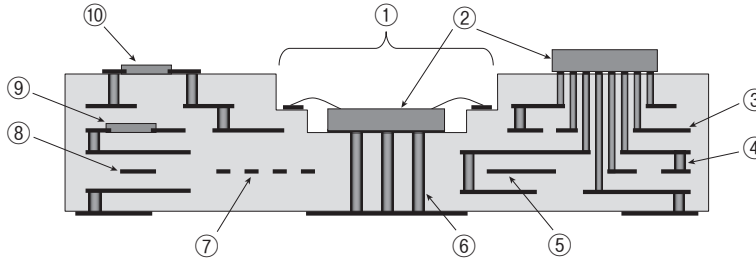
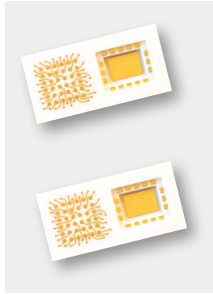


LTCC
LTCC MULTILAYER SUBSTRATES
KLC



STRUCTURE

- 1 Cavity
- 2 IC-chip
- 3 Conductor pattern
- 4 Via
- 5 Capacitor
- 6 Thermal via
- 7 Inductor
- 8 Transmission line
- 9 Buried resistor
- 10 Surface resistor

All these products meet EU-RoHS requirements

TYPE DESIGNATION (HOW TO ORDER)

Example: **KLC** **AB1**
PRODUCT CODE KOA REF. NO.

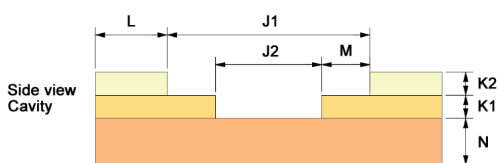
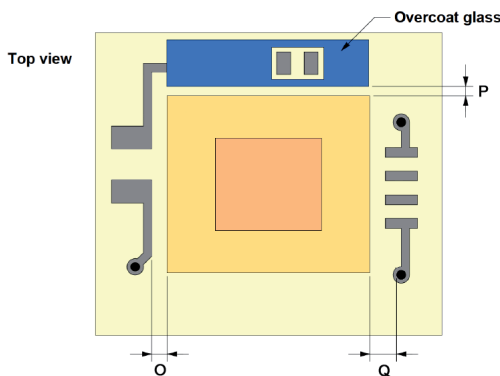
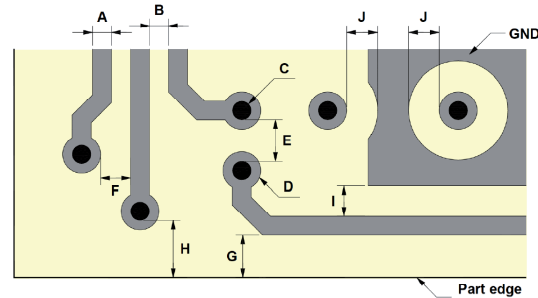
Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS

FEATURES

- Excellent dimensional accuracy by KOA's original shrinkage control technology
- Multi layer technology up to 20 layers (more than 20 layers available on request)
- Surface Flatness down to $\pm 5 \mu\text{m}$ on request
- High-density wiring by fine line patterning
- Miniaturization by buried R, L, C and strip-lines
- Back volumes and channels
- Excellent high frequency performance up to 60 GHz by the use of low loss ceramics and conductors
- Thermal expansion coefficient similar to Si and GaAs
- Precision cavities enable bare chip mounting with short bond wires
- Thermal vias under bare chips enhance heat transport
- Superior heat and humidity resistance

DESIGN RULES

Surface Layer • Inner Layer



SYMBOL	PARAMETER	DESIGN VALUE
A	Line width	0.06 mm Min.
B	Line to line spacing	0.06 mm Min.
C	Via diameter	0.1 mm, 0.15 mm, 0.2 mm
D	Via pad diameter	Via diameter + 0.05 mm Min.
E	Via to Via spacing	0.2 mm Min.
F	Via pad to line spacing	0.125 mm Min.
G	Part edge to conductor spacing	0.2 mm Min.
H	Part edge to Via spacing	0.3 mm Min.
J, J1, J2	Cavity width	0.6 mm Min.
K1, K2	Cavity depth	0.1 mm Min.
L	Wall thickness of cavity	0.5 mm Min.
M	Shelf width in the cavity	0.5 mm Min.
N	Bottom thickness of cavity	0.30 mm Min.
O	Cavity edge to conductor spacing	0.20 mm Min.
P	Cavity edge to overcoat glass spacing	0.10 mm Min.
Q	Cavity edge to via spacing	0.30 mm Min.

Complete set of design rules available on request from <lttcc@koeurope.de>.

Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment. Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order/use.