

ASIG ESM 100

Autocatalytic Silver Immersion Gold



Advantages of ASIG - Autocatalytic Silver with Immersion Gold

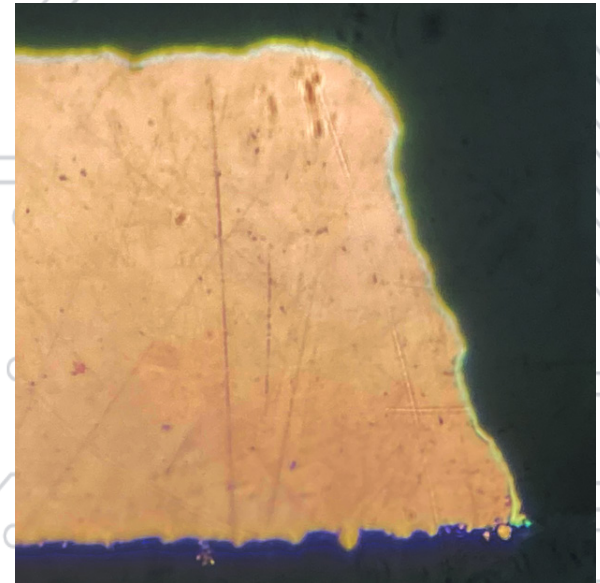
Technic's ASIG process is a significant advancement over traditional immersion silver. It is the best conductive metal for 5G applications, performing exceptionally well up to 300 GHz. Unlike other processes, ASIG causes no damage to the copper and provides superior surface sealing, effectively preventing copper diffusion to the surface—a phenomenon known as creep corrosion. To further enhance protection, an immersion gold deposit can be applied, which shields the silver similarly to how it protects in ENIG processes. Immersion gold offers robust protection in harsh environments, especially in applications where solder mask is not used.

Features

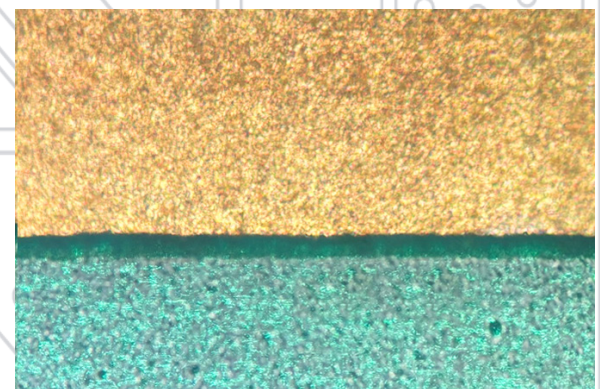
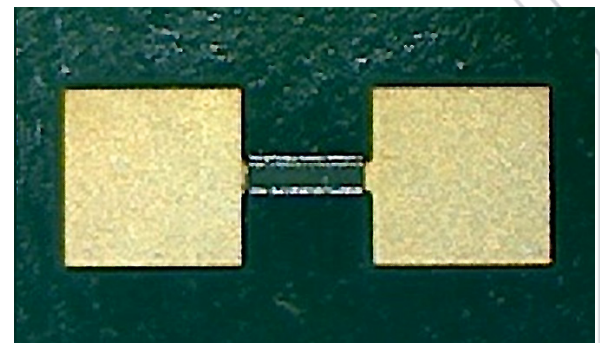
- Excellent RF properties
- Nickel-free
- Ideal for wire bonding and soldering
- Optimal for 5G spectrum
- Superior corrosion resistance
- Cost-effective

Benefits

- Enhanced reliability
- Simple operation
- Stable process
- AOI friendly
- Long life process
- Lowest signal lost process



Uniform deposit, with no footing.



On strong negative solder mask (SM) footings, ASIG thoroughly covers the copper without dissolving the solder mask or creating copper cavities, preventing the onset of creep corrosion.

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The ASIG ESM 100 process delivers excellent and predictable results in both horizontal and immersion equipment. Its finely sealed surface enhances conductivity and reliability, even in harsh environments.

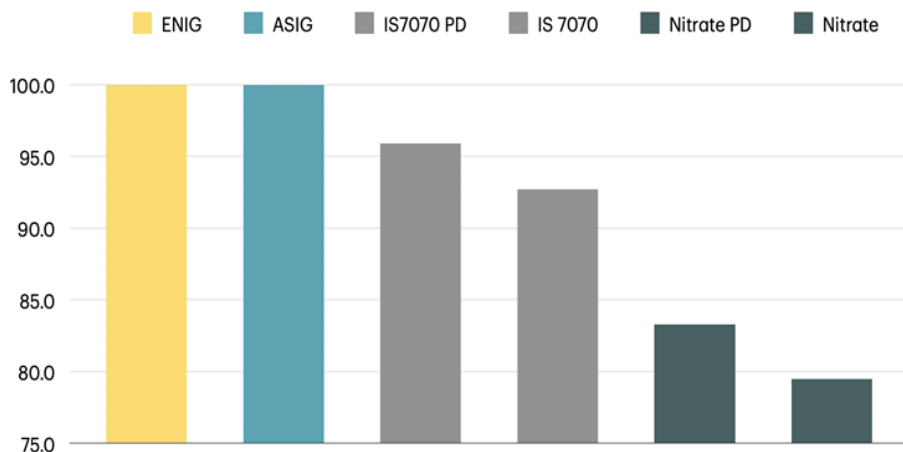
The process is simple to operate, with automatic additions and analysis, making the ASIG ESM 100 both robust and economical. Its stable operation and extended bath life contribute to a user-friendly experience.

ESM 100 ASIG eliminates issues associated with nitrate-based immersion silver, such as creep corrosion and champagne voids, while offering the added protection of immersion gold. ASIG ESM 100 is wire bondable, solderable, and durable, even without a solder mask, making it ideal for the full 5G spectrum up to 300 GHz.

Economical, simple, robust, and reliable, the ASIG ESM 100 process is designed to meet today's challenges, representing a strong step forward in PCB technology.

Benchmark Corrosion Test

As demonstrated below, both ENIG and ASIG offer superior overall protection for PCBs. However, ASIG stands out as a nickel-free solution with low silver and gold content, making it ideal for the full 5G spectrum. Its robust design also ensures excellent performance in harsh environments.



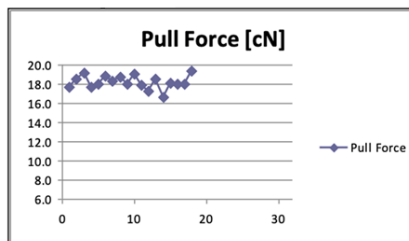
Criteria:

- Appearance
- Solder Float
- Nitric Acid Porosity
- Multiple OSP Pre-Clean Passes
- Creep Corrosion in a Sulfur Rich Environment

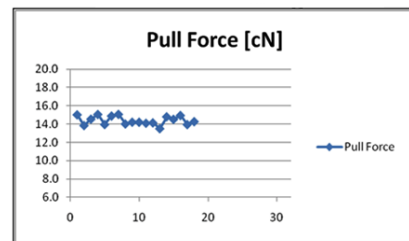
Wire Bonding

Aluminium wire bond ESM 100, 25µm wire

0.15µm Ag as plated (5 min)

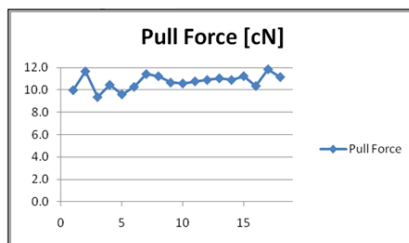


0.15µm Ag after ageing

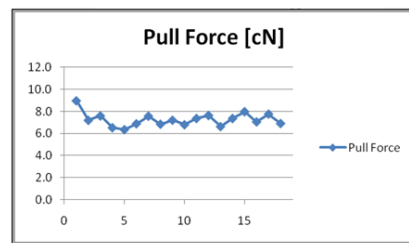


Gold wire bond ASIG, 25µm wire

0.15µm Ag as plated (5 min)



0.15µm Ag as plated (5 min)



Bond Pull Strength Requirements (MIL-STD-883G)

Minimum Bond Pull Strength:

- Pre-Seal: ≥ 6.8 grams-force
- Post-Seal: ≥ 4 grams-force

After Thermal Cycling:

- Bond wire strength must exceed 4 grams-force to meet standard requirements.
- ASIG Exceeds requirements



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