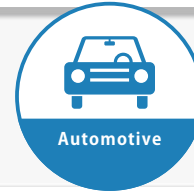


# Halogen-free Ultra-low transmission loss Circuit board materials

Laminate **R-5515**

Applications 用途

Antenna(Automotive millimeter-wave radar, Base station), Etc.



Achieve higher efficiency and lower loss of millimeter-wave antenna, and reduce processing cost of circuit board.

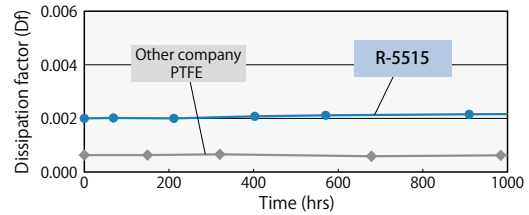
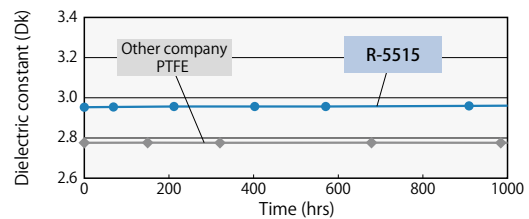
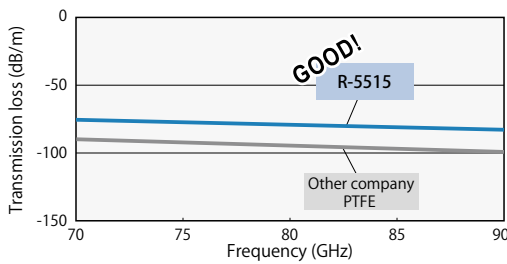
Dk 3.0 Df 0.002  
@10GHz

Tg (DMA)  
200°C

Reduce PCB process cost  
(vs. PTFE material)

Frequency dependence by Transmission loss (70-90GHz)

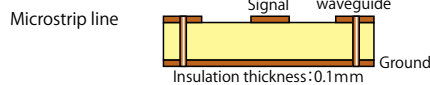
Long-term stability under High temperature (Dk, Df)



Transmission loss at 79GHz

Material	Transmission loss (dB/m)	Dk (Design)
R-5515	79	3.09
Other company PTFE	96	3.01

Construction



- Measurement method : Cavity resonance method
- Aging Temperature : 125°C (without humidity control)
- Measurement frequency : 10GHz

General properties 一般特性

Item	Test method	Condition	Unit	Halogen-free R-5515	
Glass transition temp.(Tg)	DMA	A	°C	200	
CTE z-axis	IPC-TM-650 2.4.24	A	ppm/°C	α1	50
				α2	300
T288(with copper)	IPC-TM-650 2.4.24.1	A	min	>120	
Thermal conductivity	Laser flash	A	W/m·K	0.4	
Dielectric constant(Dk)	Cavity resonance	C-24/23/50	-	10GHz	3.0
Dissipation factor(Df)				0.002	
Peel strength*	1/2oz(18μm)	IPC-TM-650 2.4.8	A	kN/m	0.6

The sample thickness is 0.5mm.  
\* H-VLP2 Copper