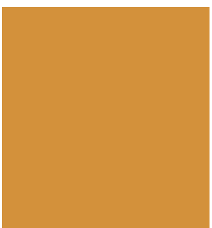
# Samples

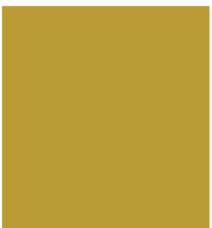
**ATP1001: Standard Metallization Bondable**
Standard TaN/TiW/Au metallization on Aluminum Oxide ($Al_2O_3$) is used in applications that require wire bonding, ribbon bonding, epoxy and various other types of attachment, such as Gold Tin, Gold Germanium and Gold Silicon.

**ATP1002: Nickel Metallizations Solderable**
TaN/TiW/Ni/Au is one of the Solderable metallizations on Aluminum Oxide ($Al_2O_3$) ATP offers. Due to the layer of Ni, this metallization scheme allows better soldering with integrated TaN resistors.

**ATP1003: Palladium Metallization Solderable**
TaN/TiW/Pd/Au metallization on Aluminum Oxide ($Al_2O_3$) is a wire bondable metallization scheme that is processed in a proprietary manner that reduces the amount of Au "Leaching" that commonly occurs during densely-populated high-temperature attachments, such as Gold Germanium and Gold Silicon. This process allows a good fillet attachment around your components without leaching outlining areas.



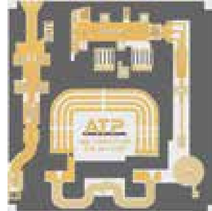
**ATP1004: AlN Submount – Thermal Solderable**
TiW/Pd/Au is a Solderable metallization scheme on Aluminum Nitride (AlN). AlN has a thermal conductivity of 170Watts/mK it is ideal for thermal applications with mounting and aligning the most sensitive light emitting diodes.



**ATP1005: BeO Submount – Thermal Solderable**
TiW/Pd/Au is a Solderable metallization on Beryllium Oxide (BeO). Since BeO has a thermal conductivity of 270 Watts/mK, it is ideal for the toughest thermal applications.

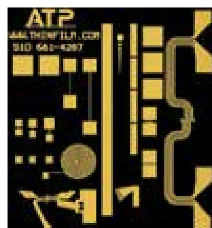
**ATP1006: Plated Thru Vias**
TaN/TiW/Au metallization with laser-drilled, conductive, plated-thru via holes in Aluminum Oxide ($Al_2O_3$) provides a cost effective solution for applications that require interconnects to ground. The conductive plated thru vias replace the tedious process of bonding from the top side of the circuit to ground.

**ATP1007: Polyimide Supported Bridges**
TaN/TiW/Au metallization on Aluminum Oxide ($Al_2O_3$) with polyimide supported Lange coupler interconnects. This process provides a consistent Lange coupler interconnect, which reduces test and tune time and eliminates wire bonding. Since the interconnects are supported by 3 to 4 microns of polyimide, there is no risk of collapsing or damaging the bridge during shipment or assembly.



**ATP1008: Plated Gold Bumps**
TaN/TiW/Au metallization with plated Gold Bumps on Aluminum Oxide ($Al_2O_3$). Gold Bumps are used to eliminate wire bonding, which will improve electrical performance at higher frequencies. This is done by eliminating long bond wires and flipping the chip onto the Gold contact bumps.

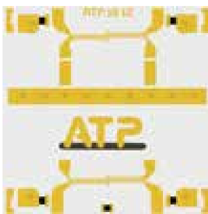
**ATP1009: Polyimide Filled Vias**
TaN/TiW/Au metallization with polyimide filled, conductive, plated-thru-laser-drilled via holes in Aluminum Oxide ($Al_2O_3$). Polyimide is used as a non-conductive plug for via hole assemblies. Will prevent epoxy and eutectic solders from reaching the surface of the circuit, while keeping continuity between back side and front side surfaces.



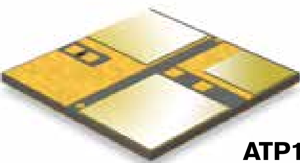
**ATP1010: Fused Silica/Quartz Circuit**
TaN/TiW/Au on Fused Silica/Quartz and is used in applications that require a low Dielectric Constant. This material has a 60/40 Optical polish with high dimensional accuracy.

# Samples

**ATP1011: AlN Circuit – Thermal**
TaN/TiW/Au on Aluminum Nitride (AlN) is used in applications that require a high thermal conductivity of 170Watts/mK. It is ideal for mounting and aligning the most sensitive light-emitting diodes.



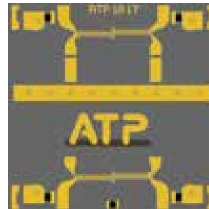
**ATP1012: Au Solid Filled Via**
**ATP1012: Cu Solid Filled Via**
TaN/TiW/Au with solid gold or copper-filled vias on Aluminum Oxide ($Al_2O_3$). The Au and Cu via is completely filled and polished to provide a planarized surface, providing a low inductance ground path on both sides without venting structures, dissimilar metals or exposed oxides. A filled via can also act as a thermal via or two-sided signal interconnect.



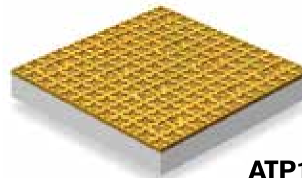
**ATP1014P: Plated (Au/Sn)**
**ATP1014S: Sputtered (Au/Sn)**
Pre-deposited and patterned Gold Tin on Aluminum Nitride (AlN). The use of pre-deposited and patterned Au/Sn that is Sputtered(S) or Plated(P) replaces the more traditional approach of using Au/Sn preforms. ATP's standard alloy composition is 80% Au and 20% Sn and reflows at 284°C.

**ATP1015: Enforced Via**
TaN/TiW/Au with Conductive plated thru $CO_2$ drilled vias holes with ATP's Enforced hollow plated Via Wrap on Aluminum Oxide ($Al_2O_3$). The enhanced via wrap is an additive process to ATP's standard via process. This process will ensure increased via hole stability and conductivity.

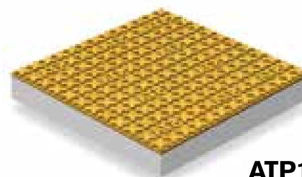
**ATP1016: Epoxy No Bleed Metallization**
TaN/TiW/Au metallization on Aluminum Oxide ($Al_2O_3$). ATP offers a proprietary Gold metallization scheme that reduces epoxy bleed out during assembly. This process is wire and ribbon bondable.



**ATP1017: Au Solid Filled Via**
**ATP1017: Cu Solid Filled Via**
TaN/TiW/Au with solid gold or copper-filled vias on Aluminum Nitride (AlN). The Au and Cu via is completely filled and polished to provide a planarized surface, providing a low inductance ground path on both sides without venting structures, dissimilar metals or exposed oxides. A filled via can also act as a thermal via or two-sided signal interconnect.



**ATP1018: New Fractal Fasten Female**
A unique backside metallization developed to enhance the adherence of substrates to carriers using *paste* epoxies.



**ATP1019: New Fractal Fasten Male**
A unique backside metallization developed to enhance the adherence of substrates to carriers using *film* epoxies.

**ATP1020: Plated Cu Samples**
TiW/Au/Cu/Ni/Au metallization on Aluminum Oxide ($Al_2O_3$) that is used as a high conductivity film that may require Pb/Sn soldering. Copper and Ni, combined or separately, can be plated as thick as 0.001" or 25.4µm.