



TECHNICAL DATA SHEET

*ELECTRA^ΩD'OR*TM

ED7100 SERIES

CARBON RESISTOR PASTES
FOR RIGID CIRCUIT BOARDS

PRODUCT DESCRIPTION

ED7100 CARBON RESISTOR PASTES are manufactured using high quality carbon and graphite powders to give a wide range of values. They are suitable for producing both fixed (discrete) and variable (potentiometers) resistors and are used in both commercial and automotive applications. They are suitable for use on FR4 material, particularly in applications where temperature stability must be achieved in conjunction with minimum cure temperature.

FEATURES & ADVANTAGES:

- **Hard surface.** **ED7100** is formulated to give a surface hardness of 6H thus eliminating wear from contacts/sliders and reducing noise.
- **Tailor made values.** **ED7100** can be made to specific resistance values required by the customer.
- **Large resistance range.** **ED7100** ranges from $200\Omega\Box^{-1}$ to $1\text{ Meg}\Omega\Box^{-1}$ in resistance. All can be processed under the same conditions allowing many values to be printed, dried and then cured together, placing less thermal stress on the substrate.
- **Board cost savings.** **ED7100** can replace groups of discrete resistors with a single screen printing operation, thus cutting assembly costs and increasing PCB real estate.

Resistance: Under certain circumstances, if artwork and sample boards are supplied Electra's laboratory will formulate the resistance value for a particular set-up.
All Electra resistance values are those achieved when printing with a 200 mesh stainless steel screen.

PROCESSING

Printing: Pastes should be printed using a 55 to 77T polyester mesh. For applications requiring fine print definition or tight resistance tolerances it is advantageous to use a 200 mesh stainless steel screen as this will reduce distortion.

Drying: Resistor pastes can be dried for 10 mins at 160°C or 15 mins at 140°C allowing the printing of several values, all of which can be final cured in one process.

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ED7100rev6



Curing: 1-2½hours at 150-165°C.

Important: IR curing is the most efficient method of curing carbon inks, however resistance values and cure speeds will be dependent on IR wavelength and intensity, please contact Electra technical service department for recommendations.

VISCOSITY ADJUSTMENT

If required Resistor pastes can be reduced using **ER7** Reducer. Care should be taken not to add too much reducer since this may adversely affect the printing properties and cured ink resistance values.

CLEANING:

After printing the screen and stencil should be cleaned of residual paste using Universal Screenwash **SW100**.

SHELF-LIFE:

6 months at room temperature, up to 9 months if refrigerated.

PERFORMANCE PROPERTIES

Temp/resistance change. ±1. 2% over range -15 to +150°C. Best results are achieved using silver terminations.

Resistivity. 200Ω□⁻¹ to 1MegΩ□⁻¹

ED7100 resistor pastes manufactured to a tolerance of +/- 20% of specified value (as tested under Electra's QC processing conditions).

It should be noted that print thickness and curing conditions can influence the resistance value achieved in a production environment

Contact wear. Excellent contact wear below 50g pressure on 1.3mm radius.

Adhesion. Excellent - passes IPC D-320.



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