

L8 LTCC System for Components and Modules

APPLICATION

L8 is a glass-ceramic composite, Low Temperature Co-Fire Ceramic (LTCC) for components and modules with applications up to 31 GHz.

L8 features a stable Dielectric constant up to 31 GHz and exhibits one of the lowest dissipation factors in a glass-ceramic formulation.

L8 is available in 2, 5, and 10 mil tape as well as powder for internal tape manufacture. The polymer binder formula used in L8 tape can be easily laminated and cut in the green state. L8 can be fired in both batch and belt furnace processes.

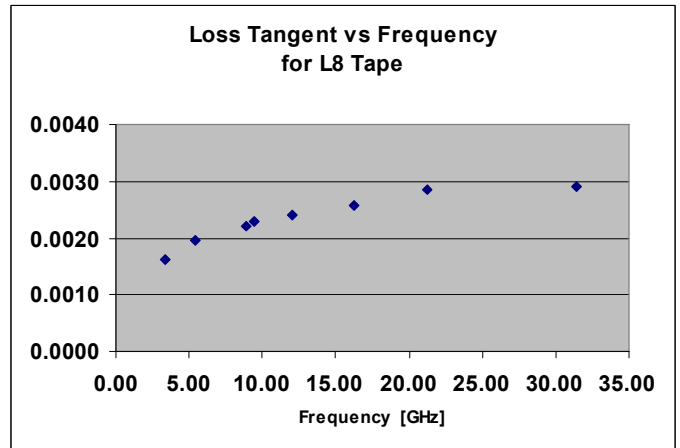
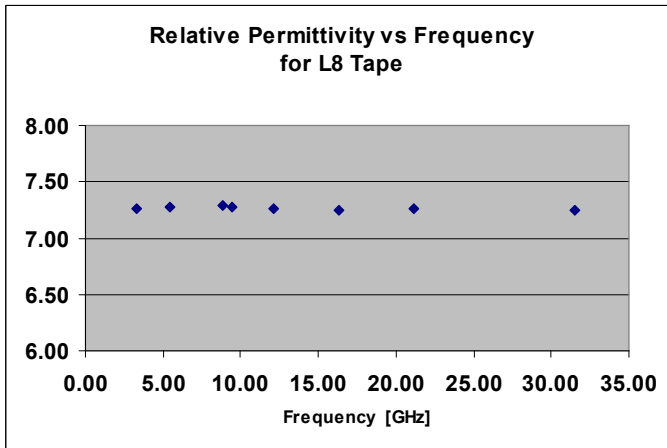
L8s matched Ag and mixed-metal paste systems provides excellent performance for cost sensitive designs and is also compatible with the A6M Au metallization system for high reliability requirements.

L8 is compatible with Ni/Au Electroless Plating processes.

TYPICAL FIRED PROPERTIES*

Thermal Coefficient of Expansion (25-300°C):	6 ppm/°C
Typical Tape Shrinkage:	
X,Y	13 %
Z (laminate to fired)	17 %
Fired Density:	3.1 g/cm ³
Flexural Strength (3 pt bend):	>275 MPa
Thermal Conductivity:	>3 W/mK
Dielectric Constant @ 3 GHz:	7.3 ± 0.2
Dissipation Factor @ 3 GHz*:	< 0.18 %
Breakdown Voltage:	>1250V/mil
Insulation Resistance:	>10 ¹² Ω/cm

*Typical properties are based on Ferro tape using specified processes and equipment in our laboratories.



Split Post resonator ≤ 10 GHz
Split Cylinder > 10 GHz

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TYPICAL PROCESSING GUIDELINES

Lamination: 3000psi (21MPa) @70°C, 10 minutes

Burnout: 450°C for 2hrs ≤ 2°C/min, ramp to 450°C

Firing: 850°C peak for 30 mins, Ramp to peak temperature 6-8°C/min

Setters: Fused quartz

GOLD MATERIALS SYSTEM

Inner Conductor: CN30-025JH

Via Fill: CN30-078

Surface Conductor: CN30-025JH

Wire Bondable: CN30-080

MIXED METAL MATERIALS SYSTEM

Inner Conductor: CN33-498

Via Fill: CN33-493

Transition Via Fill: CN39-005

Surface Conductor: CN30-025JH

Wire Bondable: CN30-080M

SILVER BASED SYSTEM

Inner Conductor: CN33-498

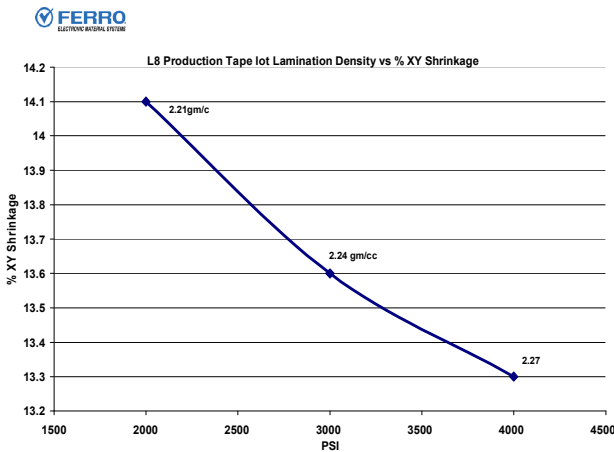
Via Fill: CN33-493

Surface Conductors:

Co-Fire Plate-able: CN33-495 Ag

Co-Fire Solderable: CN34-491 AgPd

Post-Fire Solderable: C3309 Ag



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