flexible circuits

unlimited applications

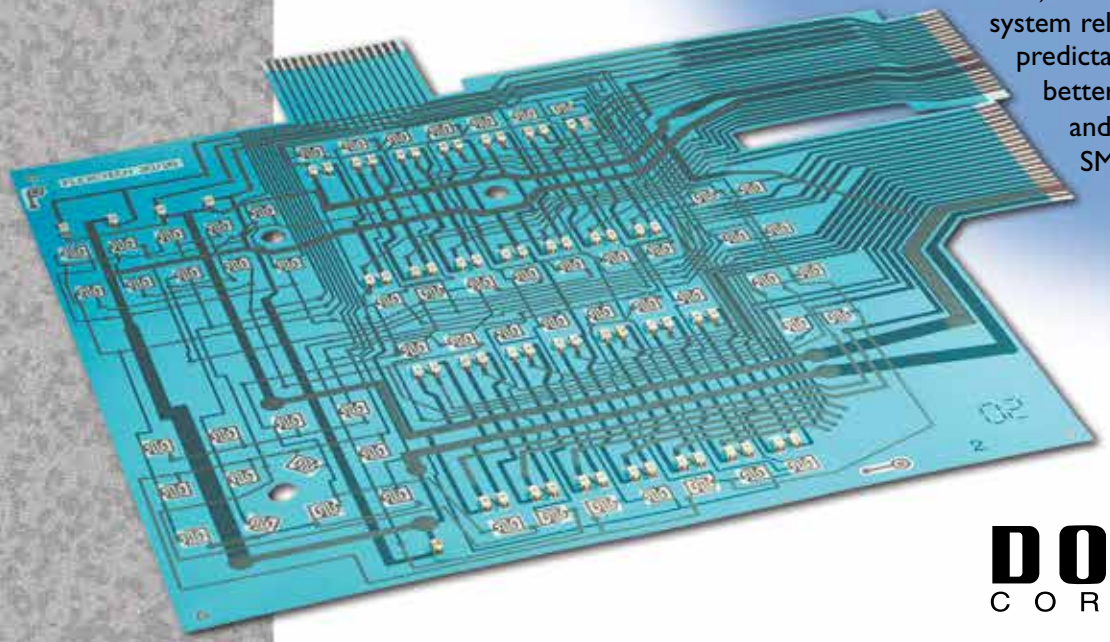
flexibility is the key

FLEXIBLE CIRCUITS MANUFACTURED BY DOUGLAS...A PERFECT FIT.

With 70 years of product graphic design experience and screen print manufacturing of membrane switches, it was a natural progression for Douglas Corporation to enter the Flexible Circuit market. The processes are parallel to the degree that we can apply our expertise to the production of high-tech, precision engineered flex circuits.

Flexible circuits offer several advantages over etched copper circuits, including but not limited to: lower costs, lower volume and weight, thickness reduction, double access, improved reliability, easily shielded, repeatable electrical characteristics and increased circuit flexing capabilities.

Douglas can produce a wide variety of flex configurations with typical required applications to include: flexing of the circuit ribbon, reduction of package weight, restricted space requirements, minimized assembly errors, better system reliability, increased heat transfer, predictable electrical characteristics, better conformance to enclosure and to accommodate smaller SMD components.



DOUGLAS
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flexible circuits

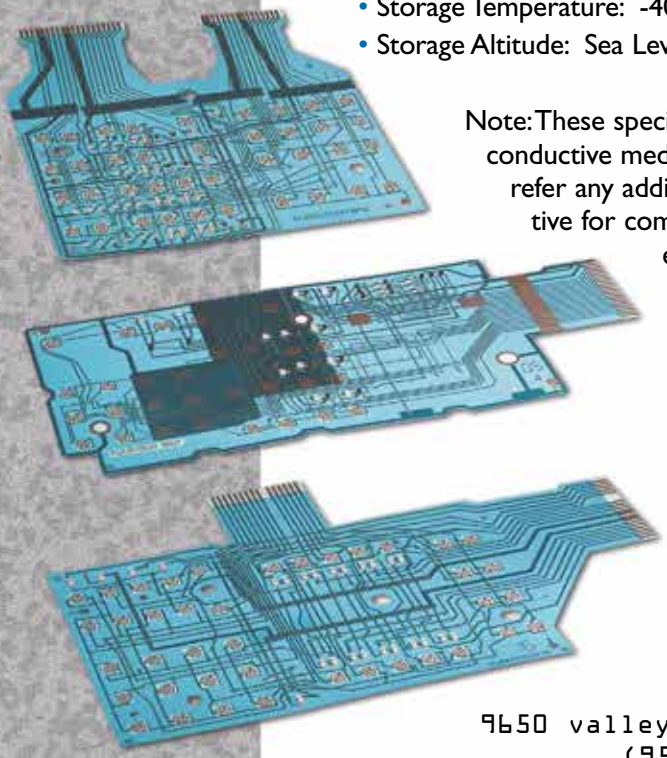
FLEX CIRCUIT DESIGN GUIDELINES:

- Base Material: Typically .005" or .007" heat stabilized polyester.
- Conductive Inks: Silver, carbon and silver-carbon blends.
- Dielectrics: Standard screen printed electronic insulating materials.
- Circuit: Typically .010" wide (min.) lines and spaces / .002" typ. ht.
- Multi-layer Circuitry: Three layers (max.) to maintain circuit integrity with shielding capabilities.
- Resistance: Typical circuit loop or output resistances will be less than 100 ohms and are dependent upon specific circuit designs.
- Attached Component Resistance: Typical conductive adhesive resistances are 25 to 35 milliohms.
- Performance Characteristics: All ASTM standards for membrane switches and flex circuits are met or exceeded.
- SMD Components Installation: Most SMD components are available and are accurately and securely installed using state-of-the-art SMD technology.

For additional mechanical, electrical and environmental capabilities, contact your Douglas sales representative or your Douglas engineering specialist.

SPECIFICATIONS:

- Operating Voltage: 0 - 30 VDC.
- Operating Current: 100 MA max.
- Operating Loop Resistance: Less than 100 OHMS typical.
- Conductors: Silver, carbon or carbon blend.
- EMI, RFI and Static Shielding: Available in most applications.
- Storage Temperature: -40°C (-40°F) to +85°C (158°F).
- Storage Altitude: Sea Level to 40,000 ft.



Note: These specifications are general and may vary depending upon circuit construction, conductive medium, component requirements and unique customer applications. Please refer any additional specifications or requirements to your Douglas sales representative for complete and timely response to your questions. Our sales department and engineering staff are always available for your convenience.

ISO 14001:2004 AND
ISO/TS 16949:2009 CERTIFIED

DOUGLAS
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