

Parmod VLT Inks for Flexible Circuits

Parmod® VLT conductive inks and pastes enable the printing of flexible circuit designs at high speed and low cost.

Parmod VLT is a mixture of metal powders with metallo organics formulated as an ink or paste for printing electronic interconnects.

Increase Your (Flex)ibility with Parmod VLT

Parmod VLT delivers high performance at reduced cost and can be used in a variety of ink and substrate systems.

- Parmod VLT solderable silver on Parelec's Modflex™ polyimide system is a low-cost alternative to copper-clad Kapton® for producing reliable flex circuits with reflow solder component attachment.
- Parmod VLT "through hole" capability allows the design of double-sided circuits with side-to-side interconnect capability and reflow-solderable traces.
- For cost-sensitive applications, Parmod VLT silver ink on low cost polyester substrates enables cost effective circuits with electrical and mechanical performance superior to polymer thick film ink systems.

Print It ... with Parmod VLT

Parmod VLT's simple and cost effective two-step "print and cure" process significantly reduces process steps compared with etched copper circuits, facilitating a manufacturing environment adaptable to low volume flexible manufacturing or scalable to high volume low cost manufacturing.

Parmod VLT inks are printed with conventional printing techniques such as screen and roto-gravure, and are cured at low temperatures compatible with high volume, low cost printing environments. Whatever your printing needs, there's a Parmod VLT ink formulation for your application.

No matter what the application, flex circuit performance is critical—it must be made from quality materials that offer both consistency and reliability.



The Benefits of Parmod VLT

Lower Cost

Parmod VLT uses a totally dry process, eliminating the wastes and costs associated with subtractive etching. Due to its higher conductivity versus polymer thick film, less ink is required, thus lowering material costs.

Higher Density

Due to the high conductivity of Parmod VLT, flex circuit designs with fine feature size are possible, enabling miniaturization of electronic devices.

Solderability

Flex circuits printed with Parmod VLT inks are reflow solderable within the capability of the substrate to withstand the soldering process.

Rapid Processing

With Parmod VLT, conductors are cured onto substrates in minutes without costly finishing steps. This increases productivity and efficiency, reduces inventory and provides faster turnaround.

Substrate Compatibility

Parmod VLT is compatible with a number of familiar substrates – such as polyimide, PEN, PET and FR-4 – allowing for a wide variety of uses across a broad spectrum of applications.

Environmentally Friendly

Unlike subtractive and semi-additive processes, where copper must be etched away and hazardous plating waste discarded, Parmod VLT uses an environmentally friendly, additive process, which results in no hazardous waste.

Parmod VLT
PRINTED ELECTRONICS

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Substrate	Cure Temperature	Cure Time Silver	Resistivity Silver (m-ohms/sq/mil)	Cure Time Copper	Resistivity Copper (m-ohms/sq/mil)	Component Attach
Polyester or Modflex™ Polyester	135° C	10-15 min.	2-6	NA	NA	conductive adhesive
	150° C	5-10 min.	2-4	NA	NA	conductive adhesive
Modflex™ PEN	180° C	10-15 min.	2-4	NA	NA	conductive adhesive
	210° C	5-10 min.	2-4	NA	NA	low temp solder
Modflex™ Polyimide	260° C	6-10 min.	2-6	6-10 min.	2-6	solder
	320° C	5 min.	2-4	5 min.	2-6	solder

Replace subtractive circuitry with the high conductivity, unique print capabilities and adaptable dry process of Parmod VLT.

About Parelec

Parelec develops and markets Parmod® VLT inks and other innovative materials for the electronics industry. Parmod VLT can be printed onto paper or polyester substrates in high volume circuit applications with three to ten times greater performance than traditional polymer based metal inks. Parmod VLT inks provide solderable circuits when printed on high temperature substrates. Parmod VLT inks help create cost-effective, mass produced circuit components ranging from higher cost durable consumer devices, such as cellular phones, home electronics, appliances, automobiles and computers, to less expensive high volume disposable products, such as RFID smart labels, product identification tags, and intelligent packaging. Parelec's headquarters is in the high-tech corridor near Princeton, New Jersey. For more information visit www.parelec.com



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