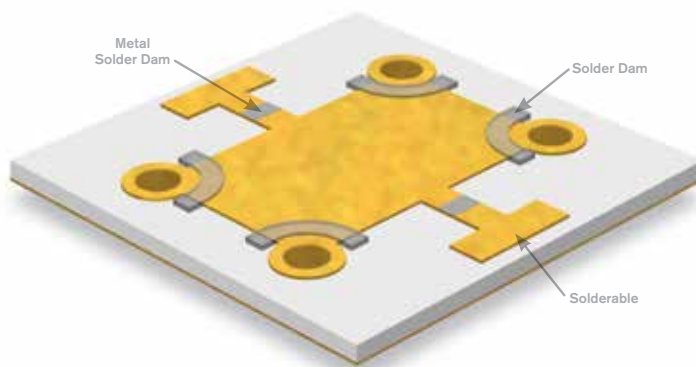# Solder Dams

Polyimide Solder Dams

Polyimide can also be used as a braze stop or solder dam. This polyimide is photo-definable and is non-conductive. The typical height of the solder dam is 3 to 6 microns.

Metal Solder Dams

Oxidizing metals can also be used as solder dams. The more common metals used for this purpose are TaN, TiW and Ni. The metal solder dam structures are photo-defined. These metals can either be placed on the Au conductor or windows can be opened in the conductor structure to expose these underlying layers.

Metal Solder Dam · Solder Dam · Solderable

Polyimide Solder Dam

Tensile Strength	Mpa	215
Young's Modulus	Gpa	2.5
Tensile Elongation	%	85
Glass Transition Temperature	°C	285
Thermal Decomposition Temperature	°C	525
Coefficient of Thermal Expansion	ppm/°C	55
Coating Stress (100 silicon)	MPa	33
Dielectric Constant 1 MHz; 0%/50% RH		3.2/3.3
Dissipation Factor 1 MHz; 0%/50% RH		0.003/0.008
Dielectric Strength	V/µm	345
Moisture Absorption @ 50% RH	%	1.08
Density	g/cc	1.39
Refractive Index @ 633nm		1.69

Gold Bumping

ATP can provide gold (Au) bumping for the Flip Chip Technologies. Gold bumps are used to eliminate wire bonding which will improve electrical performance at higher frequencies by inverting a compatible device directly onto the gold bumps.

The bumps are a high purity, plated Au. They are fabricated using a photolithographic process that insures precise, repeatable placement onto the circuits. The top diameter of the bump will be slightly smaller than the diameter of the base. The bumps are designed solely for thermal compression attachment methods with gold.

Gold bumps are compatible with many of the other capabilities offered by ATP such as integrated resistors, conductive vias, polyimide bridges and solder dams. This allows you to minimize your assembly steps and optimize your design.

Typical gold bump height is: 0.001" (25.4microns) typical, 50µm max
Typical gold bump diameter is: 0.001" (25.4microns) typical
Minimum distance between bumps and circuit edge is: 0.001" (25.4microns) typical
Minimum distance between bumps and conductor edge is: 0.0005" (12.7microns) typical