

Low-loss FPC (GHz band)

Yamashita Materials designs and manufactures FPC in pursuit of loss reduction in high-speed transmission in GHz band.

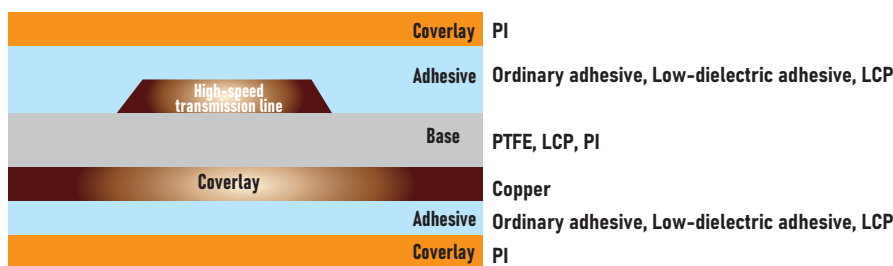
Features for each type

PTFE + Low dielectric coverlay : Fluorine resin base with excellent dielectric characteristics is used. Most excellent in transmission loss characteristics.

LCP + LCP coverlay : In addition to low-loss characteristics, the adhesive-free structure provides excellent long-term heat resistance and low outgassing characteristics.

LCP + Standard coverlay : Provides excellent cost performance and flexibility.

Layer structure example



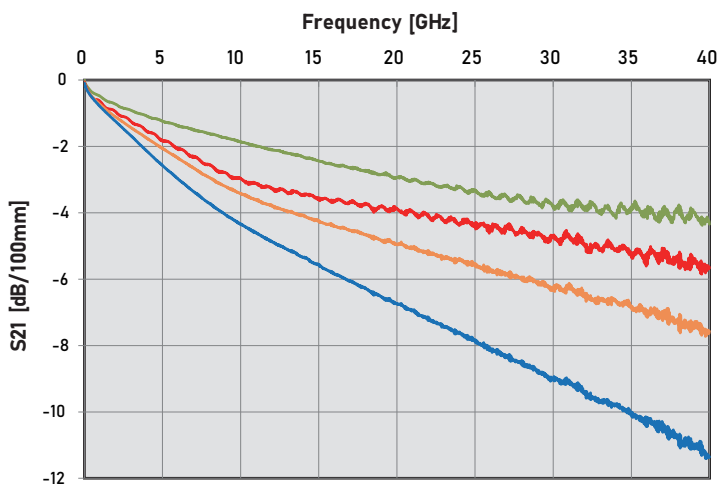
Total thickness: approx. 150~200 μ m

Main usage

- Optical communication module
- High-speed communication module

PTFE : Fluorine resin
LCP : Liquid crystal polymer
PI : Polyimide

S21 evaluation result



Measuring probe GSG250
Microstripline 50 Ω single

- PTFE + Low dielectric coverlay
- LCP + LCP coverlay
- LCP + Standard coverlay
- PI + Standard coverlay

Transmission loss per 1cm

dB/1cm	0.5GHz	1GHz	5GHz	10GHz	20GHz	30GHz	40GHz
PTFE + Low dielectric coverlay	-0.03	-0.04	-0.11	-0.17	-0.26	-0.33	-0.38
LCP + LCP coverlay	-0.05	-0.06	-0.18	-0.30	-0.39	-0.47	-0.56
LCP + Standard coverlay	-0.05	-0.07	-0.21	-0.34	-0.50	-0.63	-0.76
PI + Standard coverlay	-0.05	-0.08	-0.26	-0.44	-0.68	-0.90	-1.13

Note: The above data are measured values and not guaranteed values.