

Cosmetic Criteria of Modular Jacks Connectors Series

1. SCOPE

1.1. Content

This specification describes the acceptable requirements and the not acceptable cosmetic quality criteria for all single and multi-port metal Modular Jacks connectors. Examples include but are not limited to parts, mechanical assemblies and cosmetic surfaces.



1.1. NOTE

In the event of conflict the following order of precedence will prevail:

- Documents agreed upon as applicable to the specific situation such as accept parts on deviation.
- Purchase order and or specific contract
- The applicable engineering drawing and or specification.
- This Workmanship Specification

2. DEFINITIONS

2.1. Surface Classification

- A. Class "A" Surface that will be in constant view of the customer.
- B. Class "B" There is a possibility the surface will be viewed by the customer before final assembly.
- C. Class "C": This surface has a minimal chance of being viewed before final assembly and is not easily viewed after final assembly.



2.1. NOTE

Surfaces not specified shall be considered Class C.

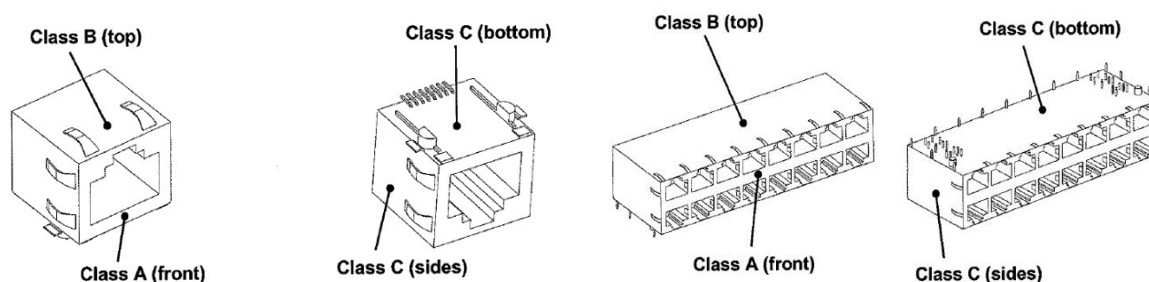


Figure 1

3. GENERAL INSPECTION REQUIREMENTS

Cosmetic inspection for all suppliers shall use the time and distance method of inspection.



3.1. NOTE

The cosmetic standards as defined in this Workmanship Specification shall be used for training personnel, checking cosmetic surface quality produced by any process and used in making acceptable and not acceptable decisions.

3.1. Viewing Conditions

Unless otherwise specified, light source shall be cool white fluorescent light at 80 to 100 foot-candles at inspection surface, unaided and viewed in a manner that duplicates the typical end use of the product. During a cosmetic inspection, only visual qualities (appearance) of the part surface shall be considered. Surfaces shall be viewed without the aid of magnification, at an angle approximately 45 degrees to the normal of the surface to be inspected. 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.

A. Time and Distance per Designated Area or Surface

Codes	Class A	Class B	Class C
Viewing Distance	450 mm [18 in.]	450 mm [18 in.]	450 mm [18 in.]
Viewing Time	3 seconds	2 seconds	1 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	Do Not Manipulate	Do Not Manipulate

B. Class "A"

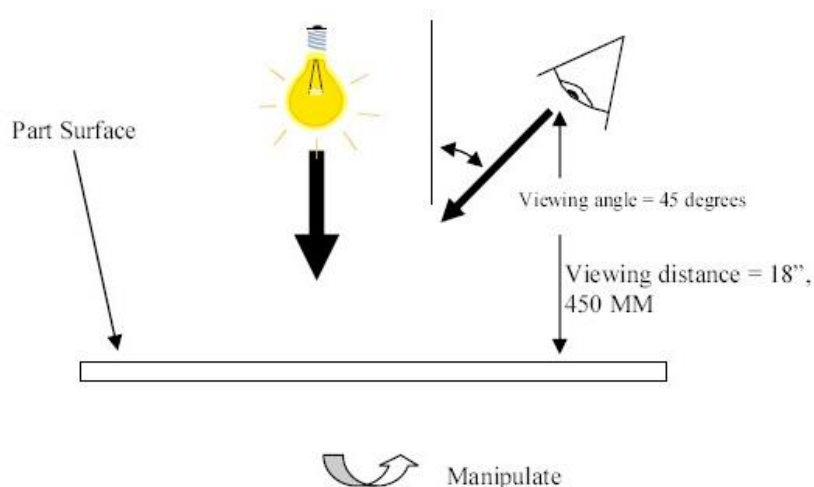


Figure 2

C. Class "B" and "C"

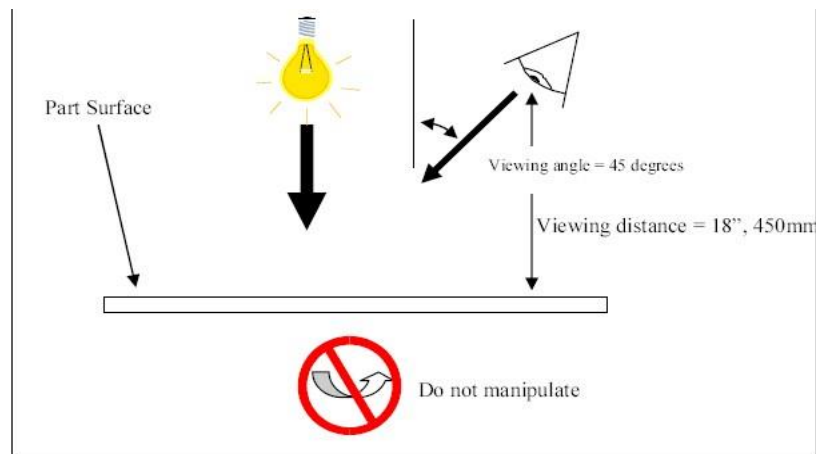


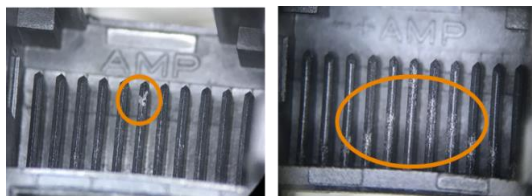
Figure 3

4. ACCEPTABLE CRITERIA

- A. Class A, Class B, or Class C acceptable defects should not affect fit or function. In such cases as affecting fit and or function the parts are automatic not acceptable.
- B. For general inspection requirements and viewing conditions reference Paragraph 3.
- C. This specification applies to all Modular Jacks Series.

5. INSPECTION PROCEDURE

5.1. Whiteness points on HSG surface

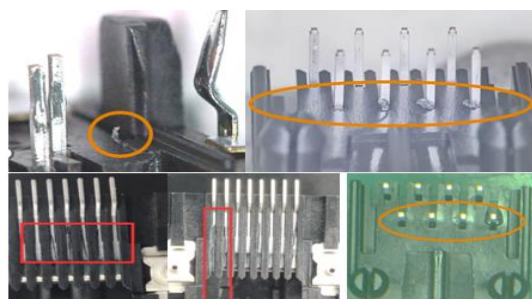


ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

Remark: Due to the product structure, which might cause the glass fiber flow on the surface in the molding process, this is the characteristic of product fit, so it can be acceptable.

5.2. HSG burr /Scratch



ACCEPTABLE

Class A	Class B	Class C
N/A	ACCEPTABLE	ACCEPTABLE

Remark: The HSG burr cause during the contact insertion process, it cannot fully be avoided in assembly process. If it does not affect function and fit. This is acceptable.

5.3. HSG damage

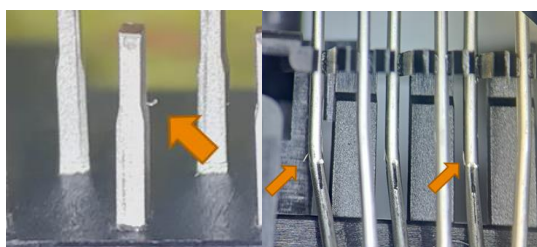


ACCEPTABLE

Class A	Class B	Class C
NOT ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

Remark: Damage parts don't impact on product's form fit and function

5.4. Tin Burr on the soldered pins side

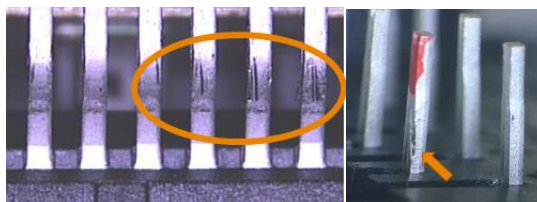


ACCEPTABLE

Class A	Class B	Class C
N/A	ACCEPTABLE Tin burr within 0.5mm *L	ACCEPTABLE Tin burr within 0.5mm *L

Remark: it cannot be avoided during the contact insertion and bending process. There is brush the burr and air blow to clean the burr in the assembly process.

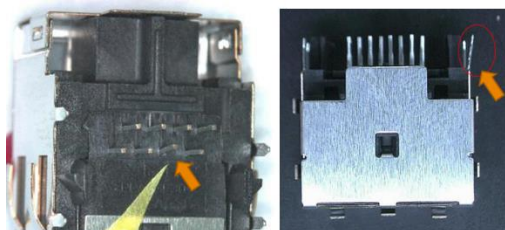
5.5. Scratch on the soldered Pins



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE No Base material exposed		

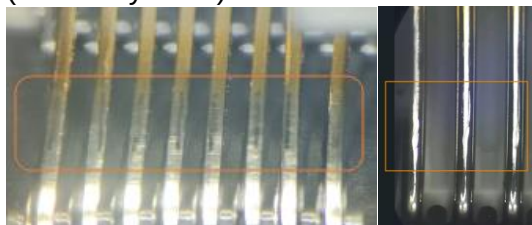
5.6. Slight Pins and shell Legs deformation.



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE Remark: There is 100% T/P Gauge check in process, if it can pass the gauge or PCB, it's acceptable.		

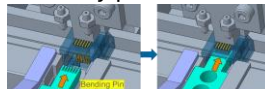
5.7. Scratch on the mating pins side (Assembly mark)



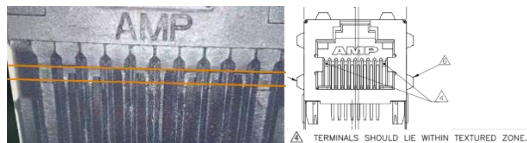
ACCEPTABLE

Class A	Class B	Class C
<p>ACCEPTABLE</p> <p>No Base material exposed</p>		

Remark: This is the assembly mark on pin, this mark is generated by Pin bending and inserting, it is a necessary assembly process that cannot be avoided.



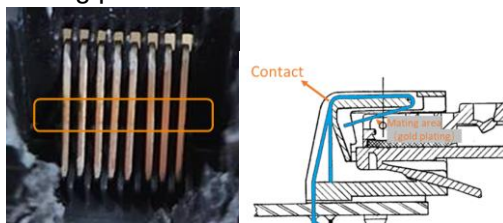
5.8. Pins height difference



ACCEPTABLE

Class A	Class B	Class C
<p>ACCEPTABLE</p> <p>The pins lie within the specified range, it's acceptable.</p>		

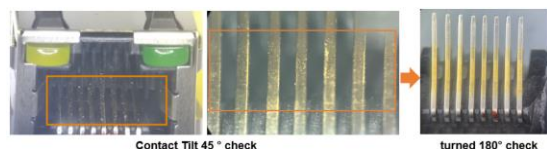
5.9. Gold plate area on the mating pins



ACCEPTABLE

Class A	Class B	Class C
<p>ACCEPTABLE</p> <p>Remark: only localized gold plate for all Modular Jacks connector, if the gold plating thickness of mating area meets the drawing specifications, it's acceptable.</p>		

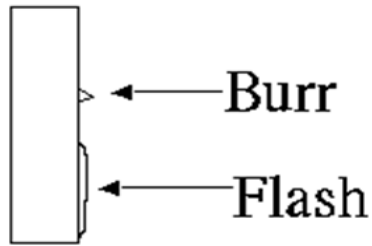
5.10. Surface Finish on the mating pins.



ACCEPTABLE

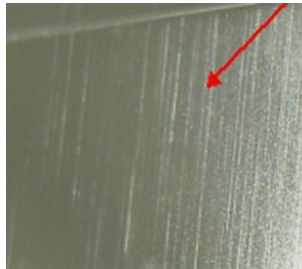
Class A	Class B	Class C
<p>ACCEPTABLE</p> <p>Remark: the plated surface is good, differences due to different look angles, reflective and batch materials, there is 100% E-test check in assemble process, if it will not affect the function, it's OK.</p>		

5.11. Flash and Burr (Cannot be easily removed)



Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
2.54mm*L x 0.05mm*W Max.	N/A	N/A
NOT ACCEPTABLE	NOT ACCEPTABLE	NOT ACCEPTABLE
Protrusion from the flat surface	Impact on product's form fit and function	

5.12. Surface Finish on the shell.

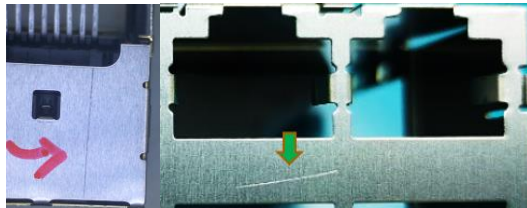


ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

Remark: If the width of texture is within 0.076mm

5.13. Scratch on the shell of post plated



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
Two scratches within 6.35mm*L x 0.4mm*W each	Two scratches within 25.4mm *L x 0.4mm*W each Three scratches within 6.35mm*L x 0.4mm*W each	

Remark: Visible but cannot be felt with thumbnail and no Base material exposed.

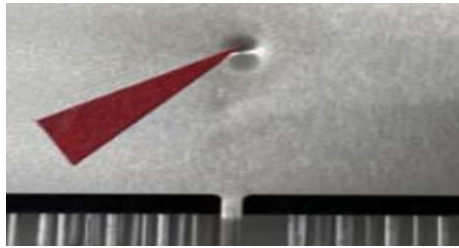
5.14. Tooling mark on the shell



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
Tooling mark with 2mm max. height		

5.15. Dents/Pits on the shell



ACCEPTABLE

Class A	Class B	Class C
NOT ACCEPTABLE	ACCEPTABLE Four Dents/pits within 0.76mm L x 0.25mmW each	ACCEPTABLE Don't impact on product's form fit and function.

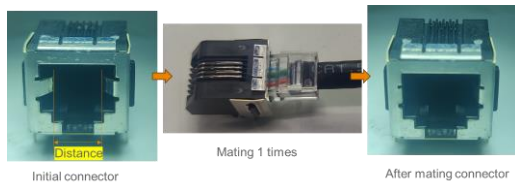
5.16. Oxidation, Stains on plating coating, Black dots, or Base material exposed.



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
Oxidation on sheared edges of pre-plated metal shield/Contact.	Oxidation on sheared edges of pre-plated metal shield/Contact.	Oxidation on sheared edges of pre-plated metal shield/Contact.
NOT ACCEPTABLE	NOT ACCEPTABLE	NOT ACCEPTABLE
Oxidation, Black dots	Impact on product's function	

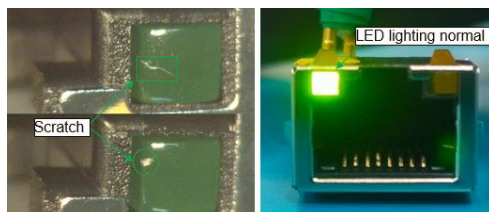
5.17. Shell spring on mating side



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE About shell spring, after mating, this spring will be pressed down, see below picture. It's normal. If there is no problem with plug/unplug, it's OK.		

5.18. Scratch on the LED



ACCEPTABLE

Class A	Class B	Class C
ACCEPTABLE Two scratches within 6.35mm*L x 0.4mm*W each		

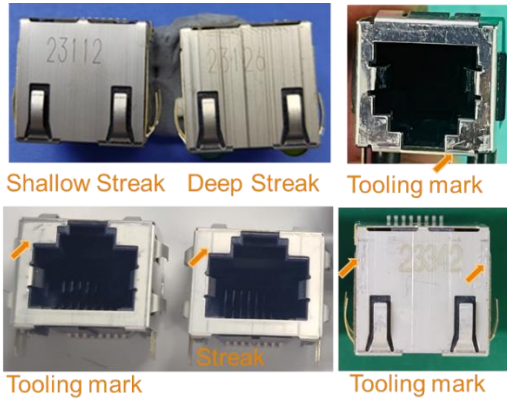
Remark: Scratch on the surface of LED colloid, if it does not affect the LED lighting, it's OK. There is 100% E-Test and IV3 CCD check LED color and light check in process.

6. INSPECTION PROCEDURE FOR THE SHELL OF PRE-PLATED TIN & HOT AIR-LEVELLED TIN (HALT) /HOT DIP TINNING (HDT).

Pre-plated tin, HALT, HDT process are Tin coating on copper and copper alloy strip. Plated copper use as raw material in stamping process, followed with assembly process. Streak and tooling mark are unavoidable when go through such process.

Also refer to the cosmetic criteria for material as TEC 101-391.

6.1. Tooling mark and Stria on shell



Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

ACCEPTABLE

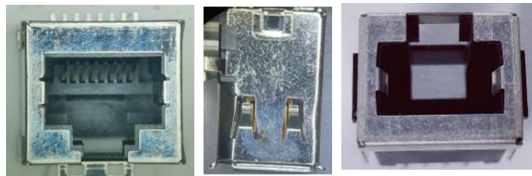
6.2. Dot on Sn coating



Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

ACCEPTABLE

6.3. Discolor on shell



Class A	Class B	Class C
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE

ACCEPTABLE

PS: These photos were taken at a magnification of 10x or greater to clearly see this phenomenon. thank you.

Revision History

Rev.	Reason for Revision	Released by	Date
A	New Release	Juan Wu	2024/11/30