

Micromax[™] GreenTape[™] 951PT

Microcircuit and Component Materials

Low Temperature Ceramic System

Micromax[™] GreenTape[™] 951 is a low-temperature cofired ceramic tape. GreenTape[™] 951 system comprises a complete cofireable family of gold and silver metallizations, buried passives, and encapsulants. GreenTape[™] 951 is available in multiple thicknesses and it designed for use as an insulating layer in:

- · Multichip modules
- · Single chip packages
- · Ceramic printed wiring boards
- RF modules

The GreenTape™ 951C2, GreenTape™ 951PT, GreenTape™ 951TT, GreenTape™ 951P2 and GreenTape™ 951PX products are provided on base film with improved punching characteristics.

Product benefits

When used with compatible metallizations, MicromaxTM GreenTapeTM 951 offer the following benefits:

- Component integration buried resistors, capacitors, and inductors
- · Hermetic packaging
- · Low temperature brazing
- Cavities
- · High density interconnections
- · Cofire processing and refire stability

Product information

Blend member or series GreenTape™ 951

Application technique

Recommended film thickness 106 - 122^[1] μm

[1]: unfired thickness

Thermal properties

Thermal conductivity ≥3.3 W/(m K)

Storage and stability

Shelf life 12^[2] months

[2]: in unopened containers, from date of shipment, at temperature <30° C

Additional information

How to use Design & compatibility

Design

∘ For detailed recommendations on the use of the Micromax™

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MicromaxTM GreenTapeTM 951PT

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GreenTape™ 951, see the GreenTape™ Design and Layout Guidelines (Micromax™ GreenTape™ 951 section). For compatible metallizations and their recommended use see the GreenTape™ 951 Product Selector Guide.

System capability

 The MicromaxTM GreenTapeTM 951 system is designed to deliver line and space resolution of 100μm, via diameters of 100μm, and maximum layer counts in excess of 100.

Processing

Printing

Following blanking and preconditioning of MicromaxTM
 GreenTapeTM 951 green sheets, print compatible compositions
 directly onto unfired GreenTapeTM 951 using thick film printing
 methods and a vacuum stone or other support structure that
 uniformly distributes vacuum. Follow specific printing and drying
 recommendations described on individual composition product
 data sheets.

Inspection

 Inspect via, conductor and other prints prior to collation and lamination.

Lamination and firing

Laminate multiple sheets of Micromax[™] GreenTape[™] 951 low-temperature cofired ceramic tape according to processing parameters detailed in the GreenTape[™] Design and Layout Guidelines (Micromax[™] GreenTape[™] 951 section).
Recommended parameters for lamination are 3000 psi and 70°C for 10 minutes. Cofire laminates of GreenTape[™] 951 using the recommended firing profile and a belt or box furnace.

Post-fire processing

 Print compatible compositions onto cofired substrate surface and refire.

Singulation

 Singulate multi-up substrates either in the green state using a hotknife or after cofire using either a diamond saw (preferred) or laser scribe.

Properties

Typical Tape Properties (Physical & Electrical)

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X, Y Shrinkage_951PT,P2,PX, TT (%)	12.7 ± 0.3
Z Shrinkage (%)	15.0 ± 0.5
Camber (inch/inch)	Conforms to setter
Surface Roughness (µm)	< 0.34
Flexural Strength*1 (MPa)	250 - 280
Young's Modulus (Gpa)	120

*1 Four point bend

Information in this datasheet shows anticipatied typical physical properties for MicromaxTM GreenTapeTM 951 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Storage and shelf life

Tape rolls, or boxes of sheeted tape, should be stored tightly sealed in a clean, stable environment at room temperature (<30 °C). Shelf life of material in unopened boxes is twelve months.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).

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