



Integrated Device Technology, Inc.
 6024 Silver Creek Valley Road, San Jose, CA - 95138

PRODUCT/PROCESS CHANGE NOTICE (PCN)

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|--|--|
| PCN #: A1108-03R1 DATE: November 23, 2011 Product Affected: <p style="padding-left: 40px;">Refer to the attached list of products.</p> Date Effective: December 23, 2011 | MEANS OF DISTINGUISHING CHANGED DEVICES: <input type="checkbox"/> Product Mark <input type="checkbox"/> Back Mark <input checked="" type="checkbox"/> Date Code > 1147 <input type="checkbox"/> Other |
|--|--|

| | |
|--|---|
| Contact: Vicrant Chaudhry Title: Marketing Manager Phone #: (480) 763-2045 E-mail: Vikrant.Chaudhry@idt.com | Attachment: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Samples: Please contact your local sales representative for sample request & availability. |
|--|---|

DESCRIPTION AND PURPOSE OF CHANGE:

| | |
|---|---|
| <input type="checkbox"/> Die Technology <input type="checkbox"/> Wafer Fabrication Process <input type="checkbox"/> Assembly Process <input type="checkbox"/> Equipment <input checked="" type="checkbox"/> Material <input type="checkbox"/> Testing <input type="checkbox"/> Manufacturing Site <input type="checkbox"/> Data Sheet <input checked="" type="checkbox"/> Other: Die Revision | <p>Revision 1: This revised notification is to advise customers of the plan to change from dual capacitor to single capacitor on this product. Qualification has been completed and the result is as shown in Page 4. Effective date remains unchanged.</p> <p>IDT has made a die change for the affected parts listed on this PCN. The change will enhance electrical performance, decrease power consumption and increase device's robustness. The die attach material will also be changed to JM7000.</p> <p>Attachment 1 - Outlines the die / spec change & material qualification data. Attachment 2 - List of affected products</p> |
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RELIABILITY/QUALIFICATION SUMMARY:

There is no expected change to the product quality or reliability performance.

CUSTOMER ACKNOWLEDGMENT OF RECEIPT:

IDT records indicate that you require written notification of this change. Please use the acknowledgement below or E-Mail to grant approval or request additional information. If IDT does not receive acknowledgement within 30 days of this notice it will be assumed that this change is acceptable.

IDT reserves the right to ship either version manufactured after the process change effective date until the inventory on the earlier version has been depleted.

| | |
|---------------------------------|---|
| Customer: _____ | <input type="checkbox"/> <i>Approval for shipments prior to effective date.</i> |
| Name/Date: _____ | E-Mail Address: _____ |
| Title: _____ | Phone# /Fax# : _____ |
| CUSTOMER COMMENTS: _____ | |
| | |
| | |

IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: _____ DATE: _____



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ATTACHMENT 1 - PCN # : A1108-03R1

PCN Type: New Die and Material Change

Data Sheet Change: Yes

Detail Of Change:

Revision 1: This revised notification is to advise customers of the plan to change from dual capacitor to single capacitor on this product. Qualification has been completed and the result is as shown in Page 4.

IDT has made a die change from die option 097 to die option 207 for the affected parts listed on this PCN. The change will enhance electrical performance, decrease power consumption and increase device's robustness.

The new die option cut-off datecode is 1147. This die option was fully verified and characterized with functionality and evaluated against datasheet parameters. Refer below for other spec parameters that were updated due to this change. There are no changes to the orderable part#.

| | FROM | TO |
|--|----------------|----------------|
| Page 1 Features: Typical RMS phase jitter @ 669.3266MHz (12KHz - 20MHz) | 0.384ps | 0.359ps |
| Table 2A: Typical Input Capacitance (FSEL[1:0],SDATA,SCLK), Cin | 4pF | 5.5pF |
| Absolute Maximum Ratings: Supply Voltage, Vcc | 4.5V | 3.63V |
| Table 5A: Max Power Supply Current, Iee | 200mA | 150mA |
| Table 5B: Max Power Supply Current, Iee | 190mA | 145mA |
| Table 6B: Cycle to Cycle Jitter, Vcc 3.3V±5% | 16 ps | 15 ps |
| Cycle to Cycle Jitter, Vcc 2.5V±5% | 26 ps | 15 ps |
| Typical RMS Phase Jitter | 0.384 ps | 0.359 ps |
| Typical Single-side Band Phase Noise, 100Hz from Carrier | -65 dBc/Hz | -67.3 dBc/Hz |
| Single-side Band Phase Noise, 1kHz from Carrier | -93.59 dBc/Hz | -95.3 dBc/Hz |
| Single-side Band Phase Noise, 10kHz from Carrier | -113.22 dBc/Hz | -114.23 dBc/Hz |
| Single-side Band Phase Noise, 100kHz from Carrier | -116.9 dBc/Hz | -117.36 dBc/Hz |
| Single-side Band Phase Noise, 1MHz from Carrier | -129.13 dBc/Hz | -129.93 dBc/Hz |
| Single-side Band Phase Noise, 10MHz from Carrier | -136.82 dBc/Hz | -136.78 dBc/Hz |
| Min/Maximum Output Duty Cycle, odc | 43% / 57% | 44% / 56% |
| Maximum Device Start-up Time | 10 ms | 20 ms |
| Page 13: Typical Phase Noise at 669.3266MHz RMS phase jitter (Random) 12Hz - 20MHz | 0.384ps | 0.359ps |
| Page 17: POWER CONSIDERATIONS Tj for an ambient temperature of 85°C with all output switching | 113.4°C | 106.6°C |



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IDT has qualified the new Die Attach material JM7000 for CD10 package.
The qualification result details are as follows:

Affected Packages: CDIP 10 (CD10)

Assembly Material: The affected package types will be assembled at Tai-Saw using the same ceramic substrate and design.

Sample Availability: Please contact your IDT sales representative for your sample request and availability.

Qualification Test Plan:

(I) Die attach material change

Following tests were performed on three assembly lots.

| Test Description | Test Method | Lot# 1 (SS/Rej) | Lot# 2 (SS/Rej) | Lot# 3 (SS/Rej) |
|--|---------------------|-----------------|-----------------|-----------------|
| Temperature Cycling + End Point Electrical Test (-55°C to 125°C, 1000 cycle) | JESD22-A104 | 25/0 | 25/0 | 25/0 |
| Mechanical Shock + End Point Electrical (Cond B, 1500 G Peak) | MIL-STD-883, M 2002 | 15/0 | 15/0 | 15/0 |
| Mechanical Vibration + End Point Electrical (20 to 2000 Hz/20GHz Peak) | JESD22-A103A | 15/0 | 15/0 | 15/0 |
| Fine/Gross Leak (M1014 Cond C1 / A1) | MIL-STD-883, M 1014 | 15/0 | 15/0 | 15/0 |
| X-ray Examination | MIL-STD-883, M 2015 | 15/0 | 15/0 | 15/0 |
| Internal Vapor Content | MIL-STD-883, M 1018 | 50/0 | 50/0 | 50/0 |
| Internal Visual Inspection | MIL-STD-883, M 2010 | 3/0 | 3/0 | 3/0 |
| Die Shear Test (> 2.5kg / 2500g) | MIL-STD-883, M 2019 | 5/0 | 5/0 | 5/0 |
| Capacitor Shear Test (> 100g) | - | 5/0 | 5/0 | 5/0 |



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Qualification Test Plan:

(II) Dual capacitor to Single capacitor change

Following tests were performed on three assembly lots.

| Test Description | Test Method | Lot# 1 (SS/Rej) | Lot# 2 (SS/Rej) | Lot# 3 (SS/Rej) |
|--|---------------------|--------------------|--------------------|--------------------|
| Temperature Cycling + End Point Electrical Test (-55°C to 125°C, 1000 cycle) | JESD22-A104 | 34/0 | 34/0 | 34/0 |
| Mechanical Shock + End Point Electrical (Cond B, 1500 G Peak) | MIL-STD-883, M 2002 | 15/0 | 15/0 | 15/0 |
| Mechanical Vibration + End Point Electrical (20 to 2000 Hz/20GHz Peak) | JESD22-A103A | 15/0 | 15/0 | 15/0 |
| Fine/Gross Leak (M1014 Cond C1 / A1) | MIL-STD-883, M 1014 | 15/0 | 15/0 | 15/0 |
| X-ray Examination | MIL-STD-883, M 2015 | 15/0 | 15/0 | 15/0 |
| Internal Vapor Content | MIL-STD-883, M 1018 | 3/0 | 3/0 | 3/0 |
| Internal Visual Inspection | MIL-STD-883, M 2010 | 5/0 | 5/0 | 5/0 |
| Die Shear Test (> 2.5kg / 2500g) | MIL-STD-883, M 2019 | 5/0 | 5/0 | 5/0 |
| Capacitor Shear Test (> 100g) | - | 5/0 | 5/0 | 5/0 |



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ATTACHMENT 2 - PCN # : A1108-03R1

Affected IDT Part # List

| <u>Part #</u> | <u>Package Type</u> |
|----------------------|----------------------------|
| 8N3Q001FCJI-001 | CD10 |
| 8N3Q001FCJI-001T | CD10 |
| 8N3QV01ACJI-011 | CD10 |
| 8N3QV01ACJI-011T | CD10 |
| 8N3QV01LCJI-034 | CD10 |
| 8N3QV01LCJI-034T | CD10 |
| 8N3QV01KC-0017CDI | CD10 |
| 8N3QV01KC-0017CDI8 | CD10 |
| 8N3QX01XCJ | CD10 |
| 8N3QX01XCJT | CD10 |
| 8N3QX01XCJI | CD10 |
| 8N3QX01XCJIT | CD10 |