



ESL Electro-Science

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CO-FIRE CERAMIC TAPE

41010

Co-Fire Ceramic Tape For Multilayer and Microwave Applications Requiring Dielectric Constant ~ 7

A flexible cast film of inorganic dielectric powder dispersed in an organic matrix, is designed to be fired at 850°C to 875°C to give a dense body. Multilayer parts can be formed by laminating metallized sheets of the tape into a monolithic structure prior to firing. A pressure/temperature combination of 21 MPa and 70°C works well for laminating this tape. Ceramic tape is provided on a silicone-coated polyester film to minimize environmental contamination, to protect it from mechanical damage, and to aid in handling. This material is useful in microwave applications that require a low dielectric constant.

PROCESSING PARAMETERS

LAMINATING:	21 MPa at 70°C
FIRING TEMPERATURE:	850°C-875°C
TIME AT PEAK TEMPERATURE:	10 minutes

TAPE CHARACTERISTICS

TAPE THICKNESS:	100-130 µm
COLOR:	off white
SHELF LIFE:	6 months

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See Caution and Disclaimer on other side

FIRED TAPE PROPERTIES

DIELECTRIC CONSTANT: (1 MHz)		7.0-8.0
DISSIPATION FACTOR: (1 MHz)		≤ 0.5%
INSULATION RESISTANCE: (at 100 VDC)		≥ 10 ¹² Ω
THERMAL CONDUCTIVITY:		2.5-3.0 W/(m·K)
TCE: (25°C to 300°C)		7.0 ppm/°C
BREAKDOWN VOLTAGE:		> 1800 V/25 μm
PRESSURE COOKER: (Insulation resistance after 15 minutes at 2 atmospheres)		≥ 10 ¹² Ω
FIRED SHRINKAGE: (Using recommended processing parameters)	X and Y	13%±0.5%
	Z	17%±1%
FIRED DENSITY: (Theoretical)		3.16 g/cm ³
COMPATIBLE CONDUCTORS:		803, 902, 903-E, 903-A, 903-D, 963

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CAUTION: Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapors emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

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