



Cypress Semiconductor Corporation, 198 Champion Court, San Jose, CA 95134. Tel: (408) 943-2600

## PRODUCT CHANGE NOTIFICATION

**PCN:** PCN182407

**Date:** June 17, 2018

**Subject:** Qualification of JEDEC Shipping Tray for 96 Ball VFBGA 6.0x6.0x1.0 mm Package

**To:** FUTURE ELECTRONICS  
FUTURE ELE  
pcn.system@futureelectronics.com

**Change Type:** Minor

### Description of Change:

Cypress has qualified a JEDEC standard outline shipping tray for the 96 Ball VFBGA 6.0x6.0x1.0 mm package. The change increases the pocket density of the tray and minimum order quantity (MOQ).

The current JEDEC standard shipping tray with a 13 x 33 device matrix (429 units) will be replaced by a JEDEC shipping tray with a 14 x 35 device matrix (490 units).

The new tray has the following details.

Items	Current Tray	New Tray
Tray Manufacturer	PEAK	PEAK
Manufacturer Part No.	NH BG0606 1.5 1333 6	TX QFN0606 1.0 1435 6
Material Type	PP6	PP6
Number of Units/Tray	429	490
1 <sup>st</sup> Pocket X Position	15.90 ± 0.13 mm	7.90 ± 0.13 mm
1 <sup>st</sup> Pocket Y Position	15.45 ± 0.13 mm	8.15 ± 0.13 mm
Pocket X Pitch	8.85 ± 0.13 mm	8.80 ± 0.13 mm
Pocket Y Pitch	8.75 ± 0.13 mm	9.20 ± 0.13 mm
Top Pocket Length	6.20 ± 0.06 mm	6.25 ± 0.08 mm
Top Pocket Width	6.20 ± 0.06 mm	6.25 ± 0.08 mm
Package Seating Height	5.62 mm	5.87 mm
Minimum Order Qty (MOQ)	429	490

No changes were made to the following attributes:

- Tray Length and Width
- Tray Stacking height
- Unit orientation in tray pocket

- Temperature Rating
- Color
- JEDEC compliance

**Benefit of Change:**

This change is part of Cypress cost saving initiative. It will accommodate more units per tray for shipping to customers and reduce indirect material cost.

**Part Numbers Affected: 11**

Please refer to the attached 'Affected part list' file for a list of all part numbers affected by this change. Note that any new parts that are introduced after the publication of this PCN will include all changes in this PCN.

**Qualification Status:**

As per Cypress specified list of changes, this change has been qualified through a series of tests identified in Qualification Test Plan # 172001. This QTP report can be found attached to this PCN or by visiting [www.cypress.com](http://www.cypress.com) and typing the QTP number in the keyword search window.

**Approximate Implementation Date:**

This change will be implemented 90 days from the date of this notification. Effective 90 days from the date of this notification, Cypress will transition to shipments with the new tray. Current tray will be depleted before the implementation of the new tray. During the transition period, the affected part numbers will be supplied with either the current tray or new tray. No mix tray in one shipment.

**Anticipated Impact:**

The change involved tray critical dimensions which will impact the pick and place equipment. Cypress recommends that customers review these changes against their current pick and place programs and equipment parameters.

**Method of Identification:**

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the lot number marked on the package.

**Response Required:**

No response is required.

For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at [pcn\\_adm@cypress.com](mailto:pcn_adm@cypress.com).

Sincerely,

Cypress PCN Administration

# Cypress Semiconductor Finish Qualification Report

**QTP# 172001 VERSION \*\*  
May 2018**

<b>Bangkok-Thailand (SB) Finish Site</b>
<b>96-Ball VFBGA 6.0x6.0x1.0mm</b>

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT**  
[reliability@cypress.com](mailto:reliability@cypress.com) or via a CYLINK CRM CASE

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**Approved By:**  
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Reliability Director

**FINISH QUALIFICATION HISTORY**

<b>QTP Number</b>	<b>Description of Qualification Purpose</b>	<b>Date</b>
172001	Qualification of 96-Ball VFBGA 6.0x6.0x1.0mm at Bangkok-Thailand (SB) Finish Site	May 2018

## PROCESS ENGINEERING QUALIFICATION PERFORMED PER SPECIFICATION REQUIREMENTS

Test	Test Condition (Reference Specifications)	Result P/F
Bend Test	No separation along pocket and ridge area	P
CADFIT Analysis	Pass POD End flash Criteria	P
Detaping	No cover tape tearing	P
Dimensional Measurement	POD Drawing-JESD22-B100	P
Drop Test	Dry Packed Material: No tears punctures Boxes: No Complete structural damage, No progressive crumpling/deformed, no tears punctures	P
External Visual	MIL-PRF-38535, MIL-STD-883, METHOD 2009	P
Functionality Test	Pass Manufacturability	P
PBFT	Min $\geq$ 30gr Average 50 $\pm$ gr Max $\leq$ 70gr	P
Split PBFT Test	Delta of Sprocket side and its opposite side: 5 gr Range: 20 gr	P
Substance Check	European Union RoHS 2002/95/E REACH XVII	P
Surface Resistivity Measurement	Conductive Packing/shipping material: 10 <sup>5</sup> $\Omega$ /sq Static dissipative Packing/shipping material: 10 <sup>5</sup> -10 <sup>12</sup> $\Omega$ /sq	P



## Reliability Test Data

QTP #: 172001

Device	Assy Lot #	Package	Finish Site	Duration	Samp	Rej	Failure Mechanism
<b>STRESS: BEND TEST</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	1 Strip	0	
<b>STRESS: CADFIT ANALYSIS</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	1	0	
<b>STRESS: DETAPING</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	10 Strips	0	
<b>STRESS: DIMENSIONAL MESAUREMENT</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	25	0	
<b>STRESS: DROP TEST</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	2940	0	
<b>STRESS: EXTERNAL VISUAL</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	2940	0	
<b>STRESS: FIT AND FORM</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	25	0	
<b>STRESS: FUNCTIONALITY TEST</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	2940	0	
<b>STRESS: LEAD SCAN</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	2940	0	
<b>STRESS: PEEL BACK FORCE TEST</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	30	0	
<b>STRESS: SPLIT PEEL BACK FORCE TEST</b>							
N/A	RFB3616	B 96A	SB-Thailand	COMP	10	0	



## ***Reliability Test Data***

**QTP #: 172001**

<b><i>Device</i></b>	<b><i>Assy Lot #</i></b>	<b><i>Package</i></b>	<b><i>Finish Site</i></b>	<b><i>Duration</i></b>	<b><i>Samp</i></b>	<b><i>Rej</i></b>	<b><i>Failure Mechanism</i></b>
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***STRESS: SUBSTANCE CHECK***

N/A	RFB3616	B 96A	SB-Thailand	COMP	1	0	
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***STRESS: SURFACE RESISTIVITY MEASUREMENT***

N/A	RFB3616	B 96A	SB-Thailand	COMP	25	0	
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***STRESS: WARP TEST***

N/A	RFB3616	B 96A	SB-Thailand	COMP	11	0	
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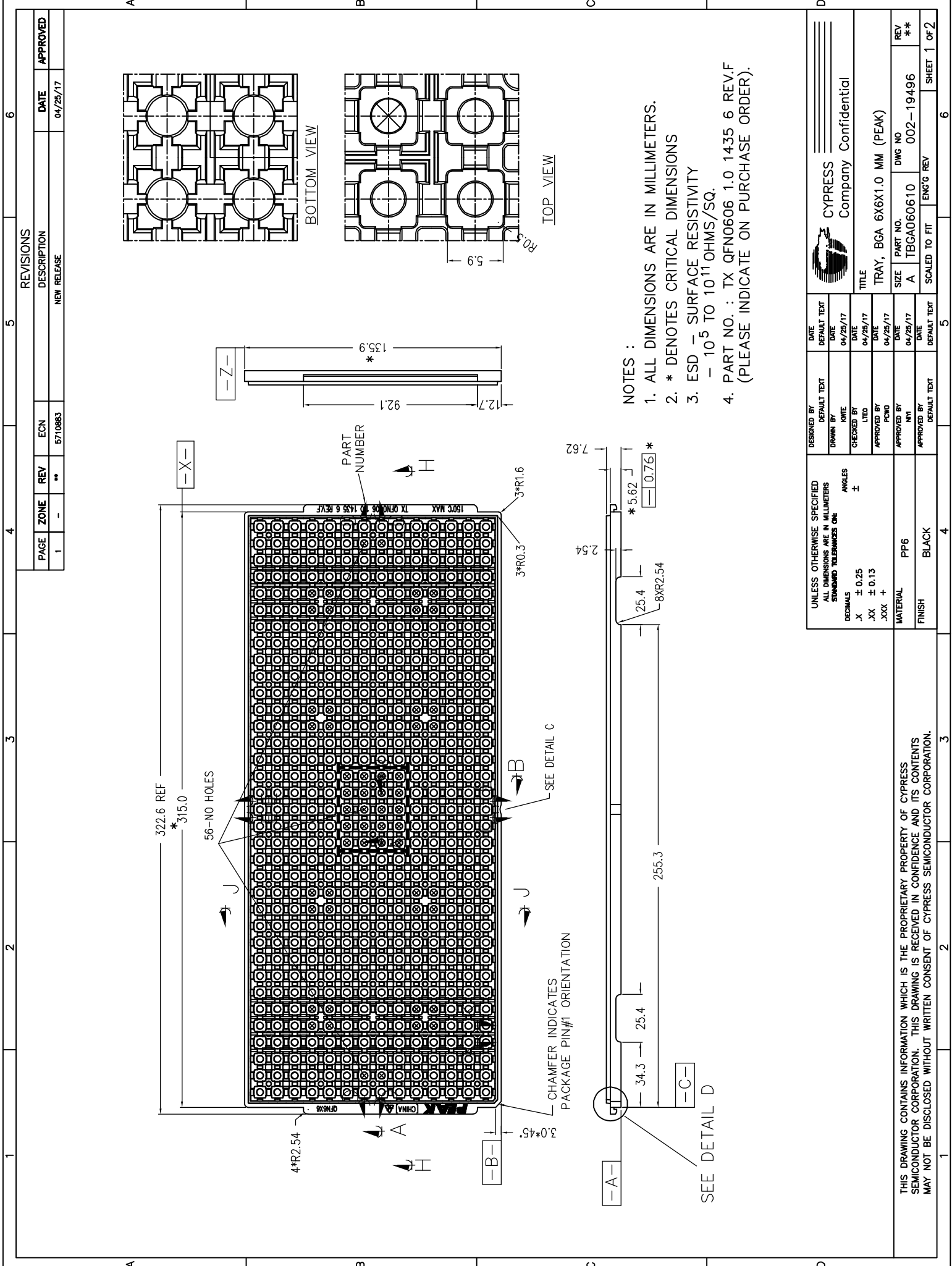


## Document History Page

Document Title: QTP# 172001: Qualification of 96-Ball VFBGA 6.0x6.0x1.0mm at Bangkok-Thailand (SB) Finish Site  
Document Number: 002-23801

Rev.	ECN No.	Orig. of Change	Description of Change
**	6163125	JYF	Initial spec release.





NOTES :

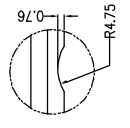
- 1. ALL DIMENSIONS ARE IN MILLIMETERS.
- 2. \* DENOTES CRITICAL DIMENSIONS
- 3. ESD - SURFACE RESISTIVITY  
- 10<sup>5</sup> TO 10<sup>11</sup> OHMS/SQ.
- 4. PART NO. : TX QFN0606 1.0 1435 6 REV.F  
(PLEASE INDICATE ON PURCHASE ORDER).

<p>THIS DRAWING CONTAINS INFORMATION WHICH IS THE PROPRIETARY PROPERTY OF CYPRESS SEMICONDUCTOR CORPORATION. THIS DRAWING IS RECEIVED IN CONFIDENCE AND ITS CONTENTS MAY NOT BE DISCLOSED WITHOUT WRITTEN CONSENT OF CYPRESS SEMICONDUCTOR CORPORATION.</p>		1		2		3		4		5		6	
		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS STANDARD TOLERANCES ON:		DESIGNED BY DEFAULT TEXT		DATE		CYPRESS Company Confidential		TITLE TRAY, BGA 6X6X1.0 MM (PEAK)			
		DECIMALS .X ± 0.25 .XX ± 0.13 .XXX +		DRAWN BY KME		DATE 04/25/17				SIZE A		REV **	
		ANGLES ±		CHECKED BY LTD		DATE 04/25/17				PART NO. TBGA060610		DWG NO 002-19496	
				APPROVED BY POND		DATE 04/25/17				SCALED TO FIT		ENG'S REV	
		MATERIAL PP6		APPROVED BY NYI		DATE 04/25/17							
		FINISH BLACK		APPROVED BY DEFAULT TEXT		DATE							

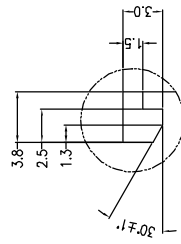




DETAIL C

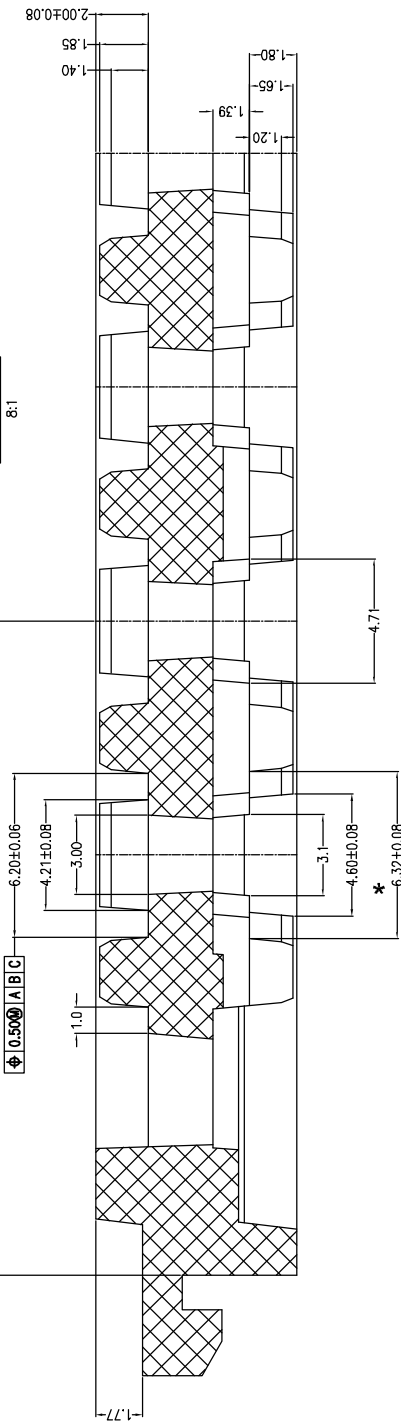


NOTE:  
SCALLOP IS CENTERED  
ON SIDE OF TRAY

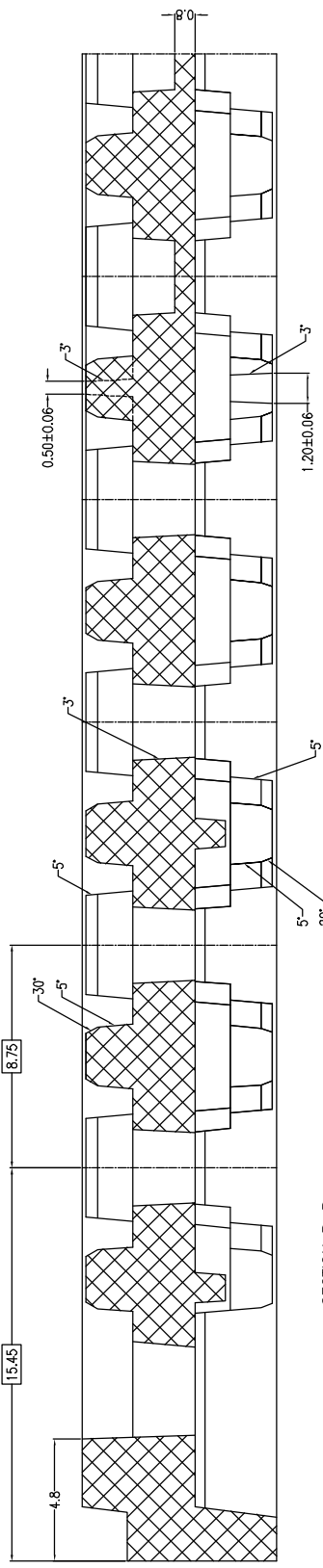


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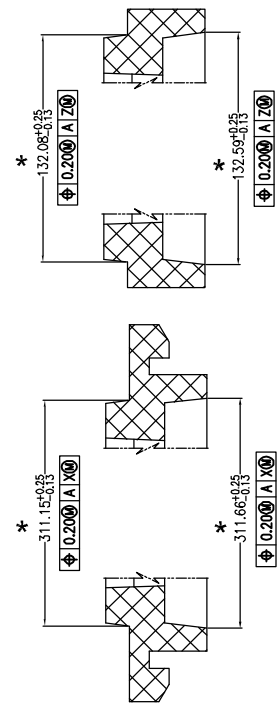
SECTION A-A



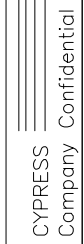
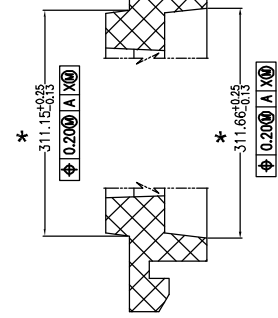
SECTION B-B



SECTION J-J



SECTION H-H



TITLE			
TRAY, VFBGA 6X6X1.0 MM (PEAK)			
SIZE	PART NO.	DWG NO	REV
A	NHBG06061.5-*	001-00352	*D
SCALED TO FIT		ENG'G REV	SHEET 2 OF 2

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Item	Marketing Part Number
1	CYPD4155-96B XI
2	CYPD4255-96B XI
3	CYPD5225-96B XI
4	CYPD5235-96B XI
5	CYPD5236-96B XI
6	CP8767AT
7	CP8768AT
8	CP8769AT
9	CP8769BT
10	CP8770AT
11	CP8770BT