



# COSMETIC SPECIFICATION

## 1. PURPOSE:

The purpose of this document is to establish “Acceptable” or “Not Acceptable” criteria for the cosmetic aspect of Molex’s HS DOCK and HS DOCK+ connectors. This document does not apply where there is a concern for mechanical or electrical functionality.

## 2. APPLICATION:

- 2.1. This specification applies to the following HS DOCK and HS DOCK+ connectors: Right Angle Floating HS DOCK, series 75019 (exclude parts 75019-0100/-0301/-0302/-0303/-0304); Right Angle Floating HS DOCK+, series 74149; Right Angle Fixed HS DOCK, series 75018 (exclude part 75018-0100/-0301/-0302/-0303/-0304); Right Angle Fixed HS Dock+, series 74148; and Vertical Fixed HS DOCK, series 75140.
- 2.2. The cosmetic criteria applies to both gold and nickel plated products
- 2.3. The examples included are intended to establish a base line for customer acceptance and are not limited to the examples shown. Contact Molex product marketing for additional clarification.
- 2.4. In cases where product drawing notes conflict with this specification, the drawing notes take precedence.
- 2.5. In areas of conflict between the general cosmetic specification document, PS-45499-002, and this document, this document takes priority.

## 3. REFERENCE DOCUMENTS:

- 3.1. PS-45499-002

## 4. DEFINITIONS:

### 4.1. Surface Classification

Molex HS DOCK and HS DOCK+ conform to Class C (Non decorative surface)

Any surface not readily visible to the end customer except when unit is moved or disassembled, **or**  
Any surface that has no impact on a direct customer’s ability to process Molex’s connectors.

4.2. End Customer – The end user of the Molex product (original equipment manufacturer, etc.)

4.3. Direct Customer – The “ship to” customer (contract manufacturer, distributor, etc.)

### 4.4. Descriptions of Cosmetic Conditions:

4.4.1 Broken/Cracked/Missing: Features that are not present

4.4.2 Color Variation (Natural discoloration / variation from the plating process): Variation of the surface color intensity or shade across parts. Change from original color or inconsistent color within the same part.

4.4.3 Fingerprints: Discoloration of the surface as a result of a fingerprint

4.4.4 Dents: Local material depressions.

4.4.5 Knit / Weld Lines: A visible line formed at the intersection of material flow.

4.4.6 Missing Plating: plating that did not cover specific locations

4.4.7 Missing/Scraped Off Plating: plating that has been removed during a process

4.4.8 Nick: a small notch or chip that exposes the plastic or underplate

4.4.9 Rub Marks: Markings caused by tooling rubbing against the surface

4.4.10 Short-fill: An area not completely formed during the molding process.

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<u>DOCUMENT NUMBER:</u> <b>PS-45499-003</b>		<u>CREATED / REVISED BY:</u> Timothy Ibarra 2015/04/14	<u>CHECKED BY:</u> Brendan OMalley 2015/04/14	<u>APPROVED BY:</u> Steve Miller 2015/04/14



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4.5. Evaluation Criteria not covered: Please refer to cosmetic spec PS-45499-002 for Conditions not addressed by this document.

## 5. RECORDS AND REPORTS

5.1 None

## 6. PROCEDURE:

6.1 Viewing Magnification:

Class C – view with the unaided eye (no magnification).

6.2 Viewing Distance:

Class C – 600 mm / 24 inches

6.3 Viewing Time:

Class C – 3 seconds

6.4 Viewing Angle:

Class C – at angle approximately 45 degrees to the normal surface to be inspected

6.5 Viewing Illumination

Light source shall be cool white fluorescent light @ 80-100 foot candles of at inspection surface, unaided and viewed in a manner that duplicates the typical end user of the product.

6.6 Evaluation Criteria

During cosmetic inspection, only visual qualities (appearance) of the part surface shall be considered

Class “A” surfaces shall be manipulated during inspection to achieve maximum reflection of a light source.

Class “B” and Class “C” surfaces shall NOT be manipulated during inspection.

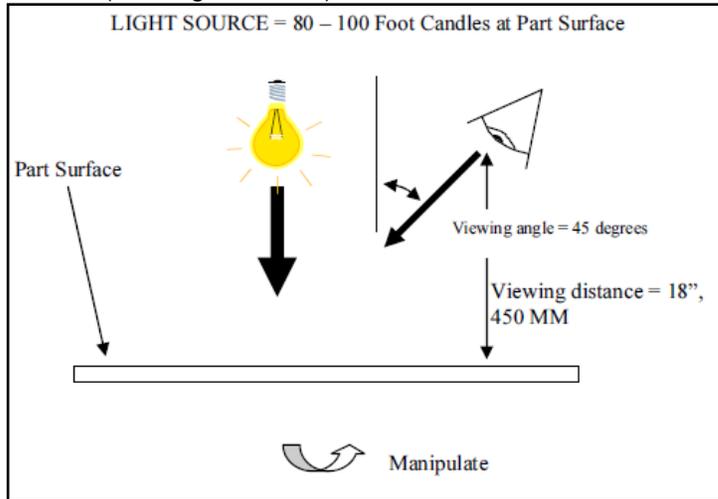
Refer to Class A, Class B and Class C viewing condition figures

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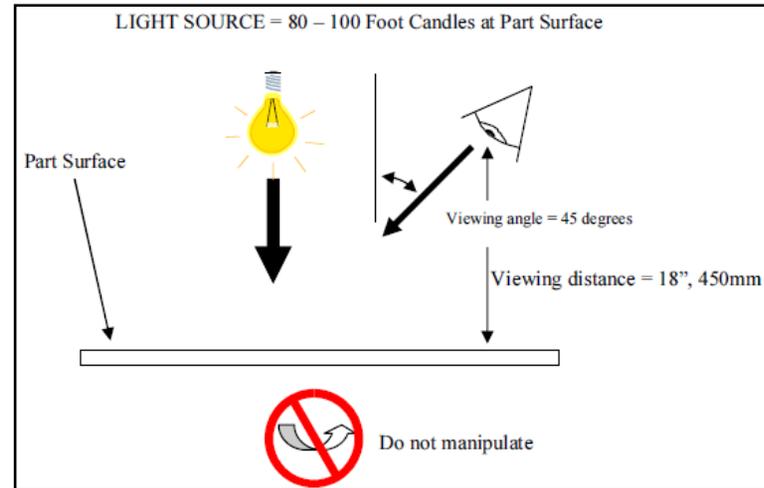


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Class A (Viewing Condition):



Class B & C (Viewing Conditions):

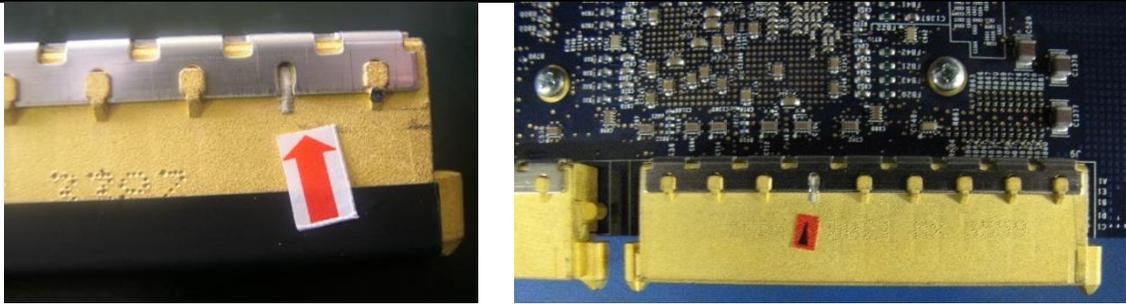
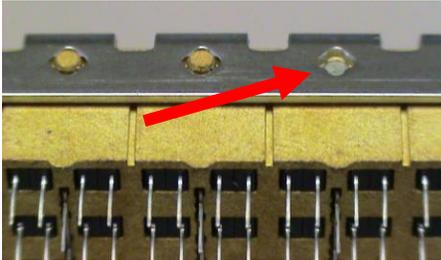


Codes	Class A	Class B	Class C
Viewing Distance	450 mm (18in.)	450 mm (18in.)	600 mm (24in.)
Viewing Time	10 seconds	5 seconds	3 seconds
Light Source	80 -100 Foot-candles at inspection surface	80 -100 Foot-candles at inspection surface	80 -100 Foot-candles at inspection surface
Viewing Method	Manipulate	Don't manipulate	Don't manipulate

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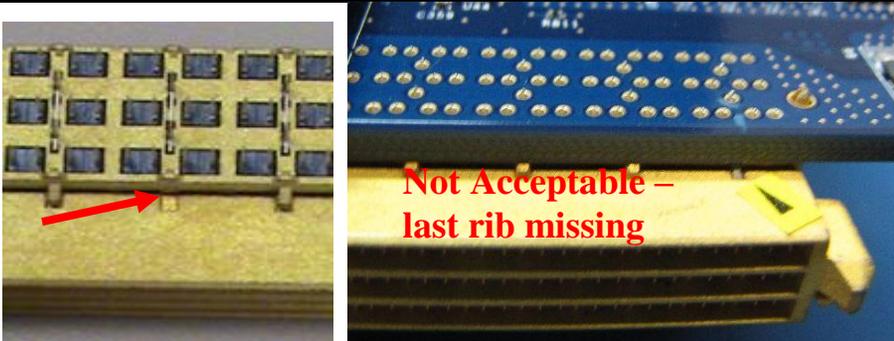
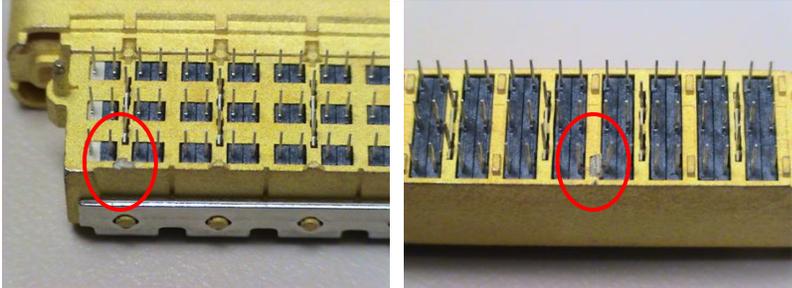
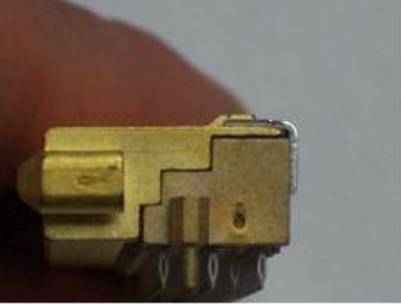
# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Broken/Cracked/Missing Retention Clip Ribs		Acceptable up to 1 missing rib. First and last rib features should be present. No loose material.
Broken/Cracked/Missing Retention Clip Pegs		Acceptable up to 2 missing pegs. First and last peg features should be present. No loose material.

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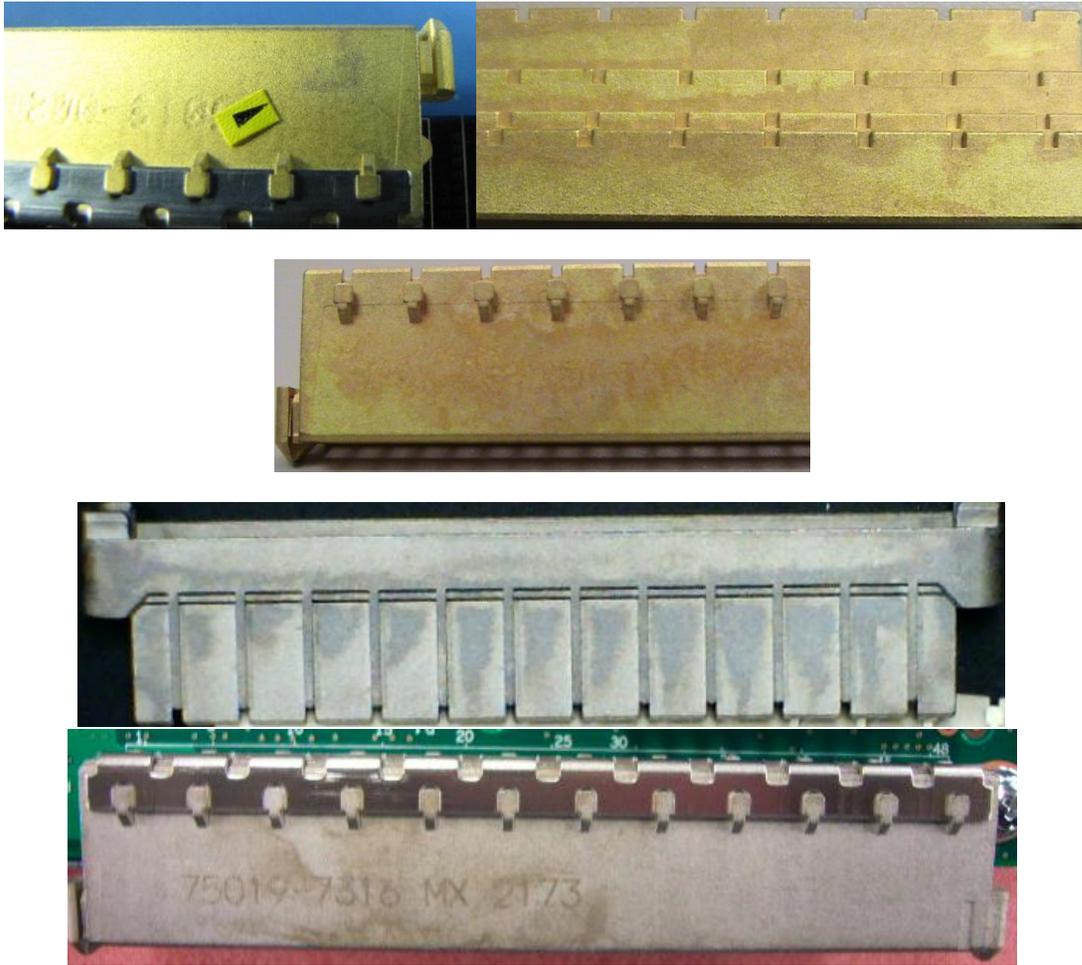
# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Broken/Cracked/Missing Pad/Alignment Feature		Acceptable up to 1 missing pad/alignment feature. First and last pad/alignment features should be present. No loose material.
Broken/Cracked/Missing PCB Standoffs		Acceptable up to 1 missing standoff. First and last standoffs should be present. No loose material.
Component Color Difference		Acceptable

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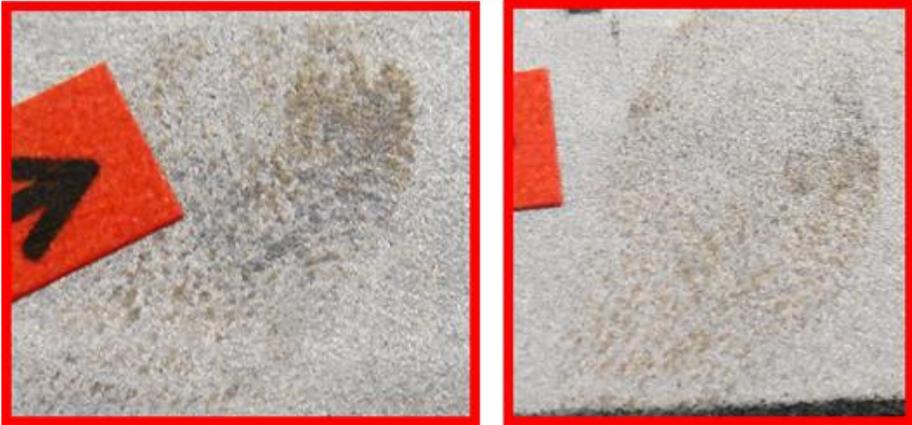
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Condition	Illustration	Acceptance Criteria
Color Variation (pictures include both gold and nickel plated parts)		Acceptable

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Condition	Illustration	Acceptance Criteria
Fingerprints	  	Unacceptable  Note: Removable fingerprints are acceptable.

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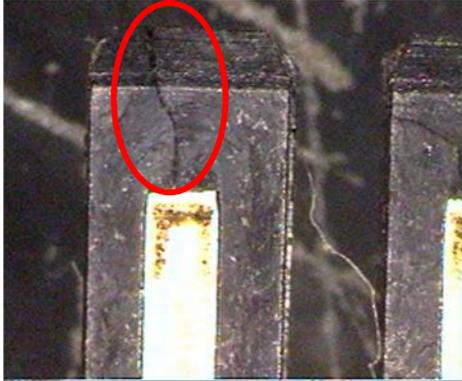
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Knit / Weld Lines		Acceptable if not visibly separated by 0.05 mm/.002 in or more.
Knit Line Separation on Wafers in Mating Interface		Weldless Wafer: Acceptable up to 0.05 mm/.002 in wide separation  Welded Wafer: Acceptable 0.10 mm/ .004 in wide separation

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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Nicks and Dents On Mating Interface		Acceptable as long as there is no potential of loose debris and is no larger than 1.5 mm long (.060" diameter) x 0.50 mm deep.

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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
<p>Nicks On Housing surfaces</p>		<p>Length: 1.5mm Max (.060 in diameter); Depth: 0.05 mm. No loose debris. 3 Maximum</p>

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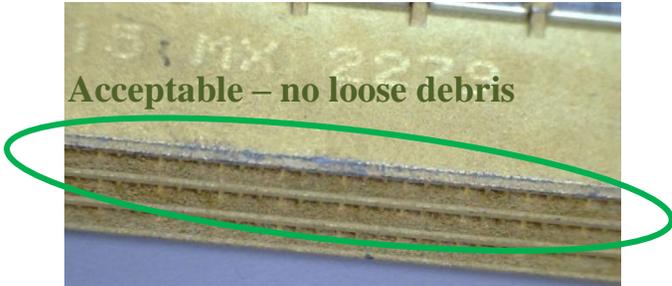
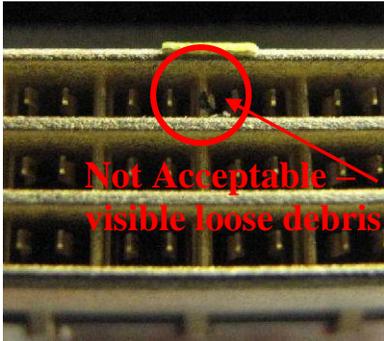
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Missing Plating Around Gate Area		Acceptable - Maximum diameter .150 in /3.81mm – around gate
Missing Plating on Mating Interface		Acceptable as long as there is no potential of loose debris
Peeled Plating on Mating Interface		Unacceptable

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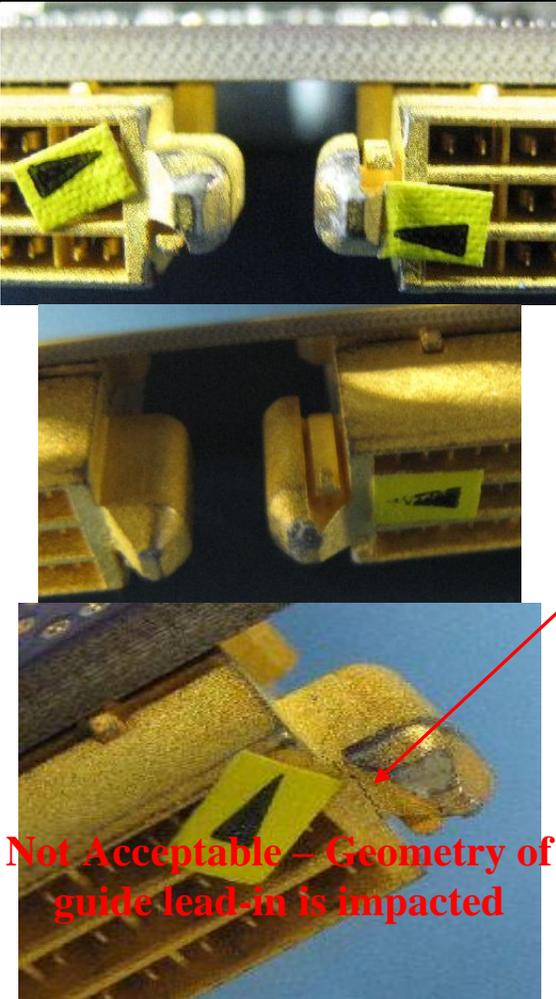
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Missing Plating on Guide Features	 <p data-bbox="806 1092 1362 1182"><b>Not Acceptable - Geometry of guide lead-in is impacted</b></p>	Acceptable as long as guide feature geometry is not changed and as long as there is no potential of loose debris / Fractures are not allowed

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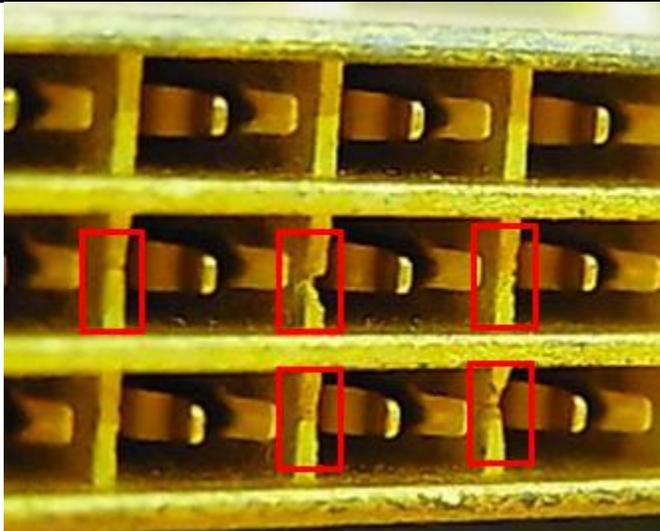
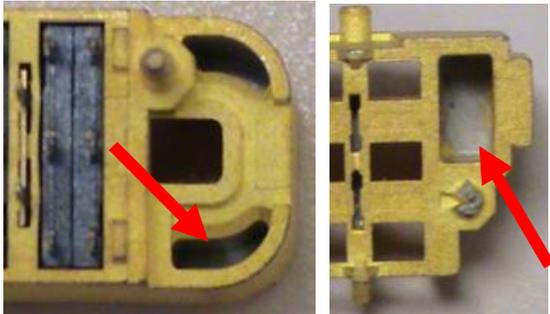
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Shortfill on the mating face of the floating connector walls		Unacceptable
Missing Plating In Core outs		Acceptable as long as there is no potential of loose debris

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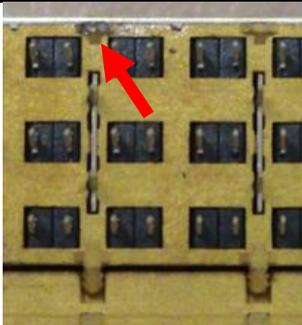
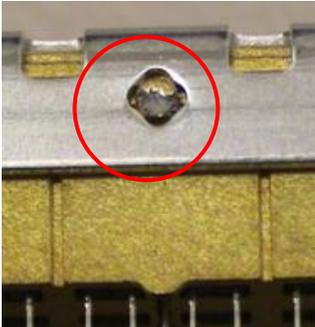
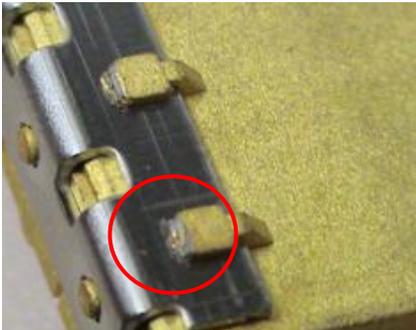
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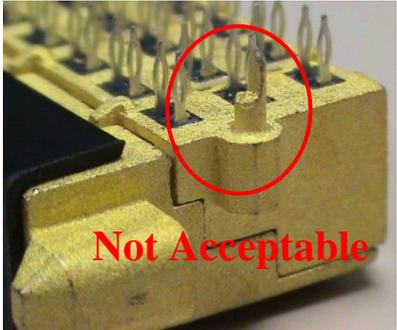
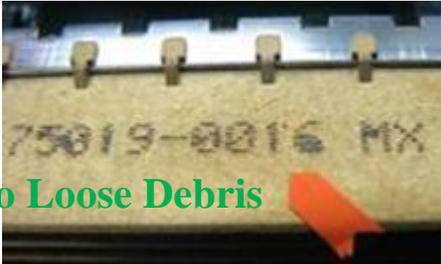
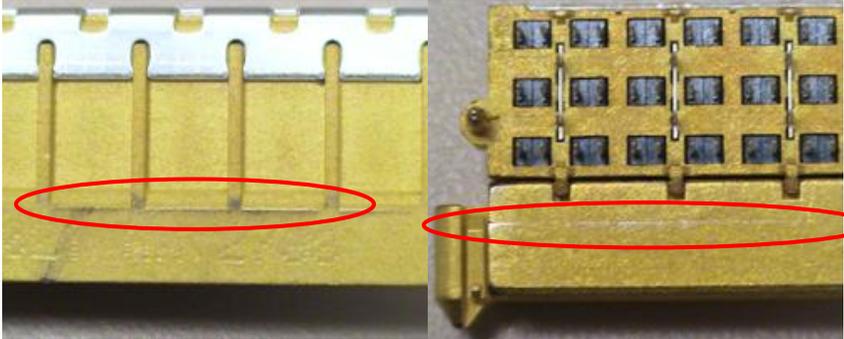
# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Missing/Scraped Off Plating Retention, Pad/Alignment Features		Acceptable as long as there is no potential of loose debris
Missing/Scraped Off Plating Retention, Pad/Alignment Features		Acceptable as long as there is no potential of loose debris
Missing/Scraped Off Plating Retention, Pad/Alignment Features		Acceptable as long as there is no potential of loose debris

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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Short fill pegs		Acceptable along as the peg measures no less than 2.85 mm/.112 in from the base
Missing Plating at part identification		Acceptable as long as there is no potential of loose debris
Rub Marks		Acceptable / if no loose debris

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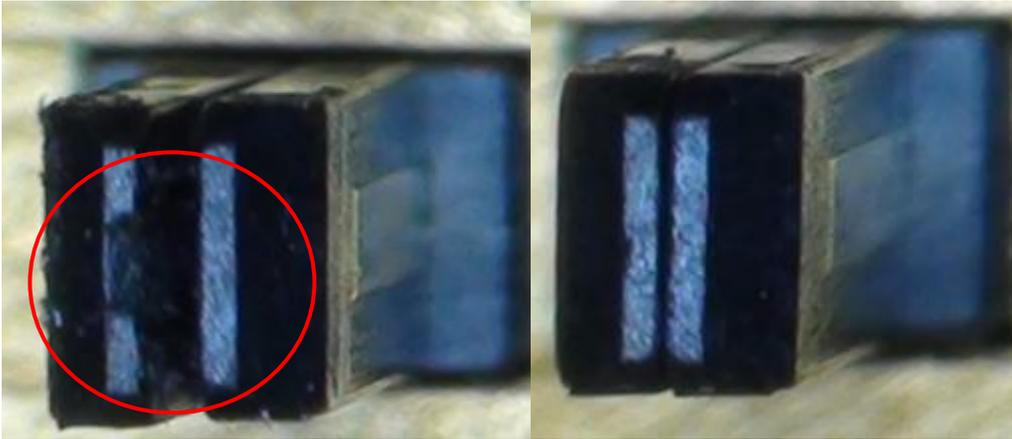
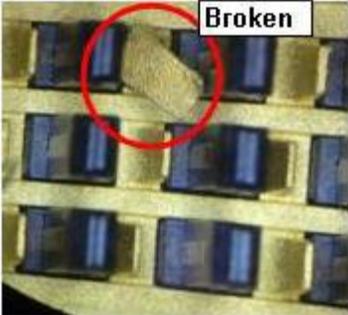
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Unwelded wafer	 <p data-bbox="573 740 968 784"><b>Gap - Not Acceptable</b></p> <p data-bbox="1178 732 1556 776"><b>Acceptable - No Gap</b></p>	Acceptable if 1 maximum contact finger per wafer is unwelded / the other pairs must be flush together
Broken Ground Fingers		Unacceptable

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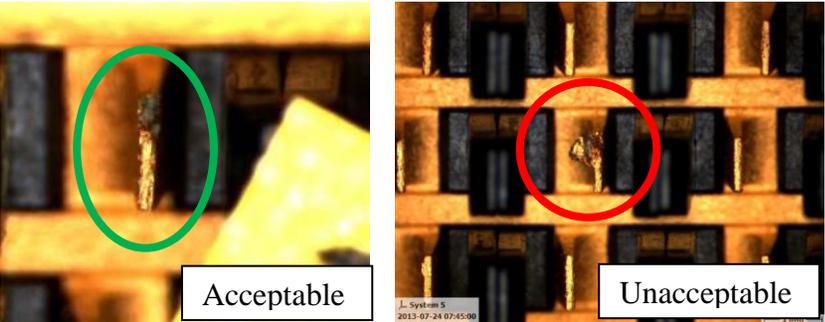
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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Missing Ground Fingers		Unacceptable
Ground Fingers with Damage		Acceptable / if no loose debris

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# COSMETIC SPECIFICATION

Condition	Illustration	Acceptance Criteria
Deformed Ground Fingers		Acceptable if it fits gage

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## 7. REVISION HISTORY

Revision	Approval / Date	Description of Change
A	Steve Miller 11/20/08	Initial release
B	Steve Miller 2/13/09	Add Missing Plating at part identification
C	Steve Miller 10/12/2009	Add Nick Illustration
D	Steve Miller 10/05/2010	Add More Illustrations
E	Steve Miller 5/1/2014	Multiple changes made to acceptance criteria to accommodate customer requests
F	Steve Miller 4/14/2015	Update Color Variation section to include finger prints as being unacceptable
G	Steve Miller 5/11/2015	Separate Color Variation and Finger prints – add removable finger prints acceptable

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