

News Release from DKN Research, Haverhill, Massachusetts

“DKN Research Supplies Appropriate Substrates for Printable Electronics Engineering Trials.”

DKN Research, a leading engineering firm specializing in micro electronics and packaging technology now supplies substrate materials for printable electronics. DKN Research developed a broad range of screen-printing technologies for advanced thick film circuits including fine line conductors down to 30 microns, multi-layer circuits with printed via holes, printed passive components, printed EL devices, printed connectors and more. To optimize the performances of the electronic circuits and devices produced by screen-printing, suitable selections of the substrate materials are necessary. DKN Research now provides appropriate substrates for thick film circuit applications as well as engineering support.

Polymer thick film circuits were always considered an economical solution, but performance levels from the printed circuit technology were sub par due to poor resolution and electrical conductivity. Traditional thick film circuits were intended for typical low end items such as keyboard membrane switches and touch panels on microwaves. Technical advances with ink materials and printing equipment over the last few years has trickled down, and the wiring capabilities from the new thick film circuits are closer to traditional etched copper circuits.

DKN Research has developed a series of “Advanced Screen-Printing Technologies” and can build functional thick film circuits by partnering with equipment and material manufacturers. DKN’s Advanced Screen-Printing Technology can produce fine silver traces down to 30 micron lines and spaces for double and multilayer circuits with 80 micron via holes. The conductivity of the new silver traces is one order higher compared to traditional thick film circuits. Surprisingly, the conductor traces are available for soldering, unlike traditional polymer thick film circuits where soldering is impossible. Additionally, the new Advanced Screen-Printing Technology makes it possible to build embedded passive components and EL based optical components on flexible substrates. The Advanced Screen-Printing Technologies are valuable in building new electronic devices such as high-density touch panel switches, functional sensor modules, large size signboards, flexible displays and more. The technologies are also beneficial to build additional fine conductive traces on other circuit devices including multi-layer rigid boards, flexible circuits, ceramic circuits and monolithic IC chips.

To build these circuits and devices by screen-printing, whole sets of materials, screen masks and printers are required. Ink materials are definitely the first priority to consider when using the screen-printing process; however, our engineers at DKN Research find it equally important to choose the correct substrate material to optimize the performances of the circuits and devices that are screen-printed. For this reason, DKN Research decided to make available their engineering information for substrates and provide actual materials. This is especially valuable to those clients who want to experiment with flexible films using advanced screen-printing technologies. DKN Research has a broad range of flexible substrates that include polyester, polyimide, PEN (polyethylene naphthalate), LCP (liquid crystal polymer), PEEK (Polyethylethyl ketone), coated paper, FR-4 (Glass/Epoxy) and more. The substrate materials are conditioned for advanced screen-printing trials; these specially treated substrates are available by the sheet or roll. DKN Research can also provide custom made substrates for special projects if standard materials are not adequate. Research engineers frequently experiment with a series of materials in small volume applications with new R&D projects. DKN Research can supply the substrate materials in small quantities and provide engineering support for customer’s convenience.

DKN Research inventories a broad range of materials, and can supply appropriate materials according to the application. DKN Research can conduct prototype and mid volume fine line thick film circuit production as a part of the engineering service with its cooperating partner companies.

DKN Research welcomes all inquiries relative to learning the process and executing technical applications using their Advanced Screen-Printing Technology to create your own circuit devices. Please click on our link for more information www.dknresearch.com, or contact us at sales@dknresearch.com for detailed technical information and circuit samples.

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