

GMG

High Strength Au Bonding Wire

高強度Auボンディングワイヤ



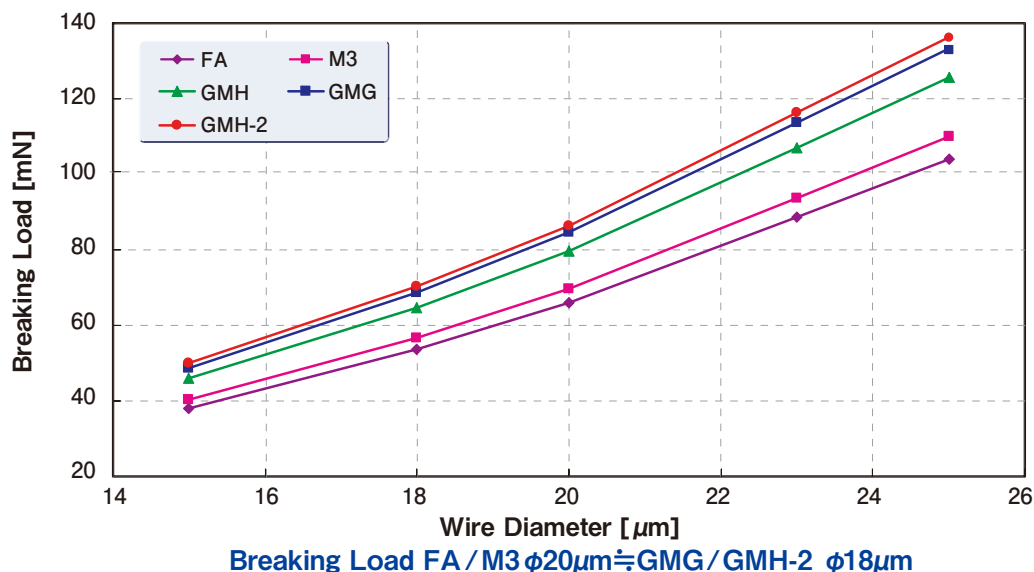
Characteristics

- High tensile strength wire enables cost reductions with finer diameters.
- Applicable for multiple loop profiles used in BGA.
- Excellent bump formation for a stack die package.

特徴

- 高強度タイプは細線化によるコストダウンが可能
- BGAなどの多彩なループ形状に対応。
- スタックダイパッケージでのバンプ形成に優れる。

Mechanical Properties



GLF

Super Low Loop Au Bonding Wire

超低ループ対応Auボンディングワイヤ



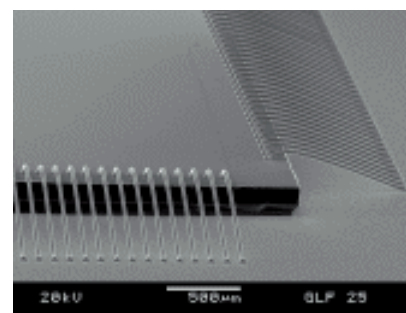
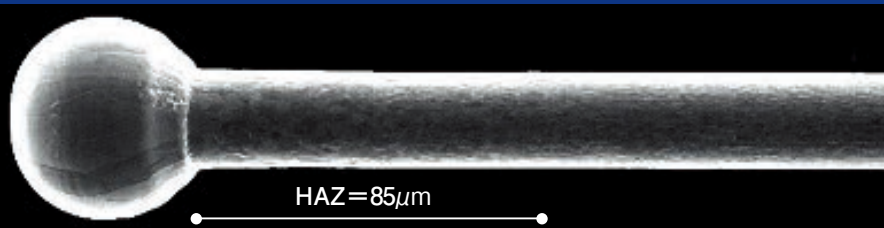
Characteristics

- Lower loop height than conventional low loop wires.
- Less damage at neck region.
- Suppression of snake-wire.
- Higher pull load than conventional low loop wires.

特徴

- 従来の低ループワイヤよりも低ループ形成性に優れる。
- 優れたネックダメージ抑止性
- S字曲がり抑止性
- 従来の低ループワイヤよりプル強度が高い。

Wire Diameter : 25μm Free Air Ball Diameter : 50μm
 Bonder : Shinkawa UTC-400 Ball Forming Electrical Discharge Time : 0.44ms



GMG Data Sheet
General Properties

Wire Diameter (um)	15	18	20	23	25	28	30	32	35	38	ASTM F205-94
Tolerance (um)	+/- 1.0										
Weight (mg/200mm)	0.595-0.777	0.877-1.096	1.096-1.338	1.469-1.748	1.748-2.052	2.212-2.552	2.552-2.916	2.916-3.305	3.508-3.933	4.155-4.616	
Breaking Load (gf)	Room Temp.										Tensile Tester Jaw Length = 100mm Production Guide 2012-3 10H
Elongation (%)	1.0 - 7.0			2.0 - 7.0				2.0 - 8.0			

Physical Property

Hardness (HV)	Free Air Ball	35 - 55										Vickers tester
	HAZ	45 - 90										
	Wire	80 - 100										
Density (g/cm ³)	19.32										ASTM	
Resistivity (uΩcm) @ 20°C	2.3										4 terminal method	
Fusing Current (A, Length=3mm,10sec)	0.3*	0.4	0.5	0.7	0.8	1.1	1.2	1.4	1.7	2.0	Theoretical Value (※Out of applicable W.D.)	
Electrical resistance (Ω, Length 10mm, Room Temp.)	1.14 - 1.49	0.81 - 1.01	0.66 - 0.81	0.51 - 0.61	0.43 - 0.51	0.35 - 0.40	0.30 - 0.35	0.27 - 0.30	0.23 - 0.25	0.19 - 0.21	Calculated Value	
Thermal Conductivity @ 20°C (W/m/K)	315.5										Metals Data Book	
Linear Expansion Coefficient (0-100°C) (ppm/K)	14.1										Metals Data Book	
Elastic Modulus (GPa)	75 - 95										Tensile Tester	
Melting Point (°C)	1,063										Metals Data Book	

TDS GMG rev.1 20201120

GLF Data Sheet
General Properties

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Tolerance (um)	+/- 1.0										
Weight (mg/200mm)	0.595-0.777	0.877-1.096	1.096-1.338	1.469-1.748	1.748-2.052	2.212-2.552	2.552-2.916	2.916-3.305	3.508-3.933	4.155-4.616	
Breaking Load (gf)	Room Temp.										Tensile Tester Jaw Length = 100mm Production Guide 2012-3 10H
Elongation (%)	2.0 - 6.0		2.0 - 7.0				2.0 - 9.0				

Physical Property

Hardness (HV)	Free Air Ball	35 - 55										Vickers tester
	HAZ	45 - 85										
	Wire	75 - 95										
Density (g/cm ³)	19.32										ASTM	
Resistivity (uΩcm) @ 20°C	2.3										4 terminal method	
Fusing Current (A, Length=3mm,10sec)	0.3*	0.4	0.5	0.7	0.8	1.1	1.2	1.4	1.7	2.0	Theoretical Value (※Out of applicable W.D.)	
Electrical resistance (Ω, Length 10mm, Room Temp.)	1.14 - 1.49	0.81 - 1.01	0.66 - 0.81	0.51 - 0.61	0.43 - 0.51	0.35 - 0.40	0.30 - 0.35	0.27 - 0.30	0.23 - 0.25	0.19 - 0.21	Calculated Value	
Thermal Conductivity @ 20°C (W/m/K)	315.5										Metals Data Book	
Linear Expansion Coefficient (0-100°C) (ppm/K)	14.1										Metals Data Book	
Elastic Modulus (GPa)	70 - 90										Tensile Tester	
Melting Point (°C)	1,063										Metals Data Book	

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