PROCESS APPLICATION GUIDE

PASSIVE COMPONENT TIN AND TIN/LEAD PLATING

PLEASE NOTE: This document is for guidance only.
Please refer to the appropriate Technical Data Sheet for additional information.

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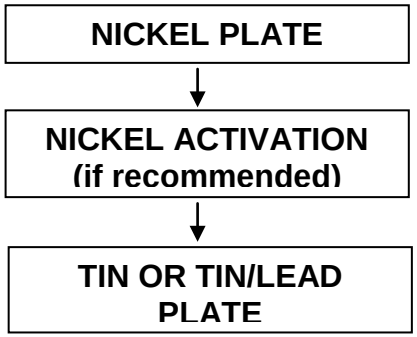
Process Flow



PASSIVE COMPONENT TIN AND TIN/LEAD PLATING – RECOMMENDED PROCESS SEQUENCE

Process Step	Recommended Process	Description	Process Makeup	Temp.	Current Density	Dwell Time	Recommended Control and Replenishment Schedule	Comments
Ni Plate	Techni Nickel S	Low stress, semi-bright, ductile nickel plating process for rack/barrel and SBE	Nickel Sulfamate Conc 24 oz/gal: (180 g/l Ni metal): 440 ml/l Nickel Bromide Conc: 40 ml/l Boric Acid: 30 g/l HN-5: 10 ml/l Nickel Sulfamate Semi-bright Additive (optional): 7.5 ml/l Nickel Sulfate Stress Reducer (optional): 25 ml/l DI water: balance pH: 3.0 – 4.5	50-60°C	0.3-5.0 ASD	Dependent upon thickness requirement	Replenish based on analysis	Can be used as a nickel underplate or final finish. Easy to operate and control. Full bright deposit. A general purpose bath which should be recommended for all non-critical applications. Uses nickel bromide for anode corrosion.
Ni Activation	If recommended, see your Technic service representative for details.							Only recommended for components which are acid resistant.
Tin/Lead Plate	Ceramistan DM	Satin tin or tin/lead process for passive components.	CeramiStan DM Makeup Concentrate: 300 ml/l CeramiStan DM Conductivity Concentrate: 300 ml/l Techni Solder NF Tin Conc : 33 ml/l Techni Solder NF Lead Conc : 0.4 ml CeramiStan DM Additive: 100 m/l Ceramistan DM Antioxidant : 20 ml/l Potassium Hydroxide (30%): To desired pH (3.0-4.5)	20-45°C	0.05 – 2.0 ASD	As required to obtain desired deposit thickness	For every 100 ml of drag-out from the bath, replenish approx: CeramiStan DM Makeup Conc: 30 ml CeramiStan DM Conductivity Conc: 30 ml CeramiStan DM Additive: 11 ml Techni Solder NF Tin Conc: 4.9 ml Ceramistan DM Antioxidant: 2.0 ml	Satin tin or tin/lead plating process for standard chip capacitor/chip resistor plating applications. Suitable for barrel plating or SBE equipment. See TDS for 90/10 and 60/40 tin/lead formulations.

Process Step	Recommended Process	Description	Process Makeup	Temp.	Current Density	Dwell Time	Recommended Control and Replenishment Schedule	Comments
Tin Plate	Ceramistan 1031	Satin tin plating process for passive components	CeramiStan 1031 Electrolyte: 700 ml CeramiStan 1031 Tin Conc: 50 ml CeramiStan 1031 Secondary: 0.5 ml MSA (70%) OR Potassium Hydroxide (30%): To desired pH	20-35°C	0-2 ASD	As required to obtain desired deposit thickness	For every 100 ml of drag-out from the bath, replenish approx: CeramiStan 1031 Complexor: 30 ml CeramiStan 1031 Conductivity Conc: 30 ml CeramiStan 1031 Additive: 5 ml CeramiStan 1031 Tin Conc: 5 ml	Satin tin process with superior stability. Very low coupling and deposits with excellent solderability characteristics.

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