

**CHANGE NOTIFICATION**

Analog Devices, Inc.  
 1630 McCarthy Blvd., Milpitas, CA 95035-7417  
 (408) 432-1900

October 16, 2017

Dear Sir/Madam:

PCN\_101617

**Subject: Notification of New Assembly Location for Additional SOT-223 Packaged Devices**

Please be advised that the Analog Devices, Inc. (ADI) Milpitas, California has successfully qualified UTAC Malaysia (UMY), for assembling subject devices. UTAC Malaysia (UMY) is ISO9001, ISO14001, ISO18001, and TS16949 certified. A summary of UTAC Malaysia (UMY) capacity and LTC's qualification results are shown on the attached page. The facility was physically audited by ADI's quality engineer. ADI product assembled in UTAC Malaysia (UMY) can be identified by the plant code marked on the 2<sup>nd</sup> level packaging as "L" and country of origin as "MY" as shown in attached sample label. The first units assembled by UTAC Malaysia (UMY) will be shipped after December 16, 2017. The list of affected part numbers is shown on the attached page.

Additionally, Analog Devices, Inc. performs reliability testing on production lots in accordance with our Quick Reaction Reliability (QR2) Monitor Program. This monitor program is designed to provide fast feedback for possible reliability problems associated with package assembly. Please provide an expeditious approval to this PCN, so that ADI can build subject devices at UTAC Malaysia.

Should you have any questions or concerns, please contact your nearest Analog Devices sales representative or me at (408) 432-1900 ext. 2077 or by email at [JASON.HU@ANALOG.COM](mailto:JASON.HU@ANALOG.COM) before December 16, 2017, at which time we will consider this change to be approved.

Sincerely,

Jason Hu  
 Quality Assurance Engineer

**For questions on this PCN, please contact Jason Hu or you may send an email to your regional contacts below or contact your local ADI sales representatives.**

|  |                                      |   |
|--|--------------------------------------|---|
| <b>Americas:</b> PCN_Americas@analog.com | <b>Europe:</b> PCN_Europe@analog.com | <b>Japan:</b> PCN_Japan@analog.com      |
|  |                                      | <b>Rest of Asia:</b> PCN_ROA@analog.com |

**Packaging Label**



Country of Origin

Plant Code

**UTAC Malaysia (UMY) Capacity Summary**

**UTAC Manufacturing Services Malaysia Sdn Bhd**



**Company Name :**  
UTAC Manufacturing Services Malaysia Sdn Bhd (UMY)

**General Manager**  
Mr KC Yoon

**Address :**  
Lot 26 & 27, Batu Berendam FTZ III, 75350 Melaka

**Paid-up Capital :**  
77 MRM

**Establish :**  
8<sup>th</sup> Oct 1990

**Employee :**  
571 person (as at end Jan 2016)  
o Local : 570 persons  
o Foreign Worker : 1 person (Pakistani)

**Land size :**  
31,500m2

**UMY Overview**

- **Leverage UTAC's Capability and Location to Grow Legacy Packages**

**Key Highlights**

- Shipped >200 Mu Automotive Grade
- Shipped 4.4 billion units in 2015 with outstanding delivery performance > 95% and low ppm outgoing quality (<1ppm)
- Continue to meet/exceed stringent Japanese end customers requirements for > 25 years:
  - Toyota, Hitachi, Honda, Mazda
- Received Quality Excellence Award from Toyota for 2015.

**Facility Snapshot**

|                                 |   |
|---------------------------------|---|
| Established                     | 1990  |
| Location                        | Malacca, Malaysia   |
| Facility size (M <sup>2</sup> ) |   |
| ▪ Land area                     | c.31.5k   |
| ▪ Floor area                    | c.9.2k  |
| ▪ Open Floor area               | 25%   |
| No. of staff (#)                | c.571   |
| Operational Certifications      | ISO9001:2008 (2012),<br>TS16949:2009 (2012),<br>ISO14001:2004 (2013),<br>ISO18001:2007 (2013) |



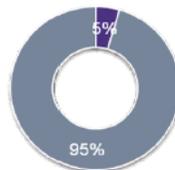
**FY15 Segment Splits**

**Full Assembly & Test Turnkey**



■ Assembly & Test ■ Test

**Automotive vs. Non-Auto**



■ Automotive ■ Non-Auto

**Capacity**

| Assembly   | Capacity (ku/day) |
|------------|-------------------|
| SOT (SMD)  | 17,000            |
| TO (Power) | 4140              |

| Equipment (Type)       | Equipment (Number) |
|------------------------|--------------------|
| Wire Bonders (Au Wire) | 99                 |
| Testers (Custom)       | 116                |

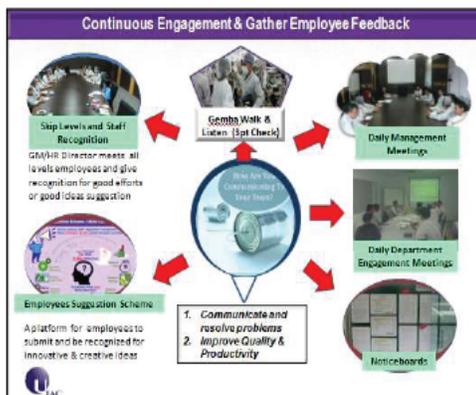
Confidential Statement

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# UMY's History

## ▪ Leverage UTAC's Capability and Location to Grow Legacy Packages

| Overview   | History   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
|--|---|------|-----------------------|------|---|------|-------------------------------------|------|--------------------|------|---------------------|------|-------------------------------------|------|---|------|---|------|------------------------------------|------|---|------|-------------------------------|------|---|------|--|
| <ul style="list-style-type: none"> <li>Acquired as part of UTAC Group's acquisition of three manufacturing facilities from Panasonic in 2014</li> <li>Automotive Grade Production Certified;</li> <li>Panasonic's Japanese heritage provides familiarity with manufacturing best practices:               <ul style="list-style-type: none"> <li>5S, Kaizen (PDCA) 4M Change, QCC Activities and Toyota Way</li> </ul> </li> </ul> | <table border="1"> <tbody> <tr> <td>1990</td> <td>▪ Factory established</td> </tr> <tr> <td>1992</td> <td>▪ Started Hermetic Seal mass production</td> </tr> <tr> <td>1994</td> <td>▪ Expanded into the second building</td> </tr> <tr> <td>1996</td> <td>▪ Achieved ISO9002</td> </tr> <tr> <td>1998</td> <td>▪ Achieved ISO14001</td> </tr> <tr> <td>1999</td> <td>▪ Started Power Transistor Mass-Pro</td> </tr> <tr> <td>2001</td> <td>▪ Awarded "Best Factory in Melaka" by Electronics</td> </tr> <tr> <td>2004</td> <td>▪ Started Glass Diode mass production<br/>▪ Hermetic Seal transferred to China</td> </tr> <tr> <td>2007</td> <td>▪ Started Hologram mass production</td> </tr> <tr> <td>2009</td> <td>▪ Achieved TS16949, ISO27001 and ISO18001</td> </tr> <tr> <td>2011</td> <td>▪ Started LED mass production</td> </tr> <tr> <td>2013</td> <td>▪ Awarded "Melaka Best Environment" and "Melaka Best Factory by GBI-Industrial"</td> </tr> <tr> <td>2014</td> <td>▪ Panasonic =&gt; <b>UMY UTAC Manufacturing Services Malaysia Sdn Bhd</b></td> </tr> </tbody> </table> | 1990 | ▪ Factory established | 1992 | ▪ Started Hermetic Seal mass production | 1994 | ▪ Expanded into the second building | 1996 | ▪ Achieved ISO9002 | 1998 | ▪ Achieved ISO14001 | 1999 | ▪ Started Power Transistor Mass-Pro | 2001 | ▪ Awarded "Best Factory in Melaka" by Electronics | 2004 | ▪ Started Glass Diode mass production<br>▪ Hermetic Seal transferred to China | 2007 | ▪ Started Hologram mass production | 2009 | ▪ Achieved TS16949, ISO27001 and ISO18001 | 2011 | ▪ Started LED mass production | 2013 | ▪ Awarded "Melaka Best Environment" and "Melaka Best Factory by GBI-Industrial" | 2014 | ▪ Panasonic => <b>UMY UTAC Manufacturing Services Malaysia Sdn Bhd</b> |
| 1990   | ▪ Factory established   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 1992   | ▪ Started Hermetic Seal mass production   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 1994   | ▪ Expanded into the second building   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 1996   | ▪ Achieved ISO9002  |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 1998   | ▪ Achieved ISO14001   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 1999   | ▪ Started Power Transistor Mass-Pro   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2001   | ▪ Awarded "Best Factory in Melaka" by Electronics   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2004   | ▪ Started Glass Diode mass production<br>▪ Hermetic Seal transferred to China   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2007   | ▪ Started Hologram mass production  |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2009   | ▪ Achieved TS16949, ISO27001 and ISO18001   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2011   | ▪ Started LED mass production   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2013   | ▪ Awarded "Melaka Best Environment" and "Melaka Best Factory by GBI-Industrial"   |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |
| 2014   | ▪ Panasonic => <b>UMY UTAC Manufacturing Services Malaysia Sdn Bhd</b>  |      |                       |      |   |      |                                     |      |                    |      |                     |      |                                     |      |   |      |   |      |                                    |      |   |      |                               |      |   |      |  |





| RELIABILITY DATA   |             |                  |                  |                 |                    |
|--|-------------|------------------|------------------|-----------------|--------------------|
| UTAC Malaysia (UMY) as 2nd Source for SOT-223 Package                                |             |                  |                  |                 |                    |
| 3/24/2017  |             |                  |                  |                 |                    |
| <b>• PRESSURE COOKER TEST AT 15 PSIG, +121°C</b>                                     |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HOURS  | NUMBER OF FAILURES |
| SOT-223  | 598         | 1641             | 1648             | 200.93          | 0                  |
|  | 598         |                  |                  | 200.93          | 0                  |
| <b>• TEMP CYCLE FROM -65°C to +150°C</b>   |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | NUMBER OF FAILURES |
| SOT-223  | 600         | 1641             | 1648             | 600.00          | 0                  |
|  | 600         |                  |                  | 600.00          | 0                  |
| <b>• THERMAL SHOCK FROM -65°C to +150°C</b>  |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | NUMBER OF FAILURES |
| SOT-223  | 600         | 1641             | 1648             | 600.00          | 0                  |
|  | 600         |                  |                  | 600.00          | 0                  |
| <b>• HIGH TEMPERATURE BAKE +175°C</b>  |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HOURS  | NUMBER OF FAILURES |
| SOT-223  | 100         | 1641             | 1648             | 100.00          | 0                  |
|  | 100         |                  |                  | 100.00          | 0                  |
| <b>• SOLDER SHOCK</b>  |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HOURS  | NUMBER OF FAILURES |
| SOT-223  | 200         | 1641             | 1648             |                 | 0                  |
|  | 200         |                  |                  |                 | 0                  |
| <b>• POWER CYCLING</b>   |             |                  |                  |                 |                    |
| PACKAGE TYPE   | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | NUMBER OF FAILURES |
| SOT-223  | 92          | 1641             | 1648             | 920.00          | 0                  |
|  | 92          |                  |                  | 920.00          | 0                  |
| Note: PCT, Temp Cycle & Thermal Shock are subjected to J-STD-020 MSL Preconditioning |             |                  |                  |                 |                    |

Form: 00-03-6209B.

Rev 0

| List of affected part numbers |                    |    |                    |    |                |
|-------------------------------|--------------------|----|--------------------|----|----------------|
| 1                             | LT1117CST#PBF      | 31 | LT1521CST-3#PBF    | 61 | LT3080EST      |
| 2                             | LT1117IST#PBF      | 32 | LT1521CST-3        | 62 | LT3080IST      |
| 3                             | LT1117CST-2.85#PBF | 33 | LT1521CST-3.3#PBF  | 63 | LT3092EST#PBF  |
| 4                             | LT1117IST-2.85#PBF | 34 | LT1521CST-3.3      | 64 | LT3092IST#PBF  |
| 5                             | LT1117CST-3.3#PBF  | 35 | LT1521CST-5#PBF    | 65 | LT3092MPST#PBF |
| 6                             | LT1117IST-3.3#PBF  | 36 | LT1521CST-5        | 66 | LT3092EST      |
| 7                             | LT1117CST-5#PBF    | 37 | LT1521IST-3#PBF    | 67 | LT3092IST      |
| 8                             | LT1117IST-5#PBF    | 38 | LT1521IST-3        | 68 | LT3092MPST     |
| 9                             | LT1117CST          | 39 | LT1521IST-3.3#PBF  |    |                |
| 10                            | LT1117IST          | 40 | LT1521IST-3.3      |    |                |
| 11                            | LT1117CST-2.85     | 41 | LT1521IST-5#PBF    |    |                |
| 12                            | LT1117IST-2.85     | 42 | LT1521IST-5        |    |                |
| 13                            | LT1117CST-3.3      | 43 | LT1963AEST-1.5#PBF |    |                |
| 14                            | LT1117IST-3.3      | 44 | LT1963AEST-1.8#PBF |    |                |
| 15                            | LT1117CST-5        | 45 | LT1963AEST-2.5#PBF |    |                |
| 16                            | LT1117IST-5        | 46 | LT1963AEST-3.3#PBF |    |                |
| 17                            | LT1129CST-3.3#PBF  | 47 | LT1963AEST-1.5     |    |                |
| 18                            | LT1129IST-3.3#PBF  | 48 | LT1963AEST-1.8     |    |                |
| 19                            | LT1129MPST-3.3#PBF | 49 | LT1963AEST-2.5     |    |                |
| 20                            | LT1129CST-5#PBF    | 50 | LT1963AEST-3.3     |    |                |
| 21                            | LT1129IST-5#PBF    | 51 | LT1963EST-1.5#PBF  |    |                |
| 22                            | LT1129CST-3.3      | 52 | LT1963EST-1.5      |    |                |
| 23                            | LT1129IST-3.3      | 53 | LT1963EST-1.8#PBF  |    |                |
| 24                            | LT1129MPST-3.3     | 54 | LT1963EST-1.8      |    |                |
| 25                            | LT1129CST-5        | 55 | LT1963EST-2.5#PBF  |    |                |
| 26                            | LT1129IST-5        | 56 | LT1963EST-2.5      |    |                |
| 27                            | LT1175CST-5#PBF    | 57 | LT1963EST-3.3#PBF  |    |                |
| 28                            | LT1175IST-5#PBF    | 58 | LT1963EST-3.3      |    |                |
| 29                            | LT1175CST-5        | 59 | LT3080EST#PBF      |    |                |
| 30                            | LT1175IST-5        | 60 | LT3080IST#PBF      |    |                |

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