

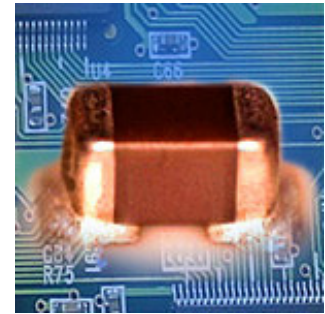
Silicone Based Electrically Conductive Adhesives

Features

United Adhesives Inc. makes two categories of Electrically Conductive Adhesives (ECA), silver filled silicones (Silductor series) and silver filled epoxies (Eposolder series), in both 1-part and 2-part systems. They are either dispensable or screen /stencil printable. The Silductor series provide significant stress compliance while maintaining high electrical & thermal conductivity.

Applications

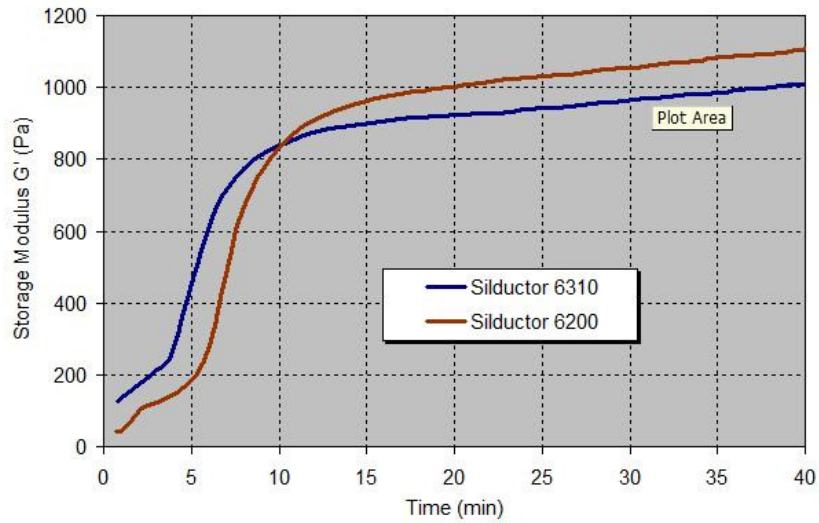
The typical applications are for mounting of heat sensitive components with electrically conductive path such as die attach, chip attach, and groundings. Silicone based ECAs provide significant stress compliance between components and mounting surfaces while serving as electrically conductive and thermally conductive interface material between mounted components and heat spreader.



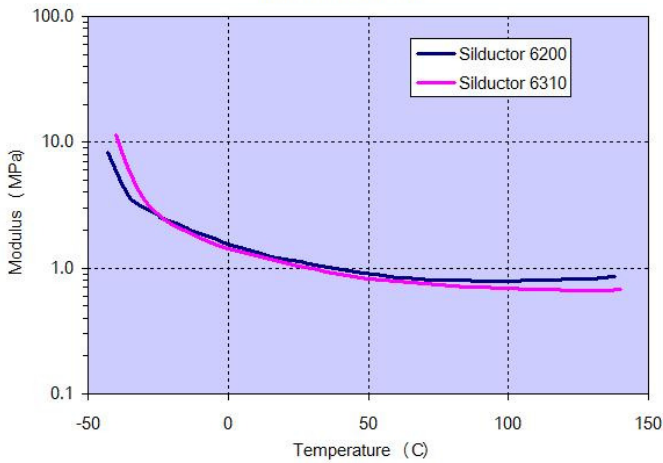
Name	Silductor 6200	Silductor 6250	Silductor 6310	Silductor 6324
Chemical Base	Silicone / Silver	Silicone Silver coated Copper	Silicone / Silver	Silicone / Silver
Features / Advantages	Screen/Stencil Printable. High electrical & thermal conductivity. Low Thermal Stress. Very Low ionic Contamination. High moisture resistance. Reworkable.	Silver coated copper filled electrical & thermal conductivity. Low Thermal Stress. Very Low ionic Contamination. High moisture resistance. Reworkable. Low cost.	High electrical & thermal conductivity. Low Thermal Stress. Very Low ionic Contamination. High moisture resistance. Reworkable.	Gel-Like ECA for extremely low stress, electrically connecting applications. Very Low ionic Contamination. High moisture resistance. Reworkable.
Typical Application	For extremely low stress soldering / connecting / conducting applications such as in Sensors, Filters, Crystal Oscillators, MEMS, LCD Driver IC's, CCD chip attach, Wafer Lamination, CSP, etc.	For extremely low stress soldering / connecting / conducting applications such as in Sensors, Filters, Crystal Oscillators, MEMS, LCD Driver IC's, CCD chip attach, Wafer Lamination, CSP, etc.	For low stress soldering / connecting / conducting applications such as in Sensors, Filters, Crystal Oscillators, MEMS, LCD Driver IC's, CCD chip attach, Wafer Lamination, etc.	Extremely soft gel-like electrically conductive glue for stress compliant grounding or conducting in semiconductor and automotive electronics applications. This material is soft and tacky.
Rheology	Printable	Printable	Dispensable	Dispensable
Part / Component	One	One Part	One	One
Viscosity @25C (cps)	56,000	15,000 ~ 63,000	41,000	35,000
Thixotropic Index	3	> 3	2.1	2
Density (g/ml)	4.9	4.7	4.9	4.9
Work life (hr)	> 72	> 72	> 72	> 72
Cure Rate	150C 30 min 125C 60 min	150C 30 min 125C 60 min	150C 30 min 125C 60 min	150C 30 min 125C 60 min
Shelf Life (days)	6 months @-15C	6 months @-15C	6 months @-15C	6 months @-15C
Thermal Stability	-50C to 230C	-50C to 230C	-50C to 230C	-50C to 230C
Tg	-120C	-120C	-120C	-120C
CTE (ppm/C) ASTM D3386-94	<160	<160	<200	<220
Hardness (ASTM D2240)	Shore A = 47	Shore A = 50	Shore A = 45	Shore OO = 30
Tensile Strength (ASTM D638)	3.0 Mpa	3.2 Mpa	3.1 Mpa	0.6 Mpa
Volume Resistivity (Ohm-cm)	< 5x10 ⁻⁴	< 5x10 ⁻³	< 5x10 ⁻⁴	< 2x10 ⁻³
Adhesion (Al/Al Lap Shear, psi)	>150 psi	>150 psi	>150 psi	Tack
Thermal Conductivity (W/mK)	> 3.5	> 4	> 4.2	> 3

► Mechanical and Electrical Properties of Silductor ECAs

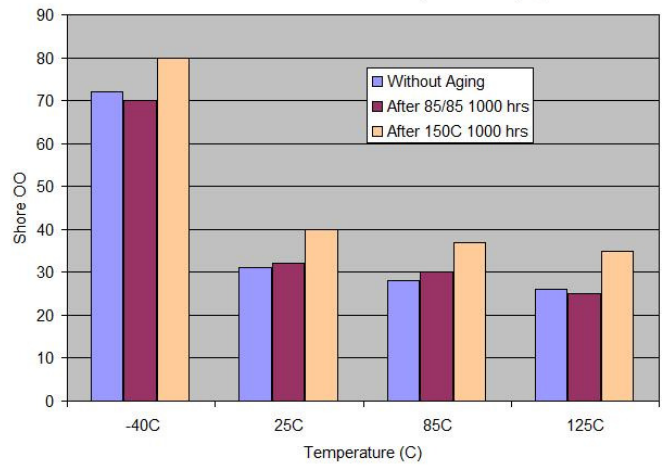
Cure Profile of Silductor ECAs



Modulus of Silductors



Silductor 6324 Hardness after Humidity and Heat Aging



Silductor 6324 Volume Resistivity after Humidity and Heat Aging

