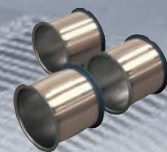


SEA/SEG

Ag Alloy Bonding Wire

Ag合金ボンディングワイヤ



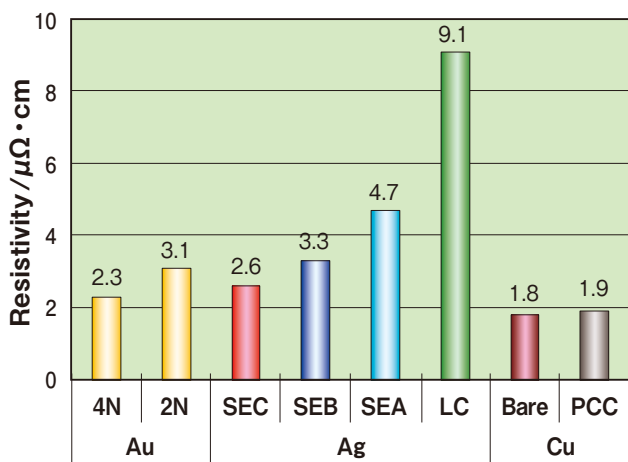
Characteristics

- Reduce material cost with good bondability
- High reflectivity in short wavelength range
- Low resistivity (SEC type)
- Softer FAB (SEC type)

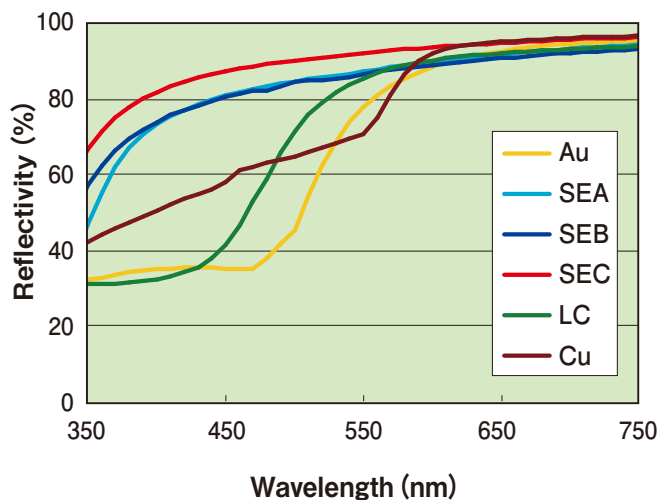
特徴

- 安価で優れた接合性
- 短波長領域で優れた反射率
- 低比抵抗 (SEC タイプ)
- 軟らかいFAB (SECタイプ)

Resistivity



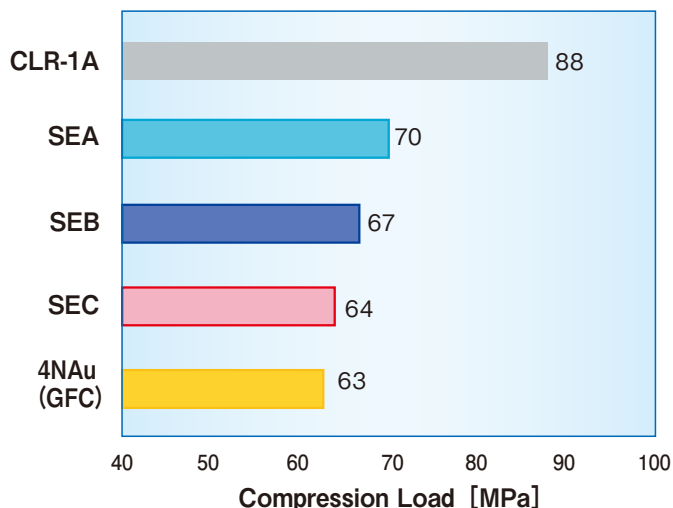
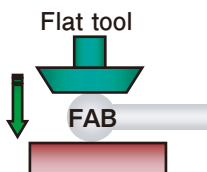
Reflectivity



FAB compression

Wire dia. : 20μm Equipment :
 FAB dia. : 38μm MCT-W500 (SHIMADZU)

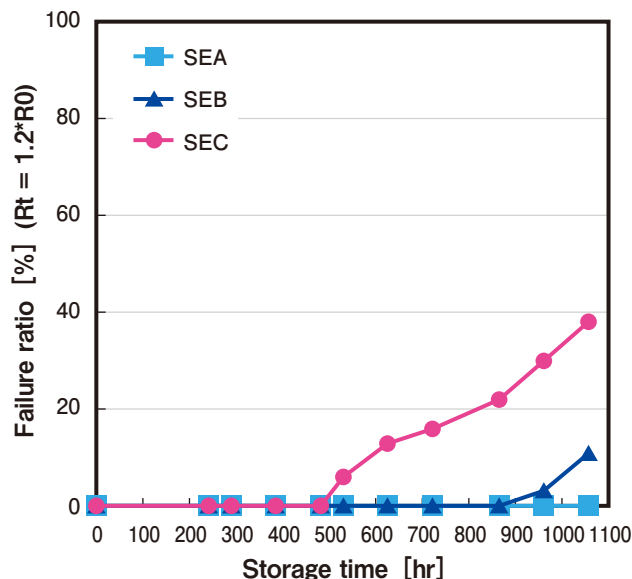
Compression :
 FAB dia. × 20% (8μm)



Reliability

uHAST 110degC × 85%RH

Wire Diameter : 18 μm
 Halogen Free Resin
 pH : 6.0-7.0 Cl content : 15ppm
 (without ion trapper)



SEA 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)	0.336-0.439	0.495-0.619	0.619-0.756	0.829-0.987	0.987-1.158	1.249-1.441	1.441-1.647	1.647-1.866	1.981-2.221	2.346-2.607	
Breaking Load (gf)	2.8 - 5.6	4.1 - 8.0	5.1 - 10.0	6.4 - 12.7	7.8 - 15.4	9.7 - 19.0	11.1 - 21.9	12.7 - 25.0	15.2 - 30.0	18.0 - 35.5	Tensile Tester Jaw Length = 100mm Production Guide 2012-3 10H
Elongation (%)	1.0 - 8.0					1.0 - 10.0					

Physical Property

Hardness (HV)	Free Air Ball	50 - 70										Vickers tester
	HAZ	60 - 90										
	Wire	80 - 100										
Density (g/cm ³)	10.91										Calculated Value	
Resistivity (uΩcm) @ 20°C	4.7										4 terminal method	
Fusing Current (A, Length=3mm,10sec)	0.1*	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.1	Theoretical Value (*Out of applicable W.D.)	
Electrical resistance (Ω, Length 10mm, Room Temp.)	2.34 - 3.05	1.66 - 2.07	1.36 - 1.66	1.04 - 1.24	0.89 - 1.04	0.71 - 0.82	0.62 - 0.71	0.55 - 0.62	0.46 - 0.52	0.39 - 0.44	Calculated Value	
Thermal Conductivity @ 20°C (W/m/K)	155.7										Theoretical Value	
Linear Expansion Coefficient (0-100°C) (ppm/K)	18.9										TMA Method	
Elastic Modulus (GPa)	40 - 60										Tensile Tester	
Melting Point (°C)	1,020										Phase Diagram	

TDS SEA rev.1 20201120

SEC 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)	0.325-0.424	0.478-0.598	0.598-0.730	0.801-0.954	0.954-1.119	1.207-1.392	1.392-1.591	1.591-1.803	1.914-2.146	2.267-2.518	
Breaking Load (gf)	2.2 - 5.0	3.2 - 7.2	4.0 - 8.9	5.5 - 12.1	6.4 - 14.0	8.2 - 17.8	9.4 - 20.5	11.0 - 23.7	13.3 - 28.5	15.7 - 33.6	Tensile Tester Jaw Length = 100mm Production Guide 2012-3 10H
Elongation (%)	3.0 ≤										

Physical Property

Hardness (HV)	Free Air Ball	45 - 65										Vickers tester
	HAZ	55 - 75										
	Wire	65 - 85										
Density (g/cm ³)	10.54										Calculated Value	
Resistivity (uΩcm) @ 20°C	2.6										4 terminal method	
Fusing Current (A, Length=3mm,10sec)	0.3*	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.9	Theoretical Value (*Out of applicable W.D.)	
Electrical resistance (Ω, Length 10mm, Room Temp.)	1.29 - 1.69	0.92 - 1.15	0.75 - 0.92	0.57 - 0.68	0.49 - 0.57	0.39 - 0.45	0.34 - 0.39	0.30 - 0.34	0.26 - 0.29	0.22 - 0.24	Calculated Value	
Thermal Conductivity @ 20°C (W/m/K)	281.5										Theoretical Value	
Linear Expansion Coefficient (0-100°C) (ppm/K)	19.0										TMA Method	
Elastic Modulus (GPa)	35 - 55										Tensile Tester	
Melting Point (°C)	980										Phase Diagram	

TDS SEC rev.1 20201120