



**Metuchen Capacitors, Inc.**  
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**“We Offer Quick Solutions to Noise Pollution”**

## Advantages and Disadvantages Of Various Terminations On Multi Layer Capacitor Chips

TERMINATION	ADVANTAGES	DISADVANTAGES
Palladium-Silver	Least expensive. Non-magnetic.	May be harder to solder than others. May, if unprotected, under severe conditions, facilitate leaching of electrodes, resulting in loss of layers or catastrophic failure. User should use a silver saturated solder such as SN62 to connect to board.
Palladium-Silver Solder plated	Easier for user to solder in place. In critical applications solder plate adds less ESR than dipping due to thinner coating. Non-magnetic.	May, if unprotected, under severe conditions, permit leaching of electrodes, resulting in loss of layers or catastrophic failure. User should use a silver saturated solder such as SN62 to connect to board.
Palladium-Silver, Hot solder dipped	Solder can be silver saturated which minimizes chances of leaching. Easier for user to solder in place. Non-magnetic.	Solder dipping more costly than plating. Still may, if unprotected, permit leaching of electrodes, particularly if non-silver bearing solder is used.
Thick film Gold	Will not leach. Can be wire bonded. Non-magnetic.	Costs about \$.02/chip for gold. Wire bonding tricky
Palladium-Silver, Nickel coated and hot solder dipped.	If manufactured properly will not leach.	Magnetic. Nickel plating adds some cost as does solder dipping.
Palladium-Silver, Nickel coated and solder plated.	If manufactured properly will not leach. Solder plating less costly than dipping. In critical applications solder plate adds less ESR than dipping due to thinner coating.	Magnetic. Nickel plating adds some cost.
Palladium-Silver, Copper coated and hot solder dipped.	If manufactured properly will not leach. In critical applications adds less ESR than nickel. Non magnetic	Copper plating add slightly more cost than nickel. Solder dipping more costly than plating.
Palladium-Silver, Copper coated and solder plated.	If manufactured properly will not leach. Solder plating less costly than dipping. In critical applications solder plate adds less ESR than dipping due to thinner coating. Non magnetic.	Copper plating add slightly more cost than nickel.
Palladium-Silver, Palladium plated and hot solder dipped	Best assurance against leaching. Non magnetic.	Pd adds \$.01 to .02 per part. Solder dipping more costly than plating.
Palladium-Silver, Palladium plated and solder plated.	Best assurance against leaching. In critical applications solder plate adds less ESR than dipping due to thinner coating. Non magnetic.	Pd adds \$.01 to .02 per part.
Palladium-Silver, Nickel and Gold plated.	Wire bondable; better than Thick film Gold. Will not leach.	Gold adds about \$.02 per part. Magnetic
Palladium-Silver, Copper and Gold plated.	Wire bondable; better than Thick film Gold. Will not leach. In critical applications copper adds less ESR than nickel. Non magnetic.	Gold adds about \$.02 per part.
Palladium-Silver, Palladium and Gold plated.	The Cadillac. Wire bondable Non leaching Non magnetic.	User must pay for the Cadillac.



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