



O&E Package Solution

Product Specification

Spec#: TO52 Cap (Flat Window)

AFN: JDFZ-JS-A03

VER: 000

1. Product Description

1.1 Specifications : TO52 Cap (Flat Window)

1.2 Drawing No. : HP1004011D

2. Product Specifications

2.1 Substrate Specifications

2.1.1 Material : Shell: 4J50 , Window: D263T

2.1.2 Size : Shell: H=3.5-10° φ2.55 , Window: φ4.1 X 0.3

2.1.3 Surface quality : Clear aperture optical surface conforms to MIL-PRF-13830B 40/20,
Effective light transmission MIL-PRF-13830B 20/10, no pocking

2.1.4 Soldering : HFJD low-temperature glass 1#(radiation resistant glass) sintering packaging

2.2 Finished Product Specification

Dimension (mm)	Depth (mm)	Effective Clear Aperture (mm)
3.50+0.05/-0.10	2.7min	Φ1.8min

2.3 Spectrum Specifications

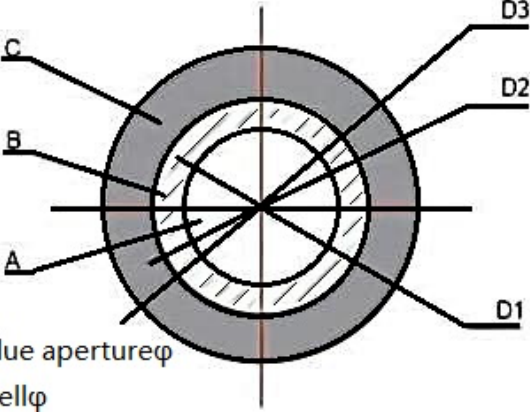
AR Coating on both side , T > 99%@1250-1650nm , T > 99.5% @1480-1650nm

2.4 Airtightness

Leakage rate < 5X10⁻⁹ Pa·m³/s He

3. Appearance Quality

Item	Criteria	Instruments
Visual Inspection		
3.1 Window		
Surface particulate contamination	<p>Area A - Within 0.9mm diameter area: Diameter of pit ≤ 0.01mm</p> <p>Area B - Out of 0.9mm diameter area: Diameter of pit ≤ 0.05mm, 3-5 pits within 0.01~0.05mm Acceptable</p> <p>Area C - Welding area: Conforms to 40/20</p> <p>Diameter of pit < 0.2mm, Single pit diameter ≤ 0.2mm,</p>	Microscope Image analyzers

	<p>One dot diameter = 0.2mm Acceptable Multi-pits: Cumulative diameter ∇ 2*0.2mm, \leq 2.5μm Acceptable Irregular pit < sum of diameter and the short diameter / 2 Pits Qty: Dense points Not allowed Movable foreign objects Not allowed Note: Point off and foreign bodies are equivalent to pit</p>  <p>D1: φ0.9 D2: minimum-value apertureφ D3: inside the shellφ</p>					
Scratch	<p>Area A: Within 0.9mm diameter area Scratch width\leq0.01mm, Scratch length\leq0.9mm, Qty\leq2</p> <p>Area outside A: CA D=1.1mm compliant with 40/20 Scratch width \leq 0.04mm Single scratch length \leq 1/4 D Multiple scratches are accumulated \leq 1/2 D 2 scratches when width = 0.04mm Acceptable Width < 0.01mm Acceptable</p>	Microscope Image analyzers				
Crack	No crack	Microscope				
Notches on the periphery of the glass window	<table border="1"> <tr> <td data-bbox="435 1294 798 1368">depth</td> <td data-bbox="798 1294 1241 1368">Acceptable < 0.1mm</td> </tr> <tr> <td data-bbox="435 1368 798 1431">width</td> <td data-bbox="798 1368 1241 1431">Acceptable < 0.2mm</td> </tr> </table>	depth	Acceptable < 0.1mm	width	Acceptable < 0.2mm	Microscope
depth	Acceptable < 0.1mm					
width	Acceptable < 0.2mm					
3.2 Brazed glass						
Brazed glass spills	According to the drawing	Microscope				
Air bubbles are generated when sealed	<p>Single bubbles in solder \leq 1/5 of the soldering surface Acceptable Bubbles Qty \leq 3 Acceptable , minimum pitch\geq2d; Bubble position can only be located in the welding outward-facing 1/2 welding surface</p>	Microscope				
Poor seal or other voids in the brazed area	No obvious gaps, impurities and other defects.	Microscope				
Discoloration	Uniform color or Uniform color gradient Acceptable.	Microscope				
3.3 Metal shell						
Buff	Maximum 0.02 mm	Microscope				
No moving particles in the inner cavity.	Not allowed	Microscope				

surface	Uniformly	Visual
Exposure points	Not allowed	Visual
Stains, rust	Not allowed	Visual
3.4 Size		
Interior height	See the drawings	Vernier caliper

4. Reliability test

Item	Methods	Criteria	Sampling	Instruments
Solderability	Soldering in high temperature 400°C. After cooling down, using thrust meter to detect thrust.	Trust of welding > 3kg / mm ²	Per lot	Thrust meter
High temperature boiling	100°C/0.095-0.105Mpa/10H	Air tightness < 5X10 ⁻⁹ Pa·m ³ /s He	Per lot	High temperature cooking equipment Leak detector

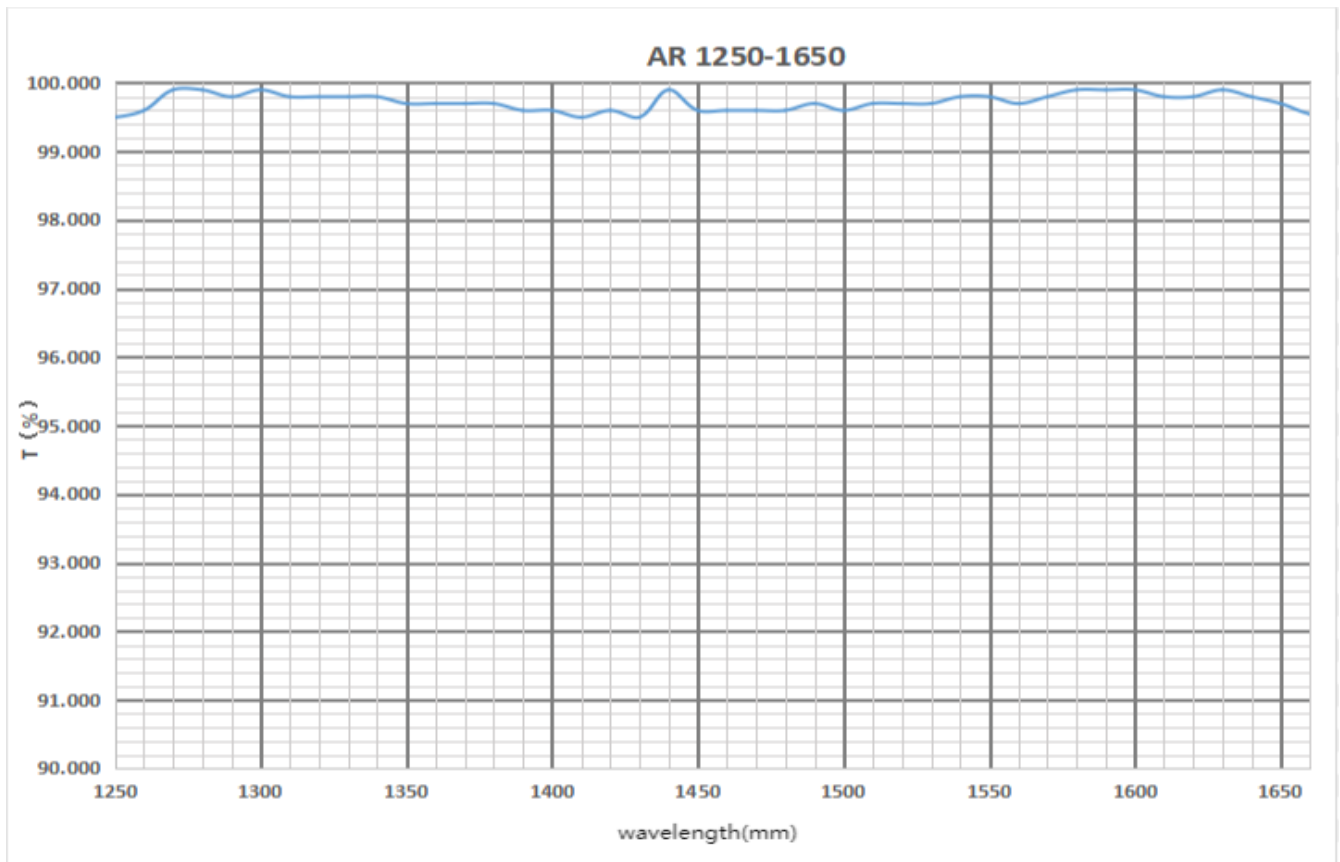
5. Package

- 5.1 The product packaging box uses anti-static materials to ensure the cleanliness of the packaging box and ensure that the materials will not be polluted and corroded.
- 5.2 The boxes are packed into clean bags, filled with desiccant and vacuum baled.
- 5.3 The vacuum packaging bag is attached with a label, which contains: Lot No., product name, quantity, delivery date, and company name.
- 5.4 The packing box needs to have flexible materials such as foam to ensure that the vacuum of the packing box does not fail and is not damp.

6. Shipping

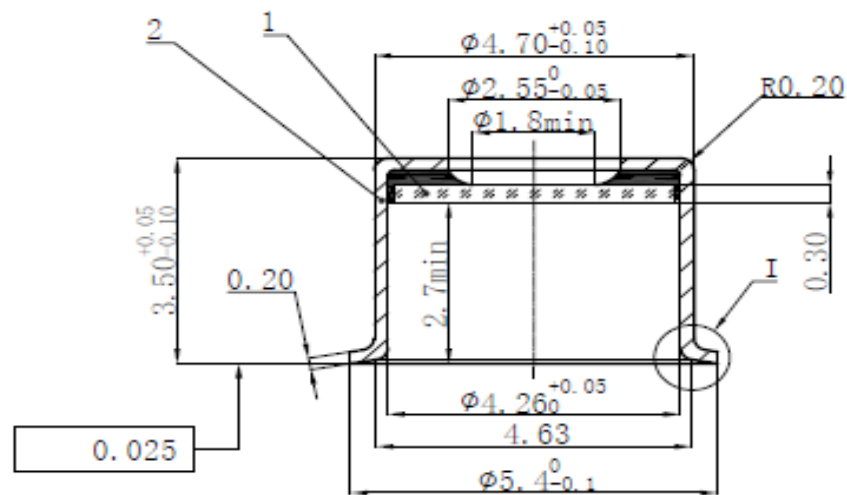
- 6.1 The products should be packed in a sturdy box. The box should meet fragile goods transport requirements.
- 6.2 Avoid direct exposure to the rain, snow and mechanical collision during transportation.
- 6.3 Inspection reports should be packed in the packing box and the report should meet the requirements according to the drawings.

7. Spectrum



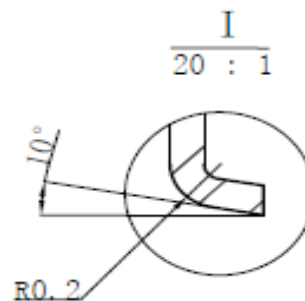
8. Drawing No. : HP1004011D

HP1004011D



Notes

1. Unit:mm ;
2. Material: ①D263T ②Kovar4J50 ;
3. Finish:Electro Ni 3-8um ,;
4. Coating:1480&1650nm Dual-band T>99.5%
5. Fine leak test meets MIL-STD 883(<5X10-9 atm cc/s He);
6. CA(Clear Aperture):>Ø1.8mm, No scratch and sports in the clear aperture;
7. The optical surface of the light aperture conforms to the US military standard 40/20, and the effective light is 20/10, and there is no pedica dot;
8. The materials and coatings are in accordance with ROHS requirements .



2	HP3004001B	CAP	1	4J50	
1	HP2004001D	TO52-WINDOW	1	D263T	
NO.	Figure No.	NAME	QTY	MATERIAL	REM

SIGN	CHANGE FILE NO.	AUTOGRAPH	DATE
DESIGN		STD. EXAM	
CHECK		TECH. EXAM	
CHECK			
APPROVAL			

PROJECTION	WEIGHT	SCALE
		10:1
CON	PAGE	NO. PAGE



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T052-Cap

HP1004011D