP430F169IPM      | MSP430F2350TRHAT | MSP430F47187IPZR  | MSP430V172TRGCR   |
| MSP430A090IPMR  | MSP430F169IPMR     | MSP430F235TPM    | MSP430F47193IPZ   | MSP430V174IPM     |
| MSP430A091IPMR  | MSP430F169IRTDR    | MSP430F235TPMR   | MSP430F47193IPZR  | MSP430V175IPMR    |
| MSP430A092IPMR  | MSP430F169IRTDT    | MSP430F235TRGC   | MSP430F47196IPZ   | MSP430V176IDAR    |
| MSP430A093IPMR  | MSP430F2001IN      | MSP430F235TRGCR  | MSP430F47196IPZR  | MSP430V178IRGCR   |
| MSP430A094IPMR  | MSP430F2001IPW     | MSP430F235TRGCT  | MSP430F47197IPZ   | MSP430V179IPMR    |
| MSP430A095IPN   | MSP430F2001IPWR    | MSP430F2370IRHA  | MSP430F47197IPZR  | MSP430V180IPZR    |
| MSP430A097IPM   | MSP430F2001IRSAR   | MSP430F2370IRHAR | MSP430F4771PN     | MSP430V182IPMR    |
| MSP430A099IPMR  | MSP430F2001IRSAT   | MSP430F2370IRHAT | MSP430F4771PNR    | MSP430V183IPMR    |
| MSP430A100IPMR  | MSP430F2001TN      | MSP430F2370TRHA  | MSP430F4783IPZ    | MSP430V184IRGCR   |
| MSP430A101IPMR  | MSP430F2001TPW     | MSP430F2370TRHAR | MSP430F4783IPZR   | MSP430V185IPWR    |
| MSP430A102IPMR  | MSP430F2001TPWR    | MSP430F2370TRHAT | MSP430F4784IPZ    | MSP430V186IPM     |
| MSP430A103IPMR  | MSP430F2001TRSAR   | MSP430F2410TPM   | MSP430F4784IPZR   | MSP430V187IPMR    |
| MSP430A104IPMR  | MSP430F2001TRSAT   | MSP430F2410TPMR  | MSP430F4781PN     | MSP430V191IPZR    |
| MSP430A105IPMR  | MSP430F2002IN      | MSP430F2410TRGC  | MSP430F4781PNR    | MSP430V192IRHAR   |
| MSP430A106IPMR  | MSP430F2002IPW     | MSP430F2410TRGCR | MSP430F4793IPZ    | MSP430V194IPMR    |
| MSP430A107IPMR  | MSP430F2002IPWR    | MSP430F2410TRGCT | MSP430F4793IPZR   | MSP430V195IPMR    |
| MSP430A108IPMR  | MSP430F2002IRSAR   | MSP430F2416TPM   | MSP430F4794IPZ    | MSP430V196IPWR    |
| MSP430A108IPN   | MSP430F2002IRSAT   | MSP430F2416TPMR  | MSP430F4794IPZR   | MSP430V197IPMR    |
| MSP430A109IPMR  | MSP430F2002TN      | MSP430F2416TPN   | MSP430F4794SNIPZ  | MSP430V198IPMR    |
| MSP430A110IPMR  | MSP430F2002TPW     | MSP430F2416TPNR  | MSP430F4794SNIPZR | MSP430V199IDAR    |
| MSP430A111IPMR  | MSP430F2002TPWR    | MSP430F2417TPM   | MSP430F4796IPZ    | MSP430V200IPMR    |
| MSP430A112IPMR  | MSP430F2002TRSAR   | MSP430F2417TPMR  | MSP430F4796IPZR   | MSP430V201IRGZR   |
| MSP430A113IPMR  | MSP430F2002TRSAT   | MSP430F2417TPN   | MSP430F4797IPZ    | MSP430V202IPM     |
| MSP430A114IPMR  | MSP430F2003IN      | MSP430F2417TPNR  | MSP430F4797IPZR   | MSP430V203IRGER   |

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|-------------------|------------------|------------------|-------------------|-----------------|
| MSP430A115IPMR    | MSP430F2003IPW   | MSP430F2418TPM   | MSP430F479IPN     | MSP430V204TRGCR |
| MSP430A116IPMR    | MSP430F2003IPWR  | MSP430F2418TPMR  | MSP430F479IPNR    | MSP430V205IRHAR |
| MSP430A117IPMR    | MSP430F2003IRSAR | MSP430F2418TPN   | MSP430FE4232IPM   | MSP430V207IPZR  |
| MSP430A118IPMR    | MSP430F2003IRSAT | MSP430F2418TPNR  | MSP430FE4232IPMR  | MSP430V208IRGZR |
| MSP430A119IPMR    | MSP430F2003TN    | MSP430F2419TPM   | MSP430FE423AIPM   | MSP430V209TPMR  |
| MSP430A120IPMR    | MSP430F2003TPW   | MSP430F2419TPMR  | MSP430FE423AIPMR  | MSP430V210TRGCR |
| MSP430A121IPMR    | MSP430F2003TPWR  | MSP430F2419TPN   | MSP430FE423IPM    | MSP430V211IRHAR |
| MSP430A122IPMR    | MSP430F2003TRSAR | MSP430F2419TPNR  | MSP430FE423IPMR   | MSP430V212IPWR  |
| MSP430A123IPMR    | MSP430F2003TRSAT | MSP430F2471TPM   | MSP430FE4242IPM   | MSP430V214IPWR  |
| MSP430A124IPMR    | MSP430F2011IN    | MSP430F2471TPMR  | MSP430FE4242IPMR  | MSP430V221IPMR  |
| MSP430A125IPZR    | MSP430F2011IPW   | MSP430F2471TRGC  | MSP430FE4252IPM   | MSP430V222IPMR  |
| MSP430A126IPMR    | MSP430F2011IPWR  | MSP430F2471TRGCR | MSP430FE4252IPMR  | MSP430V224IPWR  |
| MSP430A127IPMR    | MSP430F2011IRSAR | MSP430F2471TRGCT | MSP430FE425AIPM   | MSP430V225IPMR  |
| MSP430A128IPMR    | MSP430F2011IRSAT | MSP430F247TPM    | MSP430FE425AIPMR  | MSP430V227IPMR  |
| MSP430A129IPMR    | MSP430F2011TN    | MSP430F247TPMR   | MSP430FE425IPM    | MSP430V228IPMR  |
| MSP430A130IN      | MSP430F2011TPW   | MSP430F247TRGC   | MSP430FE425IPMR   | MSP430V229IRSAR |
| MSP430A130IPW     | MSP430F2011TPWR  | MSP430F247TRGCR  | MSP430FE4272IPM   | MSP430V230IPMR  |
| MSP430A130IPWR    | MSP430F2011TRSAR | MSP430F247TRGCT  | MSP430FE4272IPMR  | MSP430V231IPZR  |
| MSP430A130IRSAR   | MSP430F2011TRSAT | MSP430F2481TPM   | MSP430FE427AIPM   | MSP430V233IPWR  |
| MSP430A130IRSAT   | MSP430F2012IN    | MSP430F2481TPMR  | MSP430FE427AIPMR  | MSP430V234IPZR  |
| MSP430A130TN      | MSP430F2012IPW   | MSP430F2481TRGC  | MSP430FE427IPM    | MSP430V235IPMR  |
| MSP430A130TPW     | MSP430F2012IPWR  | MSP430F2481TRGCR | MSP430FE427IPMR   | MSP430V236TPMR  |
| MSP430A130TPWR    | MSP430F2012IRSAR | MSP430F2481TRGCT | MSP430FE4481IPZ   | MSP430V237TDAR  |
| MSP430A130TRSAR   | MSP430F2012IRSAT | MSP430F248TPM    | MSP430FE4481IPZR  | MSP430V239IDWR  |
| MSP430A130TRSAT   | MSP430F2012TN    | MSP430F248TPMR   | MSP430FE4482IPZ   | MSP430V240TRHAR |
| MSP430A131IPZR    | MSP430F2012TPW   | MSP430F248TRGC   | MSP430FE4482IPZR  | MSP430V241IPMR  |
| MSP430A135IPZ     | MSP430F2012TPWR  | MSP430F248TRGCR  | MSP430FE4491IPZ   | MSP430V245IDWR  |
| MSP430A136IPZ     | MSP430F2012TRSAR | MSP430F248TRGCT  | MSP430FE4491IPZR  | MSP430V247IPWR  |
| MSP430A136IPZR    | MSP430F2012TRSAT | MSP430F2491TPM   | MSP430FE4492IPZ   | MSP430V248IPNR  |
| MSP430A137IPZ     | MSP430F2013IN    | MSP430F2491TPMR  | MSP430FE4492IPZR  | MSP430V250IPZ   |
| MSP430A137IPZR    | MSP430F2013IPW   | MSP430F2491TRGC  | MSP430FG4250IDL   | MSP430V250IPZR  |
| MSP430A138IPNR    | MSP430F2013IPWR  | MSP430F2491TRGCR | MSP430FG4250IDL   | MSP430V251IDAR  |
| MSP430A139IPZR    | MSP430F2013IRSAR | MSP430F2491TRGCT | MSP430FG4250IRGZR | MSP430V253IRSAR |
| MSP430A140IPMR    | MSP430F2013IRSAT | MSP430F2491TRHAR | MSP430FG4250IRGZT | MSP430V254IPZR  |
| MSP430A141IRSAR   | MSP430F2013TN    | MSP430F249TPM    | MSP430FG4260IDL   | MSP430V255IPWR  |
| MSP430A142IRHAR   | MSP430F2013TPW   | MSP430F249TPMR   | MSP430FG4260IDL   | MSP430V256IRSAR |
| MSP430A142IRHAT   | MSP430F2013TPWR  | MSP430F249TRGC   | MSP430FG4260IRGZR | MSP430V257IPZR  |
| MSP430CG4619IPZ   | MSP430F2013TRSAR | MSP430F249TRGCR  | MSP430FG4260IRGZT | MSP430V258IRHBR |
| MSP430CG4619IPZR  | MSP430F2013TRSAT | MSP430F249TRGCT  | MSP430FG4270IDL   | MSP430V259IRGZR |
| MSP430F1101AIDGV  | MSP430F2101IDGV  | MSP430F2616TPM   | MSP430FG4270IDL   | MSP430V260IRHAR |
| MSP430F1101AIDGVR | MSP430F2101IDGVR | MSP430F2616TPMR  | MSP430FG4270IRGZR | MSP430V261IRHAR |
| MSP430F1101AIDW   | MSP430F2101IDW   | MSP430F2616TPN   | MSP430FG4270IRGZT | MSP430V262IPMR  |
| MSP430F1101AIDWR  | MSP430F2101IDWR  | MSP430F2616TPNR  | MSP430FG4371PN    | MSP430V263IPZR  |
| MSP430F1101AIPW   | MSP430F2101IPW   | MSP430F2617TPM   | MSP430FG4371PNR   | MSP430V265TPMR  |
| MSP430F1101AIPWR  | MSP430F2101IPWR  | MSP430F2617TPMR  | MSP430FG4381PN    | MSP430V266TPNR  |
| MSP430F1101AIRGER | MSP430F2101IRGER | MSP430F2617TPN   | MSP430FG4381PNR   | MSP430V267IPMR  |
| MSP430F1101AIRGET | MSP430F2101IRGET | MSP430F2617TPNR  | MSP430FG4391PN    | MSP430V268IPMR  |
| MSP430F1111AIDGV  | MSP430F2101IDGV  | MSP430F2618TPM   | MSP430FG4391PNR   | MSP430V270IPMR  |
| MSP430F1111AIDGVR | MSP430F2101IDGVR | MSP430F2618TPMR  | MSP430FG4616IPZ   | MSP430V271IPMR  |
| MSP430F1111AIDW   | MSP430F2101IDW   | MSP430F2618TPN   | MSP430FG4616IPZR  | MSP430V272IPNR  |
| MSP430F1111AIDWR  | MSP430F2101IDWR  | MSP430F2618TPNR  | MSP430FG4617IPZ   | MSP430V274IPMR  |
| MSP430F1111AIPW   | MSP430F2101TPW   | MSP430F2619TPM   | MSP430FG4617IPZR  | MSP430V276IPMR  |
| MSP430F1111AIPWR  | MSP430F2101TPWR  | MSP430F2619TPMR  | MSP430FG4618IPZ   | MSP430V277IRSAR |
| MSP430F1111AIRGER | MSP430F2101TRGER | MSP430F2619TPN   | MSP430FG4618IPZR  | MSP430V278IRSAR |
| MSP430F1111AIRGET | MSP430F2101TRGET | MSP430F2619TPNR  | MSP430FG4619IPZ   | MSP430V279IPMR  |
| MSP430F1121AIDGV  | MSP430F2111IDGV  | MSP430F412IPM    | MSP430FG4619IPZR  | SN0309070PMR    |
| MSP430F1121AIDGVR | MSP430F2111IDGVR | MSP430F412IPMR   | MSP430FG4771PN    | SN0807028IPZR   |
| MSP430F1121AIDW   | MSP430F2111IDW   | MSP430F412IRTD   | MSP430FG4771PNR   |                 |

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信頼性試験

信頼性試験結果

信頼性試験 - 試料構成詳細

|                |                 |                    |                 |
|----------------|-----------------|--------------------|-----------------|
| Qual Device:   | MSP430F2132PWR  | -                  | -               |
| Assembly Site: | MLA             | Package/Code/Pins: | TSSOP/PW/28     |
| Die Attach:    | HITACHI EN4088Z | Mold Compound:     | Nitto GE1030MDP |
| MSL:           | JEDEC L-1/260C  | Lead Finish:       | NiPdAu          |

信頼性試験結果

| Reliability Test  | Condition / Duration | Sample Size/ Fails |
|-------------------|----------------------|--------------------|
| Manufacturability | -                    | Approved           |
| Autoclave         | 121C, 96hrs          | 231/0              |
| Temp Cycle        | -65C/150C, 500Cyc    | 231/0              |
| High Temp Bake    | 170C, 420hrs         | 231/0              |

信頼性試験結果

信頼性試験 - 試料構成詳細

|                |                  |                    |                      |
|----------------|------------------|--------------------|----------------------|
| Qual Device:   | MSP430F2370IRHAR | -                  | -                    |
| Assembly Site: | MLA              | Package/Code/Pins: | QFN/RHA/40           |
| Die Attach:    | ABLESTIK 8290    | Mold Compound:     | Sumitomo EME-G770HCD |
| MSL:           | JEDEC L-3/260C   | Lead Finish:       | NiPdAu               |

信頼性試験結果

| Reliability Test  | Condition / Duration | Sample Size/ Fails |
|-------------------|----------------------|--------------------|
| Manufacturability | -                    | Approved           |
| Autoclave         | 121C, 96hrs          | 231/0              |
| Temp Cycle        | -65C/150C, 500Cyc    | 231/0              |
| High Temp Bake    | 170C, 420hrs         | 231/0              |

信頼性試験結果

信頼性試験 - 試料構成詳細

|                |                  |                    |                 |
|----------------|------------------|--------------------|-----------------|
| Qual Device:   | MSP430F2274IDA   | -                  | -               |
| Assembly Site: | TAI              | Package/Code/Pins: | TSSOP/DA/38     |
| Die Attach:    | HITACHI EN-4088Z | Mold Compound:     | Nitto GE1030MDP |
| MSL:           | JEDEC L-2/260C   | -                  | -               |

信頼性試験結果

| Reliability Test  | Condition / Duration | Sample Size/ Fails |
|-------------------|----------------------|--------------------|
| Manufacturability | -                    | Approved           |
| Autoclave         | 121C, 96hrs          | 231/0              |
| Temp Cycle        | -65C/150C, 500Cyc    | 231/0              |
| High Temp Bake    | 170C, 420hrs         | 200/0              |

信頼性試験結果

信頼性試験 - 試料構成詳細

|                |                    |                    |                      |
|----------------|--------------------|--------------------|----------------------|
| Qual Device:   | MSP430FG4619IPZ    | -                  | -                    |
| Assembly Site: | TAI                | Package/Code/Pins: | LQFP/PZ/100          |
| Die Attach:    | HITACHI EN4085S2K3 | Mold Compound:     | HITACHI CEL9200HF-13 |
| MSL:           | JEDEC L-3/260C     | -                  | -                    |

信頼性試験結果

| Reliability Test  | Condition / Duration | Sample Size/ Fails |
|-------------------|----------------------|--------------------|
| Manufacturability | -                    | Approved           |
| Autoclave         | 121C, 96hrs          | 231/0              |
| Temp Cycle        | -65C/150C, 500Cyc    | 231/0              |
| High Temp Bake    | 170C, 420hrs         | 231/0              |

信頼性試験結果

信頼性試験 - 試料構成詳細

|                |                    |                    |                      |
|----------------|--------------------|--------------------|----------------------|
| Qual Device:   | MSP430F47197IPZ    | -                  | -                    |
| Assembly Site: | TAI                | Package/Code/Pins: | LQFP/PZ/100          |
| Die Attach:    | HITACHI EN4085S2K3 | Mold Compound:     | HITACHI CEL9200HF-13 |
| MSL:           | JEDEC L-3/260C     | -                  | -                    |

信頼性試験結果

| Reliability Test  | Condition / Duration | Sample Size/ Fails |
|-------------------|----------------------|--------------------|
| Manufacturability | -                    | Approved           |

| 信頼性試験結果           |                      |                    |                      |
|-------------------|----------------------|--------------------|----------------------|
| 信頼性試験 - 試料構成詳細    |                      |                    |                      |
| Qual Device:      | MSP430F2619TPN       | -                  | -                    |
| Assembly Site:    | TAI                  | Package/Code/Pins: | LQFP/PN/80           |
| Die Attach:       | HITACHI EN4085S2K3   | Mold Compound:     | HITACHI CEL9200HF-13 |
| MSL:              | JEDEC L-3/260C       | -                  | -                    |
| 信頼性試験結果           |                      |                    |                      |
| Reliability Test  | Condition / Duration | Sample Size/ Fails |                      |
| Manufacturability | -                    | Approved           |                      |

| 信頼性試験結果           |                      |                    |                      |
|-------------------|----------------------|--------------------|----------------------|
| 信頼性試験 - 試料構成詳細    |                      |                    |                      |
| Qual Device:      | MSP430TEXAS2IPMR     | -                  | -                    |
| Assembly Site:    | TAI                  | Package/Code/Pins: | LQFP/PM/64           |
| Die Attach:       | HITACHI EN4085S2K3   | Mold Compound:     | HITACHI CEL9200HF-13 |
| MSL:              | JEDEC L-3/260C       | -                  | -                    |
| 信頼性試験結果           |                      |                    |                      |
| Reliability Test  | Condition / Duration | Sample Size/ Fails |                      |
| Manufacturability | -                    | Approved           |                      |