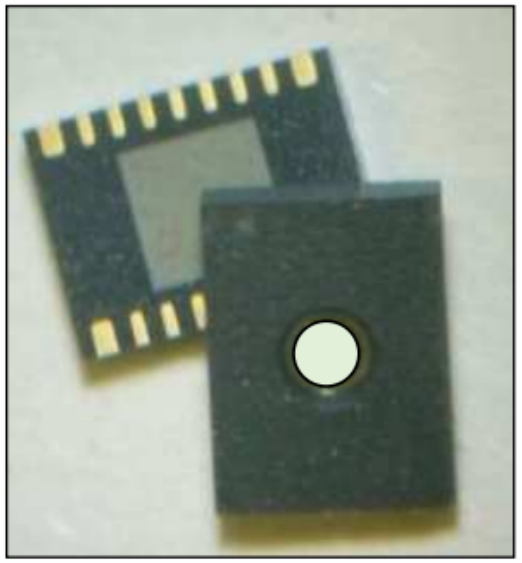
Open Cavity Package

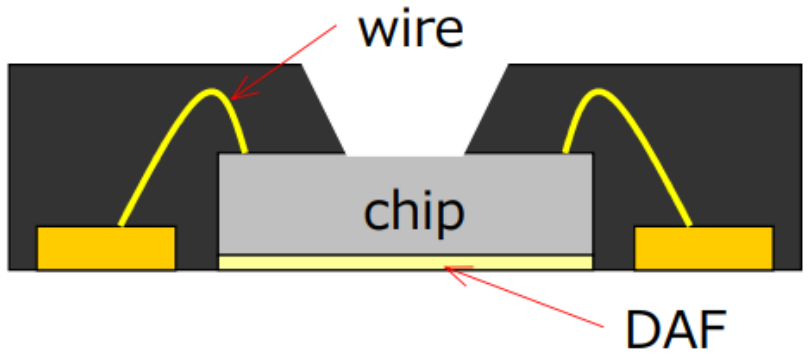
◆Feature

- High precision
- Compact DFN/QFN
- Good productivity for high-volume
- High reliability(Materially, MSL1 passed)
- Release film reduces stress on the chip
- Good performance-to-price ratio



◆Application

- Optical sensor
- Optical filter
- Pressure sensor
- Temperature sensor
- Humidity sensor
- Environmental sensor



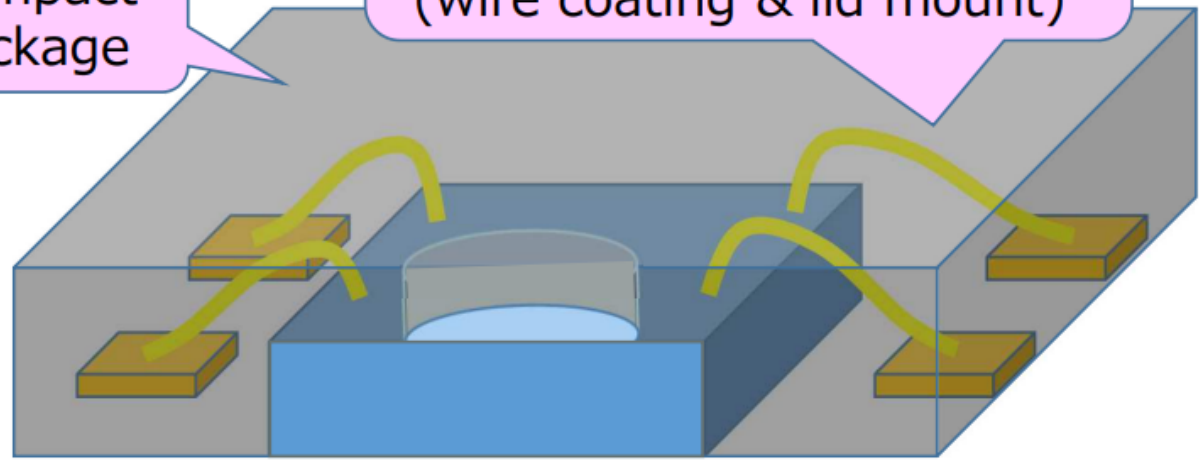
Closs-section

Open Cavity Package

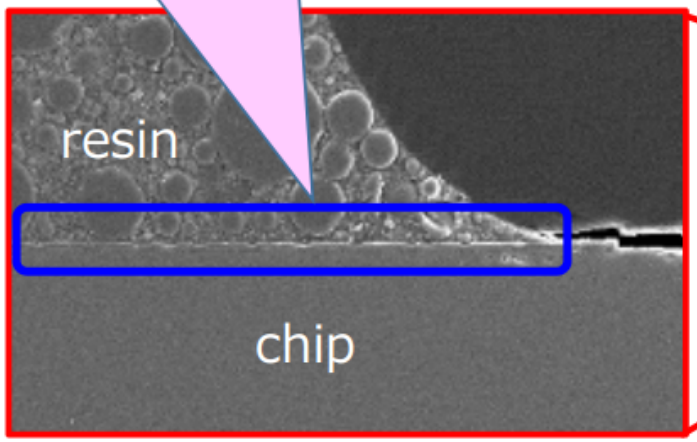
◆Key benefits

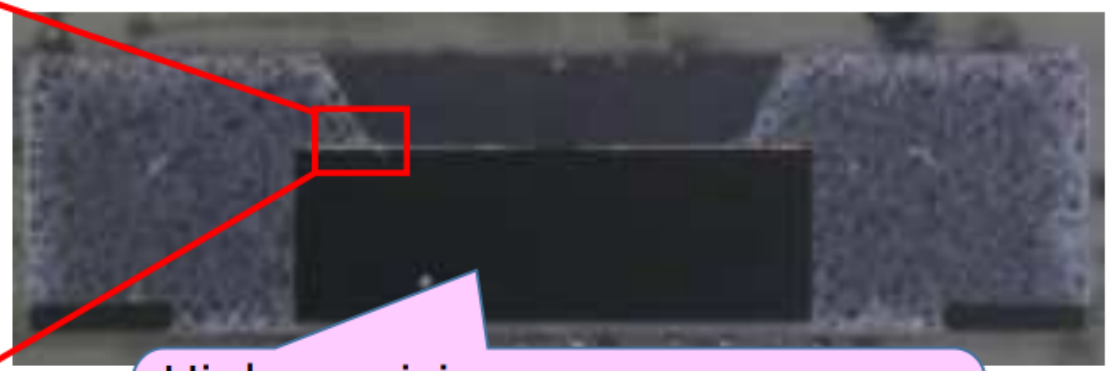
Compact Package

Good productivity(Low cost)
・process reduction
(wire coating & lid mount)



High reliability
・opening is minimum size
・wire is covered by resin
・chip-resin no delamination



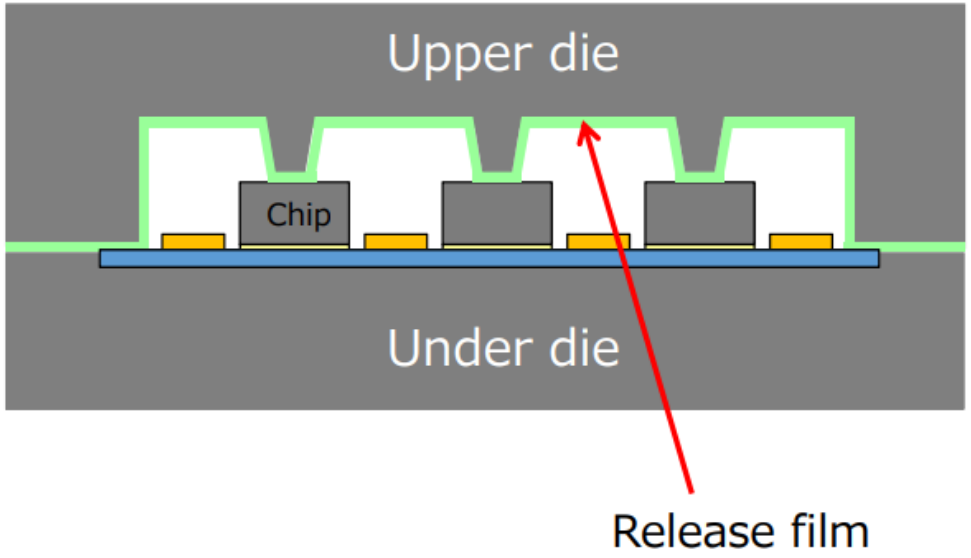


High precision
・chip position with respect to opening area ; ±100μm

Open Cavity Package

- Back grind
- Wafer sawing
- Die bonding
- Wire bonding
- **Molding**
- Remove baseplate
- Marking
- Package sawing
- Function test
- Taping
- Shipping

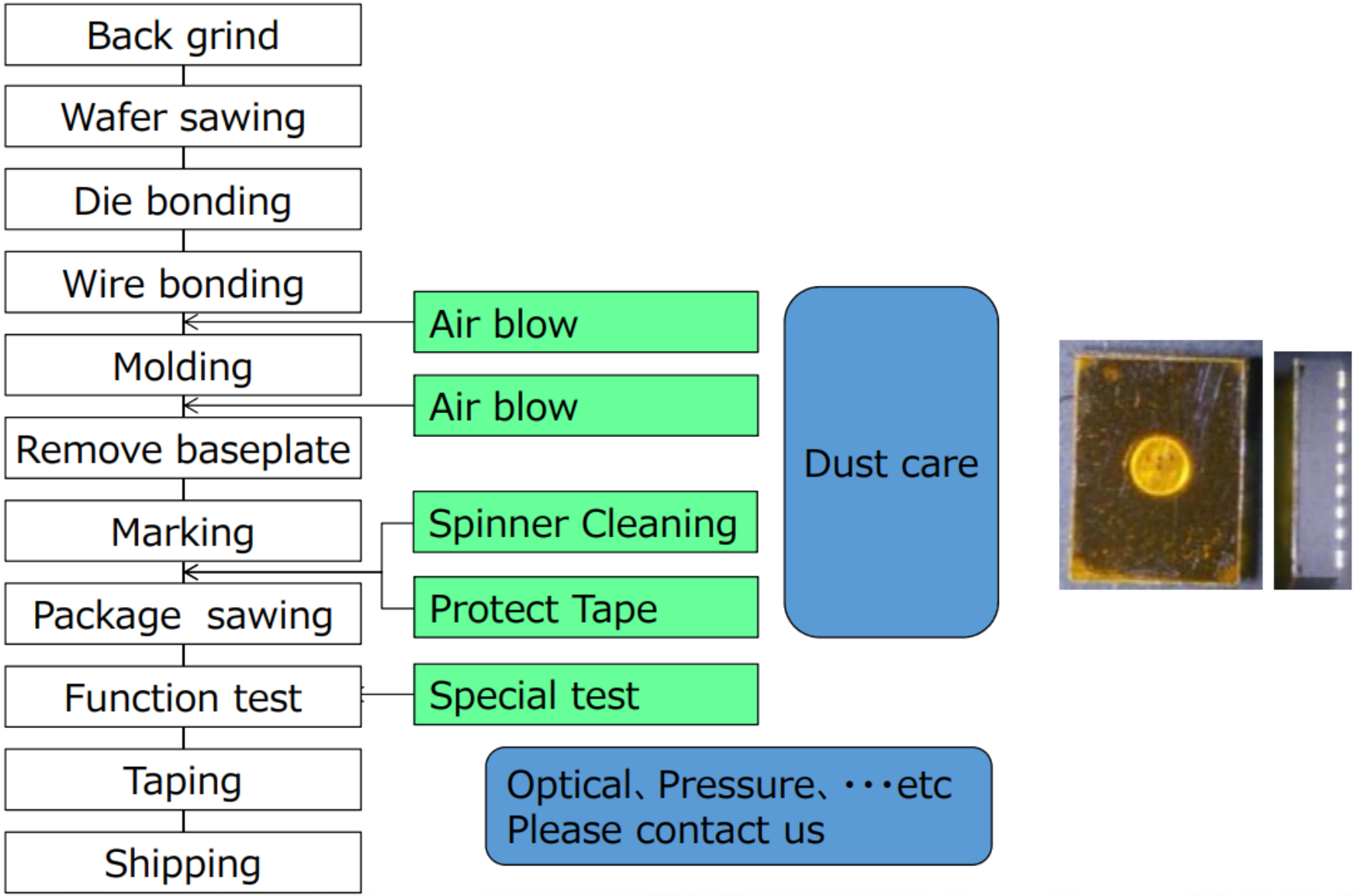
Molding Process (Cross-Section)



Molding(=key process) uses release film
Reduces chip damage.

High precision in the Z direction by
a turnkey process.

Open Cavity Package



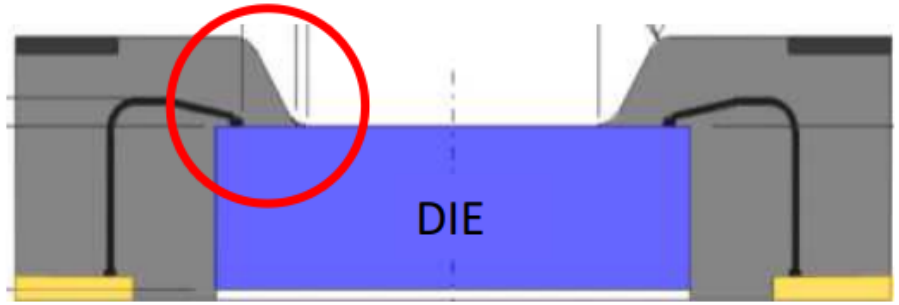
Open Cavity Package

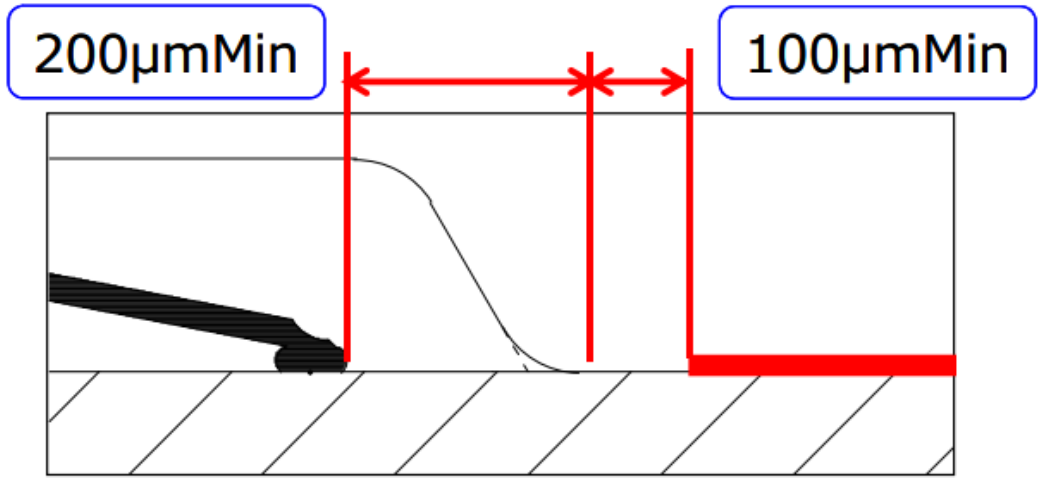
No.	Contents	Condition	Sample size	Result
1	Pre-conditioning	MSL1+IR260℃×3times	45	Pass
2	Pressure Cooker Test	121℃/100%RH/2atm ×500hr	45	Pass
3	Temperature Cycle Test	-65℃(30min)⇔150℃(30min) ×500cycle	45	Pass
4	High Temperature Storage Life	150℃×1,000hr	45	Pass
5	Low Temperature Storage Life	-65℃×1,000hr	45	Pass
6	Temperature-Humidity (No Bias)	85℃/85%RH×1,000hr	45	Pass

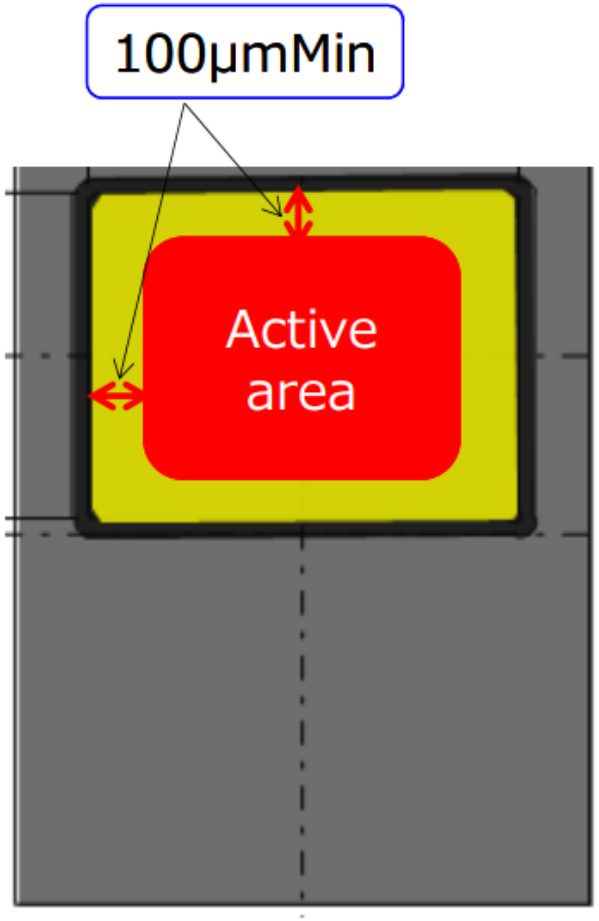
Open Cavity Package

No.	Contents	Mass Production	Development
1	Open shape	circle、square	←
2	Open size(㎜)	circle : Φ1.0～1.25 square : 1.4SQ	circle : Φ0.7～1.25 square : 0.8SQ～5.4×5.75
3	Open depth(㎜)	0.05～0.39	0.00～0.55
4	Wall width(㎜)	0.195～0.844	←
5	D/A material	DAF、Ag paste	←
6	Die island	None/Existence	←
7	Package size(㎜)	1.8SQ～4.0×3.0	1.8SQ～8.2SQ
8	Package thickness (㎜)	0.6～0.8	0.4～1.2

Open Cavity Package



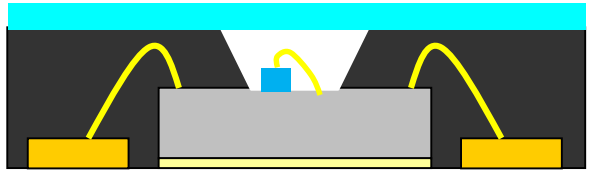




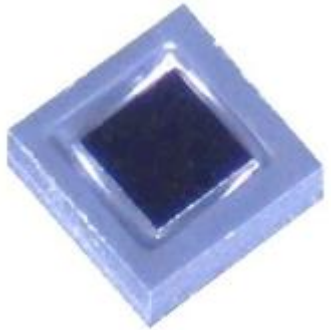
Wire－Open area ： MIN200μm
Active area ＝ Open size－200μm
※Open sizeΦ1.0㎜ ⇒ Active areaΦ0.8㎜

Open Cavity Package

Available



Hollow Type



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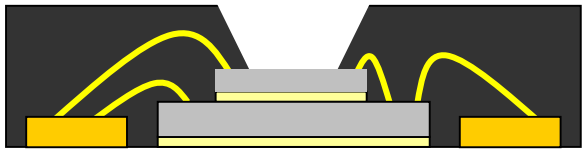
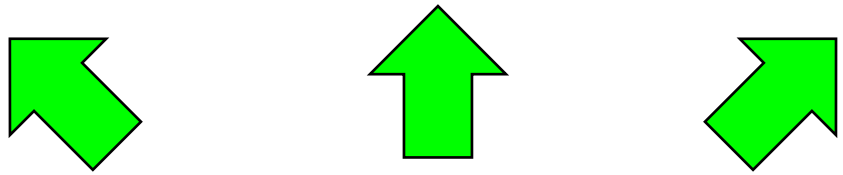


Chip Stack



Base Type

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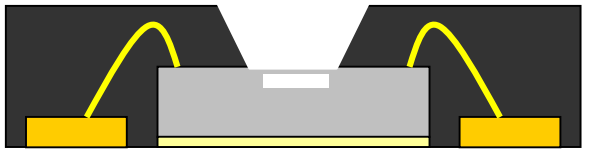
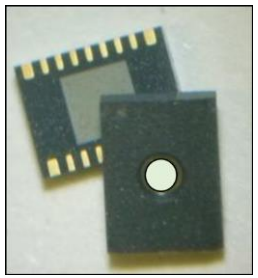


MEMS Chip



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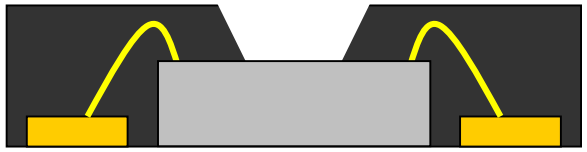

Double Side Open

We have a
Variety of Packages

Available

Backside Open