ECO+PLUS® series
Lead Free SOLUTIONS you can TRUST

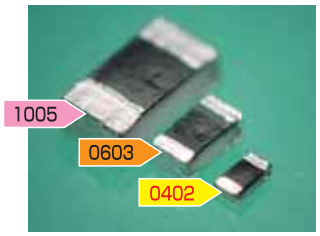
Hi-performance Lead Free Solder Paste

S3X70-M407-4

Ensures **OUTSTANDING** continual **PRINTABILITY** with super fine pattern applications (0.5mm pitch CSP, 0402 components) and long stencil idle time.

Designed to cope with super fine pattern application, e.g. <0.2mm diameter CSP pattern, and ensures **PERFRECT COALESCENCE** and **WETTING**.

Prevents dislocation or movement of 0402 components during placement due to designed **HIGH TACK** force values.

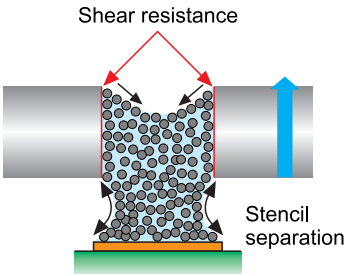


■ Excellent stencil release with super fine pattern

It is commonly known for the following difficulties to occur during printing with super fine solder particle/super fine pattern applications.

1. Large surface area of the solder particles increases the shear resistance with the walls of the aperture.
2. Large aspect ratio due to the shape of the solder paste within the aperture compared to the surface area of the pad, thus impacting on the shear resistance of the solder paste with the aperture walls.

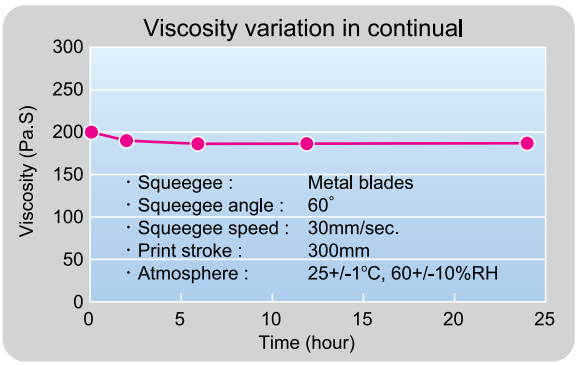
Adoption of a newly selected wax like medium, has succeeded to reduce the shear resistance drastically and enables smooth release of the solder paste from the super fine apertures, as well as from the more normal patterns.



■ Consistent continual printability

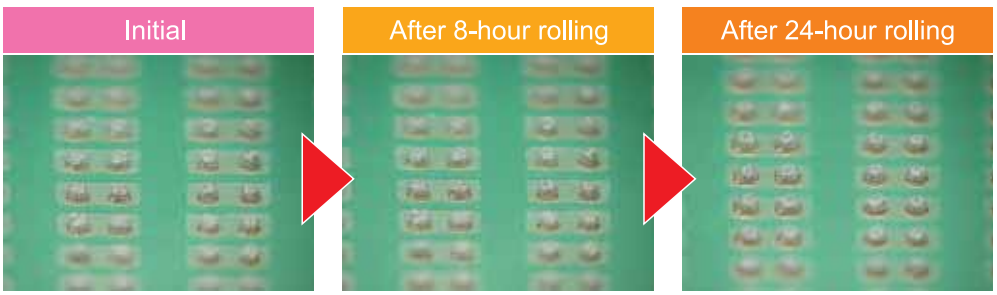
Super fine solder particles tend to react with the flux medium and often cause an increase of viscosity during continual printing. It is extremely important to obtain a consistent rheology of the solder paste to ensure a quality print especially with 0402 or finer patterns.

Employment of an activator system which helps curb the chemical reaction between solder particles and flux, has stabilized the viscosity during the continual print process.

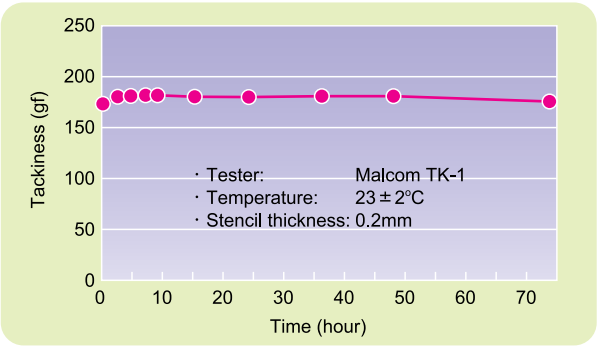


Print conditions

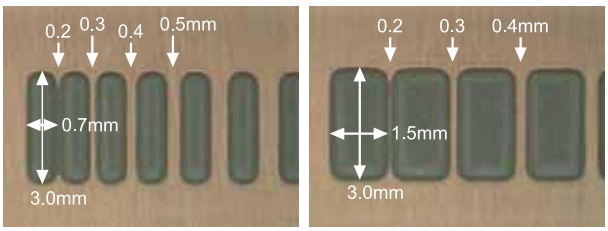
- Stencil: 80μm
- Squeegee: Metal
- Print speed: 30mm/sec
- Print pattern: 0.2×0.2mm



■ Tack time



■ Heat slump

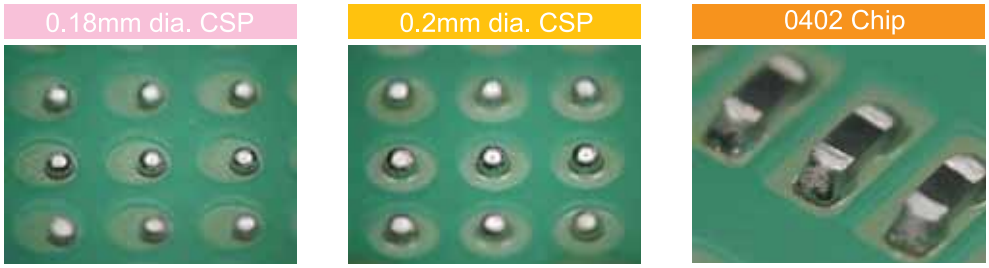


· Heat profile : 180~190°C × 120 sec.
· Test method : JIS Z 3284

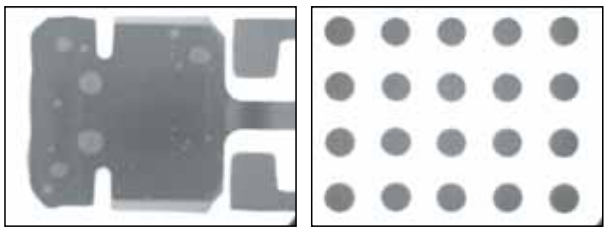
■ Solder coalescence

Since super fine solder particles have a much larger relative surface area and an absolute volume of flux medium per solder paste deposit, as the protection barrier for oxidation is at its limit, it is often the case that incomplete coalescence to super fine patterns, such as CSP, occurs due to excessive oxidation. S3X70-M407-4 has succeeded to overcome this problem, without increasing the flux content, by developing a totally new activation technique.

Reflow conditions
- Pre-heat : 140-185°C × 120sec
- Peak temp : 235°C
- Time >220°C: 5sec.

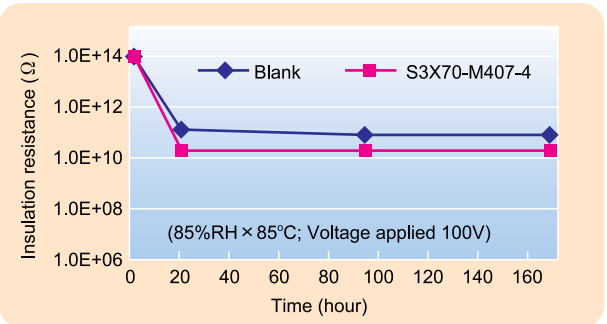


■ Voiding

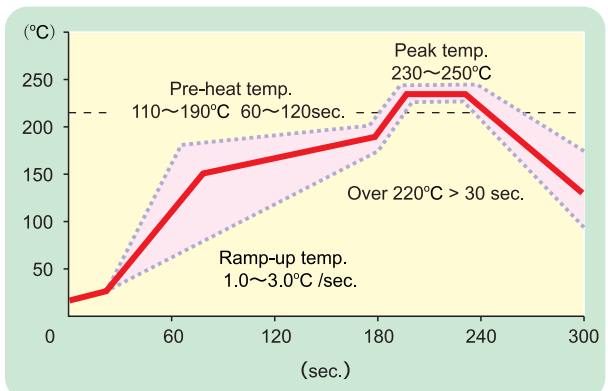


Power Tr. (100Sn) BGA (SAC305; 1.0mm pitch)

■ Voltage applied SIR



■ Recommended reflow profile



■ Specifications

Application		Printing - Stencil
Products		S3X70-M407-4
Alloy	Composition (%)	Sn96.5, Ag3.0, Cu0.5
	Particle size (μm)	10 - 25
Flux	Halide content (%)	0.0
	Flux type	ROL0 (ANSI / J-STD-004)
Product	Flux content (%)	12.0
	Viscosity (Pa.S)	210
	Copper plate corrosion	Passed
	Solder spread factor(%)	> 78
	Tack time	> 72 hours
	Shelf life (below 10°C)	6 months

*Specifications are subject to change.

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