Gem Optoelectronic Technology Co.,Ltd.
O&E Package Solution

Product Specification

Spec#：4.75x7.9x0.345mm（DPC）

AFN： JDZJ-PS14

VER： 000

1. Product Description

1.1 Specifications：4.75x7.9x0.345 ALN Product

1.2 Drawing No.：128-10-G-0101B

2. Product Specifications

2.1 Substrate Specifications

2.1.1 Material：Aluminum Nitride

2.1.2 Appearance requirement：Ra 0.3-0.5μm

2.1.3 Submount TTV：≤10μm

2.1.4 Coefficient of thermal conductivity：Tc≥170W/m·K、200W/m·K、230W/m·K

2.2 Finished Product Specification

Description(mm)	Thickness (mm)	Coverage area
4.75±0.05×7.9±0.05	0.345±0.01	Top side for Chip mounting： Thick Cu/Ni/Au plating AuSn according to the drawing
		Bottom side： Thick Cu/Ni/Au in whole area+ metallization

2.3 Spectrum Specifications

2.3.1 Conductive wire area：Ti(0.1μm nom)+Cu(2μm nom)+Ni(2.5±0.5μm min)+Au(0.5μm min)

2.3.2 Thick film area：Ti(0.1μm nom)+Cu(75μm nom)+Ni(2.5±0.5μm)+Au(1.0μm min)

2.3.3 AuSn area：Pt(0.2μm min)+AuSn:Au73±3wt%(3.0±0.5μm)+Au Flush(0.1μm Typ)

3. Appearance Quality Criteria

Inspection Document	Item	Inspection Criteria	Instruments
《Inspection Specification》JDZJ-WI-QD-10	Scratch	Scratch into the substrate is not allowed； Scratch width≤10um allowed； Width 10~40um, total scratch length < twice the diagonal length of the product Scratch width ≥40μm not allowed	20X microscope Metallographic microscope
	Metallized gap	The bump in the insulated channel is not allowed to exceed 1/3 of the width of the channel. The bump in other areas is not allowed to exceed 100μm.	20X microscope
	Bump of metallization	Not allowed≥50μm	20X microscope
	Contamination	Can be removed	20X microscope
	Burr	< 10μm in edge area < 50μm in other areas.	20X microscope Metallographic microscope
	Chipping	Edge chipping< 50μm (ceramic)	20X microscope Metallographic microscope

4. Reliability test

Item	Methods	Criteria	Sampling	Instruments
Reliability test of metallization	Gold wire bonding tension test: Φ38um gold wire baked at 275°C/2H.	When the tension > 20g, the bonding pad not allowed falling off. Gold wire broken is acceptable.	Per lot	tautness meter/ultrasonic gold wire ball bonding wire/high temperature heating platform
	Baking at 400℃ for 5min	No hetero color, bubbling, falling off	Per lot	thrust meter
Reliability test of AuSn	Gold tin molten state：Heating the sliced product on high frequency heating platform	Gold tin surface infiltration, no aggregation, Reflow time: > 40s	Per lot	50X industrial camera/high temperature heating platform
	Gold-tin bonding strength: After welding the solder to the products till the gold tin out of it under on 295 °C heating in 12 seconds.	Thrust > 25N	Per lot	thrust meter/ high temperature heating platform

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. Drawing (128-10-G-0101B)