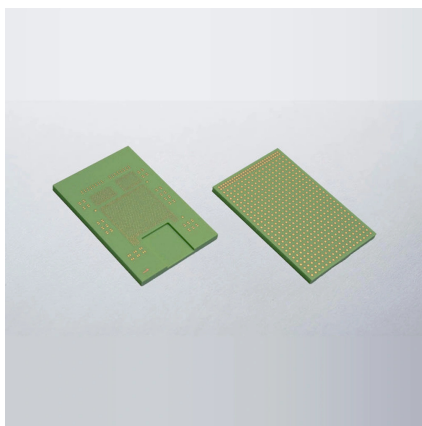




LTCC glass-ceramic multilayer substrates with metallized pads

# LTCC Glass-Ceramic Multilayer Substrates

Product ID / SKU: FWM/CS-ALU-014

Material: LTCC Glass-Ceramic

Product type: Ceramic Substrate

Low-temperature co-fired glass-ceramic multilayer substrates for high-frequency and compact electronic packaging; this route is related to, but not classified as, 96% or 99.6% dense alumina.

## LTCC Glass-Ceramic (GL570) Properties

| Material property                | GL570 - LTCC glass-ceramic | Test condition / basis      |
|----------------------------------|----------------------------|-----------------------------|
| Relative permittivity            | 5.6 / 5.7                  | 1 MHz / 2 GHz, respectively |
| Dielectric loss tangent          | 0.0003 / 0.0007            | 1 MHz / 2 GHz, respectively |
| Thermal conductivity             | 2.8 W/(m·K)                | -                           |
| Coefficient of thermal expansion | $3.4 \times 10^{-6}/K$     | Room temperature-400°C      |
| Bending strength                 | 200 MPa                    | Three-point bending         |
| Co-fire-compatible conductor     | Copper                     | Co-fired material system    |