



GBW

Gold Bonding Wire

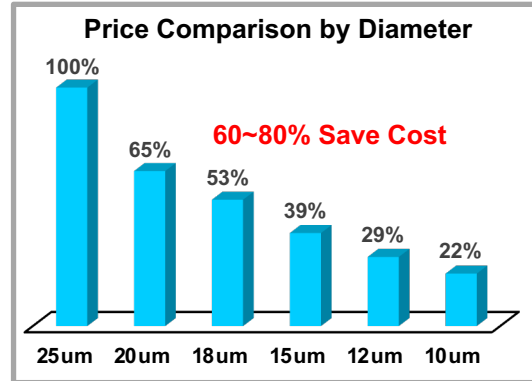
Gold Bonding wire is the primary method of making interconnections between an integrated circuit (IC), a printed circuit board (PCB) and a lead frame during semiconductor device fabrication.

LT Metal has wide range of gold bonding wire for various kind of package types and materials.

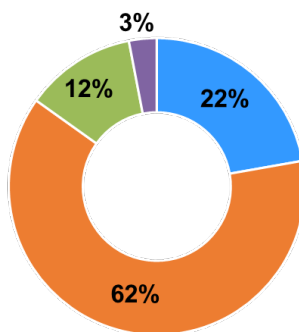
TYPE : HP, HS-U, HS-S2H, HS-JR, EW

Specialized in Fine Wire Technology

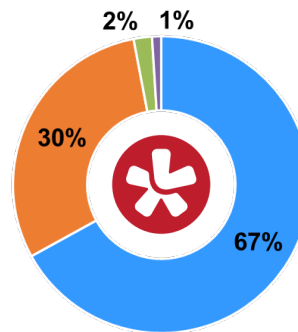
- ◆ Fine wire capability up to 0.4mil (10um)
- ◆ 0.5mil wire is already in mass production
- ◆ The cost can be saved up to 78% compared to 25um.



◆ Distribution by wire diameter produced in LT Metal



W/W
(< 25 um : 84 %)



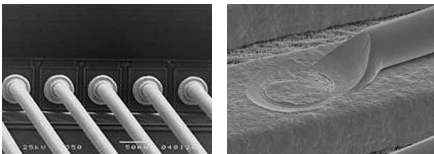
LT Metal
(< 25 um : 97 %)

- < 18 um
- 18 ~ 25 um
- 25 ~ 30 um
- > 30 um

Superior Performance of LT Metal's Gold Bonding Wire

◆ Robust Bondability

Good 1st & 2nd bonding performance
Soft FAB, wire surface control

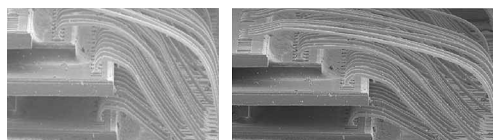


◆ No Off-Centered Bond (2N)

Homogeneous residual stress

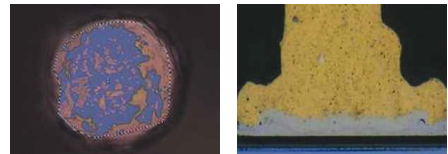
◆ Strength for Looping

High strength & Elastic modulus
Microstructure control



◆ Superior Reliability

Good IMC coverage & Alloy design
for slower IMC growth



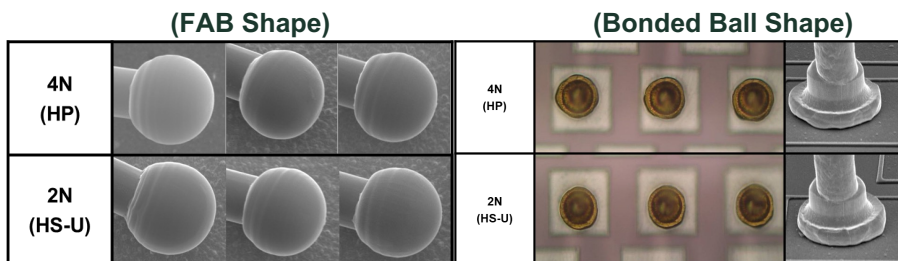
◆ Clean Wires

No surface contamination
No surface scratch & damage
No capillary build-up

■ Performance Data of Advanced 2N Wire (HS-U)

◆ FAB & Bonded Balls

→ The shape of FAB and Bonded ball for 4N and 2N Au wire is similar.

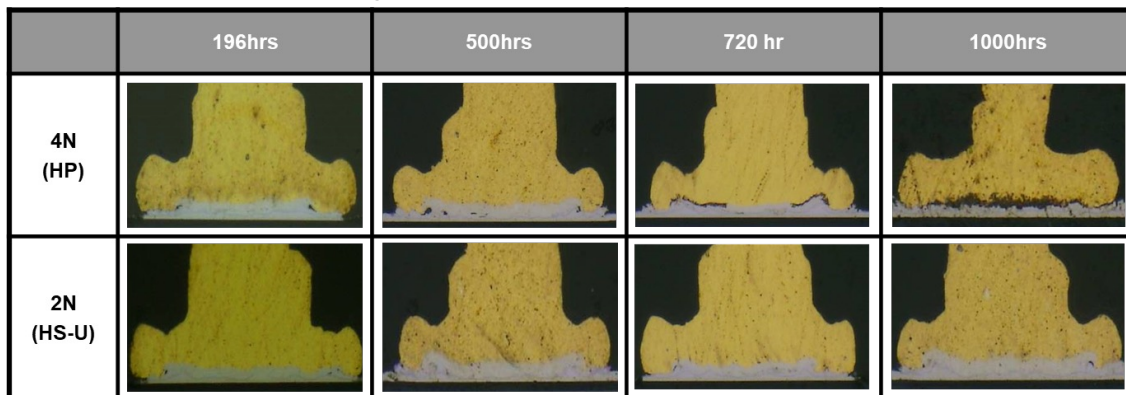


◆ Reliability Performance

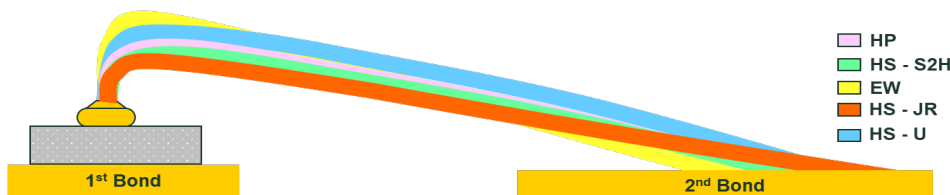
► High Temperature Storage Test Result

Wire type		Time of High Temperature Storage Test (Temperature 175°C)								
		0hr	58hrs	125hrs	196hrs	336hrs	500hrs	720hrs	840hrs	1000hrs
4N(HP)	BPT	5.28	6.14	5.99	6.27	6.22	5.88	3.83	-	-
	BST	10.71	25.46	23.49	25.39	20.95	19.34	13.78	9.83	9.58
	Ball Lift Ratio (%)	0	0	0	0	0	0	31.62	100	100
2N(HS-U)	BPT	6.37	7.29	7.31	7.14	6.92	7.22	7.09	7.05	6.89
	BST	9.29	28.57	29.36	28.41	29.65	27.83	25.68	26.69	24.08
	Ball Lift Ratio (%)	0	0	0	0	0	0	0	0	0

► Cross Sectional IMC Image



→ 2N Au wire showed much better IMC reliability compared to 4N Au wire.



Based on 1.0mil wire diameter

Property \ Type	HP	HS-S2H	EW	HS-JR (3N)	HS-U
Purity	4N	4N	4N	3N	2N
B/L (gf)	≥10	≥10	≥9	≥10	≥10
E/L(%)	3~10	3~10	3~10	3~8	3~10
HAZ Length (μm)	120 ~ 140	120 ~ 140	130 ~ 150	80~100	70~90
Loop Height (μm)	Min.100	Min.95	Min.120	Min.90	Min.110
Loop Length (mil)	Max.230	Max.230	Max.200	Max.240	Max.230
Application & Characteristic	High Performance	High Strength	Excellent Workability	Modified HS-U (electrical effect)	High Reliability (HTS)