

Circuit Board Materials  
電子回路基板材料

## For automotive components, etc. (many applications) multi-layer circuit board materials

Laminate **R-1766** Prepreg **R-1661**

Excellent multilayer lamination

Excellent workability

Dimensional stability

### Proposals 提案

1. Good secondary lamination processability, and excellent adhesion between the layers Compatible with high-speed drilling processability
2. Excellent dimensional stability
3. Flammability UL94V-0
4. Line-up of clearpregs with reduced occurrence of resin powder

### Applications 用途

Automotive components, Amusement, Digital appliance,  
Mobile product, Measuring instruments, Small and medium-sized computer,  
Semiconductor test equipment, etc.

### Specifications 定格

Nominal thickness 公称厚さ		Thickness tolerance 厚さ許容差	Copper foil thickness 銅箔厚さ
0.1mm	Excluding copper foil thickness for less than 0.8 mm.	±0.03mm	0.012mm (12 μm) 0.018mm (18 μm) 0.035mm (35 μm) 0.070mm (70 μm)
0.2mm		±0.04mm	
0.3mm		±0.05mm	
0.4mm		±0.06mm	
0.5mm		±0.07mm	
0.6mm		±0.08mm	
0.8mm	Including copper foil thickness for 0.8 mm or more.	±0.09mm	
1.0mm		±0.11mm	
1.2mm		±0.11mm	

Note: For thickness tolerance of the thickness located midway in the thicknesses in the table, whichever is thicker shall be applied. (注) 公称厚さの中間に位置する厚さ許容差は、より厚い方の厚さ許容差とします。  
Note: For detail dimensions, please contact us separately. (注) 詳細寸法につきましては、別途ご相談ください。

### General Properties 一般特性

Item 項目	Test method 試験方法	Condition 条件	Unit 単位	R-1766
Glass transition temp (Tg)	DSC	A	°C	140
Thermal decomposition temp (Td)	TG/DTA	A	°C	315
CTE x-axis 熱膨張係数	α1 IPC TM-650 2.4.41	A	ppm/°C	11-13
CTE y-axis 熱膨張係数				13-15
CTE z-axis 熱膨張係数	α1 IPC TM-650 2.4.24	A		65
				α2
T288 (with copper 銅付)	IPC TM-650 2.4.24.1	A	min	1
Dielectric constant (Dk) 比誘電率	1GHz IPC TM-650 2.5.5.9	C-24/23/50	-	4.3
Dissipation factor (Df) 誘電正接				0.016
Water absorption 吸水率	IPC TM-650 2.6.2.1	D-24/23	%	0.14
Flexural modulus 曲げ弾性率	Fill ヨコ方向 JIS C6481	A	GPa	21
Peel strength 銅箔引き剥かし強さ	1oz IPC TM-650 2.4.8	A	kN/m	2.0

The sample thickness is 0.8mm 試験片の厚さは0.8mmです。

The above data is actual values and not guaranteed values.

### More Product line from Panasonic

Please see the page for "Notes before you use"

- For automotive components multi-layer materials HIPER Series
- For automotive components and mobile product halogen-free multi-layer materials
- For many applications mass laminations Pre-multi

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