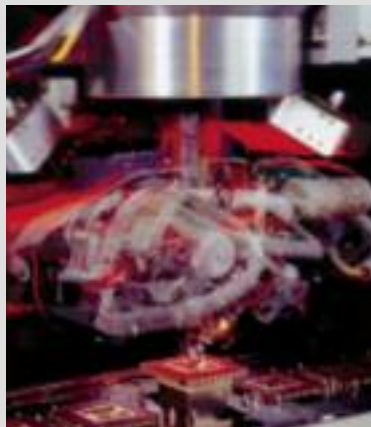


ALW-29S

Small Diameter Aluminum Wedge Bonding Wire



ALW-29S Benefits

- Available in 0.7 mil – 3 mil diameters to suit a wide range of small diameter wedge bonding applications.
- Specially suited and developed for Chip-on-board (COB) applications.
- High-reliability bonding for fine-pitch applications due to compatibility with aluminum package metalization.
- Low temperature and energy level bondability helps prevent damage to sensitive devices.

Wide Range of Diameters and Levels of Hardness

AFW supplies ALW-29-S bonding wire in a range of hardness for each diameter. This allows us to meet distinct elongation and breaking load properties that are best suited to your equipment capabilities and the looping requirements of your application.

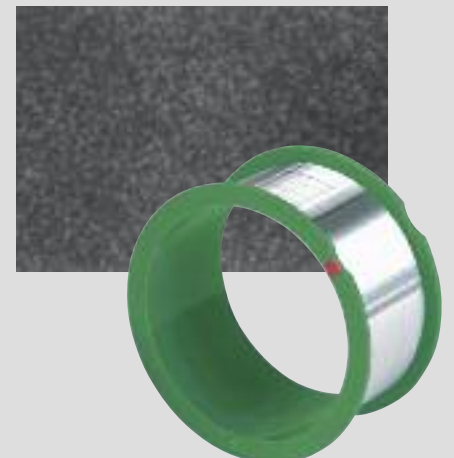
Compatibility with Al Insures Bond Reliability

A major advantage to the use of ALW-29S bonding wire, particularly in finepitch applications, is the compatibility of the wire's chemical composition with aluminum metallization. This allows for room-temperature bonding at low energy levels. This feature is key to the formation of high-integrity bonds and the prevention of damage to sensitive devices. The electrical and thermal conductivity properties of ALW-29S are considered excellent for a wide range of applications.

Recommended Technical Data of ALW-29S

Diameter	Microns	17.8	25.4	31.7	38.1	50.8	76.2
	Mils	0.7	1.0	1.25	1.5	2.0	3.0
ALW-29S (hard)							
Elongation (%)		1 – 4	1 – 4	1 – 4	1 – 4	1 – 4	1 – 4
Breaking Load (g)		7.5 – 8.0	17.0 – 19.0	24.0 – 27.0	35.0 – 38.0	55.0 – 65.0	120.0 – 140.0
ALW-29S (medium)							
Elongation (%)		1 – 4	1 – 4	1 – 4	1 – 4	1 – 4	1 – 4
Breaking Load (g)		7.0 – 7.5	15.0 – 17.0	21.0 – 24.0	30.0 – 34.0	45.0 – 55.0	110.0 – 120.0
ALW-29S (soft)							
Elongation (%)		1 – 4	1 – 4	1 – 4	1 – 4	1 – 4	1 – 4
Breaking Load (g)		6.0 – 7.0	13.0 – 15.0	19.0 – 21.0	25.0 – 30.0	39.0 – 45.0	100.0 – 110.0
Fusing Current (Amp)		0.3	0.5	0.7	1.0	1.4	1.8

For other diameters, please contact Heraeus Bonding Wires sales representative.



Wire Specifications

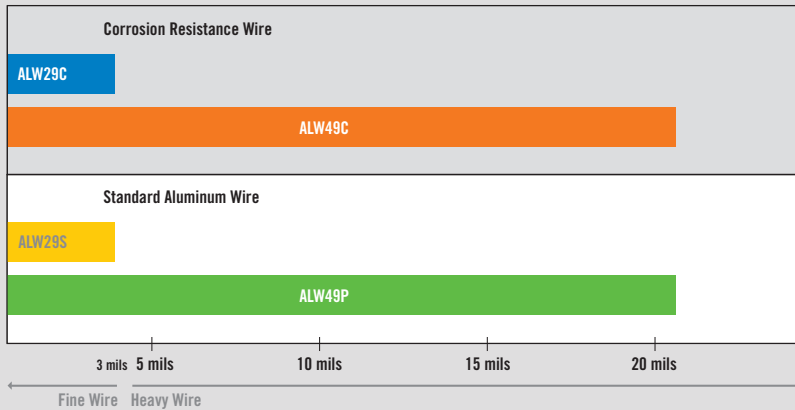
Chemical Composition

Aluminum	98.95 – 99.05%
Silicon	0.95 – 1.05%

Physical Properties

Density	2.69 g/cm ³
Melting Point	620°C / 1148°F
Electrical Resistivity @20°C	3.0 μΩ-cm
Thermal Conductivity @20°C	195 W/m.K
Electrical Conductivity @20°C	57% IACS
Shelf Life	6 month

Aluminium Wire Map



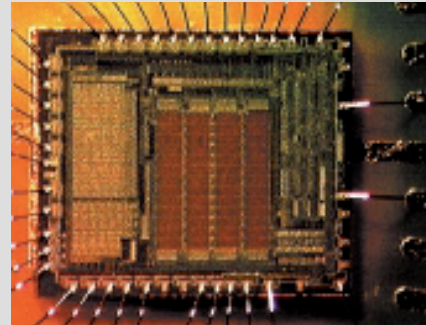
- Chip on Board - Discrete Device (Small Signal Package)
- Chip on Board - Discrete Device (Plastic Package)
- Hybrid Package - Hermetic Package - High Power Device
- Hybrid Package - Power Device

Corrosion Resistant Test Conditions

Temperature	121°C
Pressure	2 Atmospheres (Saturated Steam)
Time	48 Hrs.
Wire Condition	Bare

* 48 hour "pressure cooker" exposure of bare wire is essentially equivalent to about 1000 hours in a typical plastic package.

Ref. T. H. Ramsey, Aluminum Alloy Bonding Wires in Corrosive Environments.



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