



Integrated Device Technology, Inc.
2975 Stender Way, Santa Clara, CA - 95054

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: SM 0008-04 DATE: 8/21/00
Product Affected: 256K & 512K Dual Port Family
Manufacturing Location Affected: N/A
Date Effective: 11/20/00

MEANS OF DISTINGUISHING CHANGED DEVICES:
Product Mark Die Revision "X" on Top Mark
Back Mark
Date Code
Other

Contact: Lakshmi Srinivasan
Title: Quality Engineering Supervisor Attachment: Yes No
Phone #: (831) 775-4022
Fax #: (831) 754-4672 Samples: Available on request. Please contact you local
E-mail: lakshmi.srinivasan@idt.com Sales Representative for schedule

DESCRIPTION AND PURPOSE OF CHANGE:

- Die Technology
Wafer Fabrication Process
Assembly Process
Equipment
Material
Testing
Manufacturing Site
Data Sheet
Other

This change is to upgrade to a new technology (CMOS 9) and shrink die. This change is to improve manufacturabilty and allow for expanded product offerings.

RELIABILITY/QUALIFICATION SUMMARY:

Qualification testing will verify that there is no change to product reliability. Qualification details are available upon request.

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: Approval for shipments prior to effective date.
Name/Date: E-Mail Address:
Title: Phone# /Fax# :

CUSTOMER COMMENTS:

IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: DATE:



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**PCN Summary**

**PCN Type:** Mask/Design Change for Die Shrink

**Commodity** Memory

**Forecast or Execute** Execute

**Planned or Unplanned** Planned

**Data Sheet Change** N/A

**Detail of Change:** The base device for each part is detailed on the attached product detail sheet. The new base device for future products listed on this PCN will be 7027 "X". This product redesign will allow for IDT to expand product offerings and upgrade technology. This change will also provide the flexibility of manufacturing the product in either Wafer Facility. Both Wafer Fab facilities have been previously qualified for CMOS 9 processing.

| Base Device / Die Revision           | Current Die Revision |             |               | Planned Change |             |
|--------------------------------------|----------------------|-------------|---------------|----------------|-------------|
|                                      | 7026 Z               | 7027 Z      | 7027 Y        | 7027 X         |             |
| Wafer Fab Facility                   | Salinas, CA          | Salinas, CA | Hillsboro, OR | Hillsboro, OR  | Salinas, CA |
| Wafer Fab Technology                 | CMOS 7               | CMOS 8      | CMOS 9        | CMOS 9         | CMOS 9      |
| Wafer Size                           | 6 Inch               | 6 Inch      | 8 Inch        | 8 Inch         | 6 Inch      |
| # Poly Layers                        | 2                    | 2           | 3             | 3              | 3           |
| # Metal layers                       | 2                    | 2           | 2             | 2              | 2           |
| Minimum Feature Size / $\mu\text{m}$ | 0.64                 | .60 / .40   | 0.35          | 0.35           | 0.35        |
| Die Dimensions/( K sq mils)          | 86.2                 | 113.8       | 132.6         | 81.3           | 81.3        |

**Conversion schedule:** Contact the local IDT Sales Representative for schedule.



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#### Qualification Plan

| Test Vehicles  | Required Sample / # Fails | Expected Completion Date |                |              |              |
|--|---------------------------|--------------------------|----------------|--------------|--------------|
|  |                           | 11/15/00                 | 12/15/00       | 11/15/00     | 12/15/00     |
| <b>70V37X (3.3V) &amp; 7037X (5V)</b>  |                           | LOT #1<br>3.3V           | LOT #2<br>3.3V | LOT #1<br>5V | LOT #2<br>5V |
| Operating Life Test: Dynamic<br>@+135°C, Vcc=6V for 500 hours or<br>Vcc=4V for 750 hours | 116 / 0                   |                          |                |              |              |
| High Temp. Storage Life Test<br>(Unbiased, 1000 hours @+150°C)                           | 77 / 0                    |                          |                |              |              |
| Bake & Ballshear Test @ 200°C /<br>4 ball bonds per device                               | 5 / 0                     |                          |                |              |              |
| Thermal Shock: (-65°C to +150°C,<br>100 cycles)  | 45 / 0                    |                          |                |              |              |
| Temperature Cycling: (-65°C to<br>+150°C, 1000 cycles)                                   | 45 / 0                    |                          |                |              |              |
| HAST: (Biased, 100 Hrs.<br>@+130°C, +85%RH, 3 Atm.)                                      | 45 / 0                    |                          |                |              |              |
| Autoclave:(Unbiased, 2 Atm<br>Saturated Steam, +121°C, 168 Hrs)                          | 45 / 0                    |                          |                |              |              |
| ESD Human Body Model   | 6 / 0                     |                          |                |              |              |
| ESD Charged Device Model   | 6 / 0                     |                          |                |              |              |
| Latch up: ( Tested to 2X Vcc)  | 10 / 0                    |                          |                |              |              |

Tests are completed for unshaded areas. Product released is based on qualification of initial lot.

**Characterization Data:** Characterization is completed as part of qualification and will verify that there is no change to the datasheet parameters.



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| IDT7026 Family of Parts |          |          |           |     |     |       |         |
|-------------------------|----------|----------|-----------|-----|-----|-------|---------|
| Part Number             | Old Rev. | New Rev. | Interface | Vcc | Bus | Depth | Density |
| IDT7026S/L              | 'Z'      | 'X'      | Async     | 5.0 | x16 | 16K   | 256K    |
| IDT70261S/L             | 'Z'      | 'X'      | Async     | 5.0 | x16 | 16K   | 256K    |
| IDT7007S/L              | 'Z'      | 'X'      | Async     | 5.0 | x8  | 32K   | 256K    |
| IDT70V26S/L             | 'Z'      | 'X'      | Async     | 3.3 | x16 | 16K   | 256K    |
| IDT70V261S/L            | 'Z'      | 'X'      | Async     | 3.3 | x16 | 16K   | 256K    |
| IDT70V07S/L             | 'Z'      | 'X'      | Async     | 3.3 | x8  | 32K   | 256K    |
| IDT709269S/L            | 'Z'      | 'X'      | Sync      | 5.0 | x16 | 16K   | 256K    |
| IDT709079S/L            | 'Z'      | 'X'      | Sync      | 5.0 | x8  | 32K   | 256K    |
| IDT70V9269S/L           | 'Z'      | 'X'      | Sync      | 3.3 | x16 | 16K   | 256K    |
| IDT70V9079S/L           | 'Z'      | 'X'      | Sync      | 3.3 | x8  | 32K   | 256K    |

| IDT7027 Family of Parts |          |          |           |     |     |       |         |
|-------------------------|----------|----------|-----------|-----|-----|-------|---------|
| Part Number             | Old Rev. | New Rev. | Interface | Vcc | Bus | Depth | Density |
| IDT7027S/L              | 'Z'      | 'X'      | Async     | 5.0 | x16 | 32K   | 512K    |
| IDT7008S/L              | 'Z'      | 'X'      | Async     | 5.0 | x8  | 64K   | 512K    |
| IDT70V27S/L             | 'Z'      | 'X'      | Async     | 3.3 | x16 | 32K   | 512K    |
| IDT70V08S/L             | 'Z'      | 'X'      | Async     | 3.3 | x8  | 64K   | 512K    |
| IDT709279S/L            | 'Z'      | 'X'      | Sync      | 5.0 | x16 | 32K   | 512K    |
| IDT709089S/L            | 'Z'      | 'X'      | Sync      | 5.0 | x8  | 64K   | 512K    |
| IDT70V9089S/L           | 'Z'      | 'X'      | Sync      | 3.3 | x16 | 32K   | 512K    |
| IDT70V9279S/L           | 'Z'      | 'X'      | Sync      | 3.3 | x8  | 64K   | 512K    |
| IDT7037L                | 'Y'      | 'X'      | Async     | 5.0 | x18 | 32K   | 576K    |
| IDT7018L                | 'Y'      | 'X'      | Async     | 5.0 | x9  | 64K   | 576K    |
| IDT70V18L               | 'Y'      | 'X'      | Async     | 3.3 | x9  | 64K   | 576K    |
| IDT709379L              | 'Y'      | 'X'      | Sync      | 5.0 | x18 | 32K   | 576K    |
| IDT709189L              | 'Y'      | 'X'      | Sync      | 5.0 | x9  | 64K   | 576K    |
| IDT70V9379L             | 'Y'      | 'X'      | Sync      | 3.3 | x18 | 32K   | 576K    |
| IDT70V9189L             | 'Y'      | 'X'      | Sync      | 3.3 | x9  | 64K   | 576K    |

| New Parts     |          |          |           |     |     |       |         |
|---------------|----------|----------|-----------|-----|-----|-------|---------|
| Part Number   | Old Rev. | New Rev. | Interface | Vcc | Bus | Depth | Density |
| IDT7036S/L    | -        | 'X'      | Async     | 5.0 | x18 | 16K   | 288K    |
| IDT7017S/L    | -        | 'X'      | Async     | 5.0 | x9  | 32K   | 288K    |
| IDT70V36S/L   | -        | 'X'      | Async     | 3.3 | x18 | 16K   | 288K    |
| IDT70V17S/L   | -        | 'X'      | Async     | 3.3 | x9  | 32K   | 288K    |
| IDT709369S/L  | -        | 'X'      | Sync      | 5.0 | x18 | 16K   | 288K    |
| IDT709179S/L  | -        | 'X'      | Sync      | 5.0 | x9  | 32K   | 288K    |
| IDT70V9369S/L | -        | 'X'      | Sync      | 3.3 | x18 | 16K   | 288K    |
| IDT70V9179S/L | -        | 'X'      | Sync      | 3.3 | x9  | 32K   | 288K    |