



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

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: **SR-0505-02**                      DATE: **8/3/2005**

Product Affected:   FPBGA 165 (BQ165) Package

Date Effective:   **11/2/2005**

**MEANS OF DISTINGUISHING CHANGED DEVICES:**

- Product Mark      Encrypted assembly date code suffix "EV"
- Back Mark         on the assembly lot number. Refer to the
- Date Code           illustration on page 4 of the PCN.
- Other

Contact:   Geoffrey Cortes

Title:       Corporate Quality/Reliability Manager

Phone #:   (408) 284 8321

Fax #:       (408) 284 1450

E-mail:     [Geoffrey.Cortes@idt.com](mailto:Geoffrey.Cortes@idt.com)

Attachment:    Yes                       No

Samples:   Contact the local IDT sales representative

**DESCRIPTION AND PURPOSE OF CHANGE:**

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

This notification is to advise customers, that IDT is changing the FPBGA 165 (BQ165) package to a larger solder mask opening and larger ball diameter. This is expected to improve solder joint reliability.  
Please refer to the attachment for details.

**RELIABILITY/QUALIFICATION SUMMARY:**

Please see PCN attachment for qualification/reliability data.

**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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## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT - PCN #: SR-0505-02

**PCN Type:** Change in solder pad opening and ball diameter for FPBGA 165 (BQ165) package.

**Data Sheet Change:** There is no change in Moisture Sensitive Level.

**Detail of Change:** This notification is to advise customers that IDT is changing the FPBGA 165 (BQ165) package with a larger solder mask opening and larger solder ball diameter. There is no change to the substrate material, number of substrate layers, or assembly material set. This is expected to improve the solder joint reliability. Refer to page 7 of 7 of the PCN attachment for the Weibull plot.

There are no datasheet or Moisture Sensitive Level (MSL) changes due to this change. Customers are not expected to be adversely impacted by this change.

Description	From	To
Solder Mask Opening	0.37 mm	0.40 mm
Solder Ball Diameter	0.40 mm	0.45 mm

Please see attachment (Appendix - 1) for affected part #s.

**Samples are available for selective devices. Please contact your local field sales representative for sample availability and additional information.**



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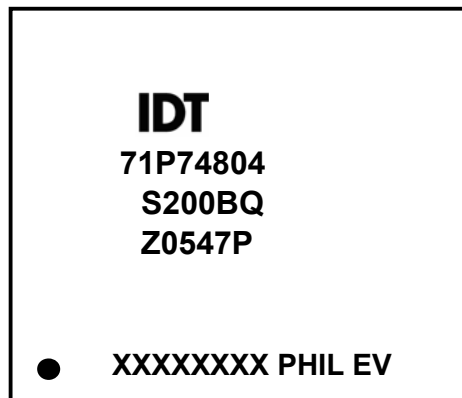
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#### ILLUSTRATION

Encrypted assembly date code suffix on the assembly lot number

Example of FPBGA 165 Package Top Mark



**XXXXXXXX** = Assembly Lot Number  
**PHIL** = Country of Origin  
**EV** = Assembly Date Code

**EV**

└─┬─> ww 45 - 46  
└─┬─> 2005

**EW** = 2005, ww 47 - 48

**EX** = 2005, ww 49 - 50

↓

**FA** = 2006, ww 01 - 02



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## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT - PCN #: SR-0505-02

**Qualification Plan:** P04-10-02

**Test Vehicle:** IDT71V65803

**Qualification Test Plan and Results:**

Description	Test Methods	Sample Size /# Fails	Test Results
Physical Dimensions	JESD22-B100	5/0	5/0 (Pass)
External Visual Inspection	JESD22-B101	25/0	25/0 (Pass)
Internal Visual Inspection	MIL-STD 883 M-2010	5/0	5/0 (Pass)
Solder Ball Shear Test	JESD22-B117	5/0	5/0 (Pass)
2nd Level Reliability Test	IPC-9701	42	Refer to page 7 of 7



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#### Product List

Appendix - 1

IDT71V2546S100BQ	IDT71V2557S80BQI	IDT71V25781SA166BQ	IDT71V3557SA75BQ	IDT71V35761SA200BQI
IDT71V2546S100BQI	IDT71V2557S85BQ	IDT71V25781SA166BQI	IDT71V3557SA75BQI	IDT71V3576S133BQ
IDT71V2546S133BQ	IDT71V2557S85BQI	IDT71V25781SA183BQ	IDT71V3557SA80BQ	IDT71V3576S133BQI
IDT71V2546S133BQI	IDT71V2557SA75BQ	IDT71V25781SA183BQI	IDT71V3557SA80BQI	IDT71V3576S150BQ
IDT71V2546S150BQ	IDT71V2557SA75BQI	IDT71V25781SA200BQ	IDT71V3557SA85BQ	IDT71V3576S150BQI
IDT71V2546SA100BQ	IDT71V2557SA80BQ	IDT71V25781SA200BQI	IDT71V3557SA85BQI	IDT71V3576SA133BQ
IDT71V2546SA100BQI	IDT71V2557SA80BQI	IDT71V2578S133BQ	IDT71V3558S100BQ	IDT71V3576SA133BQI
IDT71V2546SA133BQ	IDT71V2557SA85BQ	IDT71V2578S133BQI	IDT71V3558S100BQI	IDT71V3576SA150BQ
IDT71V2546SA133BQI	IDT71V2557SA85BQI	IDT71V2578S150BQ	IDT71V3558S133BQ	IDT71V3576SA150BQI
IDT71V2546SA150BQ	IDT71V2558S100BQ	IDT71V2578S150BQI	IDT71V3558S133BQI	IDT71V3577S65BQ
IDT71V2546SA150BQI	IDT71V2558S100BQI	IDT71V3548S100BQ	IDT71V3558S166BQ	IDT71V3577S75BQ
IDT71V2548S133BQ	IDT71V2558S133BQ	IDT71V3548S100BQI	IDT71V3558S166BQI	IDT71V3577S75BQI
IDT71V2548SA100BQ	IDT71V2558S133BQI	IDT71V3548S133BQ	IDT71V3558S200BQ	IDT71V3577S80BQ
IDT71V2548SA100BQI	IDT71V2559S75BQ	IDT71V3548S133BQI	IDT71V3558S200BQI	IDT71V3577S80BQI
IDT71V2548SA133BQ	IDT71V2559S80BQ	IDT71V3548SA100BQ	IDT71V3558SA100BQ	IDT71V3577S85BQ
IDT71V2548SA133BQI	IDT71V2559S85BQ	IDT71V3548SA133BQ	IDT71V3558SA133BQ	IDT71V3577S85BQI
IDT71V2548SA150BQ	IDT71V2559SA75BQ	IDT71V3556S100BQ	IDT71V3559S75BQ	IDT71V3577SA75BQ
IDT71V2548SA150BQI	IDT71V2559SA80BQ	IDT71V3556S100BQI	IDT71V3559S80BQ	IDT71V3577SA75BQI
IDT71V2556S100BQ	IDT71V2559SA85BQ	IDT71V3556S133BQ	IDT71V3559S80BQI	IDT71V3577SA80BQ
IDT71V2556S100BQI	IDT71V25761SA166BQ	IDT71V3556S133BQI	IDT71V3559S85BQ	IDT71V3577SA80BQI
IDT71V2556S133BQ	IDT71V25761SA166BQI	IDT71V3556S150BQ	IDT71V3559S85BQI	IDT71V3577SA85BQ
IDT71V2556S133BQI	IDT71V25761SA183BQ	IDT71V3556S166BQ	IDT71V3559SA75BQ	IDT71V3577SA85BQI
IDT71V2556S150BQ	IDT71V25761SA183BQI	IDT71V3556S200BQ	IDT71V3559SA80BQ	IDT71V35781SA166BQ
IDT71V2556S166BQ	IDT71V25761SA200BQ	IDT71V3556SA100BQ	IDT71V3559SA85BQ	IDT71V35781SA166BQI
IDT71V2556S200BQ	IDT71V25761SA200BQI	IDT71V3556SA100BQI	IDT71V35761S166BQ	IDT71V35781SA183BQ
IDT71V2556SA100BQ	IDT71V2576S133BQ	IDT71V3556SA133BQ	IDT71V35761S166BQI	IDT71V35781SA183BQI
IDT71V2556SA100BQI	IDT71V2576S133BQI	IDT71V3556SA133BQI	IDT71V35761S183BQ	IDT71V35781SA200BQ
IDT71V2556SA133BQ	IDT71V2576S150BQ	IDT71V3556SA150BQ	IDT71V35761S183BQI	IDT71V35781SA200BQI
IDT71V2556SA133BQI	IDT71V2576S150BQI	IDT71V3556SA166BQ	IDT71V35761S200BQ	IDT71V3578S133BQ
IDT71V2556SA150BQ	IDT71V2577S75BQ	IDT71V3556SA200BQ	IDT71V35761S200BQI	IDT71V3578S133BQI
IDT71V2556SA166BQ	IDT71V2577S75BQI	IDT71V3557S75BQ	IDT71V35761SA166BQ	IDT71V3578S150BQ
IDT71V2556SA200BQ	IDT71V2577S80BQ	IDT71V3557S80BQ	IDT71V35761SA166BQI	IDT71V3578S150BQI
IDT71V2556SA200BQI	IDT71V2577S80BQI	IDT71V3557S80BQI	IDT71V35761SA183BQ	IDT71V3579S65BQ
IDT71V2557S75BQ	IDT71V2577S85BQ	IDT71V3557S85BQ	IDT71V35761SA183BQI	IDT71V3579S75BQ
IDT71V2557S80BQ	IDT71V2577S85BQI	IDT71V3557S85BQI	IDT71V35761SA200BQ	IDT71V3579S75BQI

Note: For T & R (shipping method) "8" is added to the part number and for industrial grade, letter "I" is added to the part number.



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IDT71V3579S80BQ	IDT71V3579S80BQ	IDT71V65803S150BQ	IDT71V67803S133BQI	IDT71P71804S250BQ
IDT71V3579S80BQI	IDT71V3579S80BQI	IDT71V65803S150BQI	IDT71V67803S150BQ	IDT71P71804S250BQI
IDT71V3579S85BQ	IDT71V3579S85BQ	IDT71V65902S75BQ	IDT71V67803S166BQ	IDT71P72104S167BQ
IDT71V3579S85BQI	IDT71V3579S85BQI	IDT71V65902S80BQ	IDT71V67902S75BQ	IDT71P72104S167BQI
IDT71V3579SA75BQ	IDT71V3579SA75BQ	IDT71V65902S85BQ	IDT71V67902S75BQI	IDT71P72104S200BQ
IDT71V3579SA75BQI	IDT71V3579SA75BQI	IDT71V65903S75BQ	IDT71V67902S80BQ	IDT71P72104S200BQI
IDT71V3579SA80BQ	IDT71V3579SA80BQ	IDT71V65903S80BQ	IDT71V67902S80BQI	IDT71P72104S250BQ
IDT71V3579SA80BQI	IDT71V3579SA80BQI	IDT71V65903S85BQ	IDT71V67902S85BQ	IDT71P72104S250BQI
IDT71V3576SA150BQI	IDT71V3579SA85BQ	IDT71V67602S133BQ	IDT71V67902S85BQI	IDT71P72204S167BQ
IDT71V3577S65BQ	IDT71V3579SA85BQI	IDT71V67602S133BQI	IDT71V67903S75BQ	IDT71P72204S167BQI
IDT71V3577S75BQ	IDT71V65602S100BQ	IDT71V67602S150BQ	IDT71V67903S75BQI	IDT71P72204S200BQ
IDT71V3577S75BQI	IDT71V65602S133BQ	IDT71V67602S150BQI	IDT71V67903S80BQ	IDT71P72204S200BQI
IDT71V3577S80BQ	IDT71V65602S150BQ	IDT71V67602S166BQ	IDT71V67903S80BQI	IDT71P72204S250BQ
IDT71V3577S80BQI	IDT71V65603S100BQ	IDT71V67602S166BQI	IDT71V67903S85BQ	IDT71P72204S250BQI
IDT71V3577S85BQ	IDT71V65603S100BQI	IDT71V67603S133BQ	IDT71V67903S85BQI	IDT71P72604S167BQ
IDT71V3577S85BQI	IDT71V65603S133BQ	IDT71V67603S133BQI	IDT71P71104S167BQ	IDT71P72604S167BQI
IDT71V3577SA75BQ	IDT71V65603S133BQI	IDT71V67603S150BQ	IDT71P71104S167BQI	IDT71P72604S200BQ
IDT71V3577SA75BQI	IDT71V65603S150BQ	IDT71V67603S150BQI	IDT71P71104S200BQ	IDT71P72604S200BQI
IDT71V3577SA80BQ	IDT71V65603S150BQI	IDT71V67603S166BQ	IDT71P71104S200BQI	IDT71P72604S250BQ
IDT71V3577SA80BQI	IDT71V65702S75BQ	IDT71V67702S75BQ	IDT71P71104S250BQ	IDT71P72604S250BQI
IDT71V3577SA85BQ	IDT71V65702S80BQ	IDT71V67702S75BQI	IDT71P71104S250BQI	IDT71P72804S167BQ
IDT71V3577SA85BQI	IDT71V65702S85BQ	IDT71V67702S80BQ	IDT71P71204S200BQ	IDT71P72804S167BQI
IDT71V35781SA166BQ	IDT71V65703S75BQ	IDT71V67702S80BQI	IDT71P71204S200BQI	IDT71P72804S200BQ
IDT71V35781SA166BQI	IDT71V65703S80BQ	IDT71V67702S85BQ	IDT71P71204S250BQ	IDT71P72804S200BQI
IDT71V35781SA183BQ	IDT71V65703S80BQI	IDT71V67702S85BQI	IDT71P71204S250BQI	IDT71P72804S250BQ
IDT71V35781SA183BQI	IDT71V65703S85BQ	IDT71V67703S75BQ	IDT71P71604S167BQ	IDT71P72804S250BQI
IDT71V35781SA200BQ	IDT71V65703S85BQI	IDT71V67703S80BQ	IDT71P71604S167BQI	IDT71P73104S167BQ
IDT71V35781SA200BQI	IDT71V65802S100BQ	IDT71V67703S80BQI	IDT71P71604S200BQ	IDT71P73104S167BQI
IDT71V3578S133BQ	IDT71V65802S133BQ	IDT71V67703S85BQ	IDT71P71604S200BQI	IDT71P73104S200BQ
IDT71V3578S133BQI	IDT71V65802S133BQI	IDT71V67703S85BQI	IDT71P71604S250BQ	IDT71P73104S200BQI
IDT71V3578S150BQ	IDT71V65802S150BQ	IDT71V67802S133BQ	IDT71P71604S250BQI	IDT71P73104S250BQ
IDT71V3578S150BQI	IDT71V65803S100BQ	IDT71V67802S133BQI	IDT71P71804S167BQ	IDT71P73104S250BQI
IDT71V3579S65BQ	IDT71V65803S100BQI	IDT71V67802S150BQ	IDT71P71804S167BQI	IDT71P73204S167BQ
IDT71V3579S75BQ	IDT71V65803S133BQ	IDT71V67802S150BQI	IDT71P71804S200BQ	IDT71P73204S167BQI
IDT71V3579S75BQI	IDT71V65803S133BQI	IDT71V67803S133BQ	IDT71P71804S200BQI	IDT71P73204S200BQ

Note: For T & R (shipping method) "8" is added to the part number and for industrial grade, letter "I" is added to the part number.



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IDT71P73204S200BQI	IDT71P74804S200BQ			
IDT71P73204S250BQ	IDT71P74804S200BQI			
IDT71P73204S250BQI	IDT71P74804S250BQ			
IDT71P73604S167BQ	IDT71P74804S250BQI			
IDT71P73604S167BQI	IDT71P79104S167BQ			
IDT71P73604S200BQ	IDT71P79104S167BQI			
IDT71P73604S200BQI	IDT71P79104S200BQ			
IDT71P73604S250BQ	IDT71P79104S200BQI			
IDT71P73604S250BQI	IDT71P79104S250BQ			
IDT71P73804S167BQ	IDT71P79104S250BQI			
IDT71P73804S167BQI	IDT71P79204S167BQ			
IDT71P73804S200BQ	IDT71P79204S167BQI			
IDT71P73804S200BQI	IDT71P79204S200BQ			
IDT71P73804S250BQ	IDT71P79204S200BQI			
IDT71P73804S250BQI	IDT71P79204S250BQ			
IDT71P74104S167BQ	IDT71P79204S250BQI			
IDT71P74104S167BQI	IDT71P79604S167BQ			
IDT71P74104S200BQ	IDT71P79604S167BQI			
IDT71P74104S200BQI	IDT71P79604S200BQ			
IDT71P74104S250BQ	IDT71P79604S200BQI			
IDT71P74104S250BQI	IDT71P79604S250BQ			
IDT71P74204S167BQ	IDT71P79604S250BQI			
IDT71P74204S167BQI	IDT71P79804S167BQ			
IDT71P74204S200BQ	IDT71P79804S167BQI			
IDT71P74204S200BQI	IDT71P79804S200BQ			
IDT71P74204S250BQ	IDT71P79804S200BQI			
IDT71P74204S250BQI	IDT71P79804S250BQ			
IDT71P74604S167BQ	IDT71P79804S250BQI			
IDT71P74604S167BQI	IDT71P71204S167BQ			
IDT71P74604S200BQ	IDT71P71204S167BQI			
IDT71P74604S200BQI				
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IDT71P74804S167BQ				
IDT71P74804S167BQI				

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#### 2nd Level Reliability Test

#### Temp Cycle Conditions (IPC 9701)

Min. Temp	Max. Temp	Ramp Up/Down Time	High Temp Dwell	Low Temp Dwell	Cycle Duration
(°C)	(°C)	(°C/minute)	(minutes)	(minutes)	(minutes)
0 +0/-5	100 +5/-0	10 +0/-1	5 to 10	5 to 10	30 to 40

0.40mm Solder pad – 0.45 Solder Ball Diameter

0.37mm Solder pad – 0.40 Solder Ball Diameter

#### Weibull Probability Plot

40 mm:  $\beta = 12.49$   $\eta = 4000$   $\rho = 0.98$   
37 mm:  $\beta = 10.56$   $\eta = 3045$   $\rho = 0.98$

