Panasonic INDUSTRY

Applications

Appliance/Industry/Wireless

Home Appliance, Digital Appliance, LED Lighting, Meter Panel, Power Supply System Board, Amusement Machine, Antenna (5G Terminal/Equipment), etc.

Double-sided copper clad

R-1786

Single-sided copper clad

R-1781

Glass composite circuit board materials

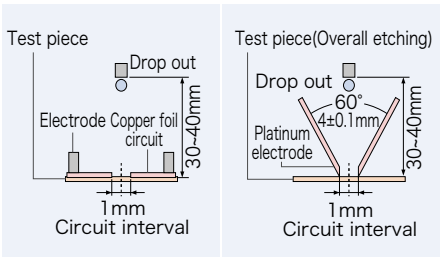
Excellent tracking resistance (CTI ≥600V), excellent CAF resistance and excellent thickness accuracy. Reduces CO_2 emission amount in our manufacturing process to one-quarter by our unique manufacturing process. (Compared with our conventional FR-4 (R-1705))

Tracking resistance

Pattern method (circuit method)	Product name / number	IEC method	Appearance of the test piece	
			Standard state	After test
	CEM-3 R-1786	175 – 600		
	Conventional FR-4 R-1705	- – 240		

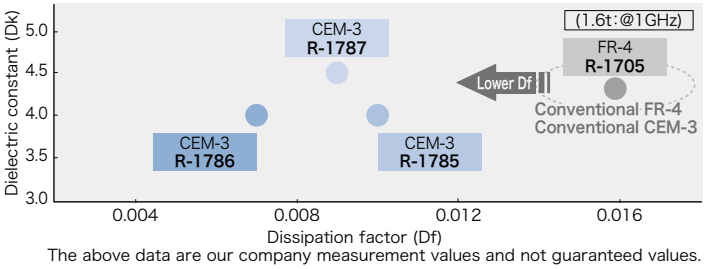
Test method

Drip 50 drops electrolyte (0.1% aqueous solution of ammonium chloride) towards the central circuit current of 1.0A flows in the voltage of 100V ~ 600V (25V interval). Measure the voltage current flows for more than 2 seconds.



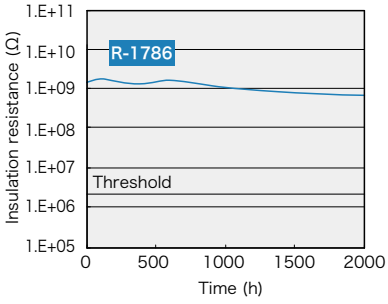
Low dielectric property

Measured by Panasonic with IPC-TM-650 2.5.5.9



The above data are our company measurement values and not guaranteed values.

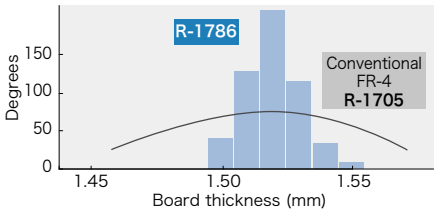
CAF resistance



Evaluation condition

Test condition	85℃, 85%, 100V applied voltage
Wall to wall distance	0.45mm
Drill diameter	Φ0.9~Φ0.35
Test method	Continuous measurement in a tank
Board	Our test pattern
Warp direction	60 hole
Fill direction	60 hole

Board thickness accuracy



Board thickness: 1.6mm
Copper foil thickness: 0.018mm

$\bar{x}$=1.52mm
R=0.053mm
$\sqrt{V}$ =0.014mm

General properties

Item		Condition		Unit	R-1786
Tg		Temp. rising rate:10℃/min		℃	140
Solder heat resistance		260℃ solder float for 2min		-	No abnormality
Heat resistance	1oz	A		-	240℃ 60min
Dk*	1GHz	C-24/23/50		-	4.0
Df*	1GHz	C-24/23/50		-	0.007
Volume resistivity		C-96/20/65		MΩ-m	1×10^{8}
		C-96/20/65+C-96/40/90		MΩ-m	5×10^{7}
Surface resistivity		C-96/20/65		MΩ	3×10^{8}
		C-96/20/65+C-96/40/90		MΩ	1×10^{8}
Insulation resistance		C-96/20/65		MΩ	5×10^{8}
		C-96/20/65+D-2/100		MΩ	1×10^{7}
Flexural strength	Fill	A		N/mm²	280
Peel strength		Copper foil: 0.018mm (18μm)	A	N/mm	1.37
			S_4	N/mm	1.37
		Copper foil: 0.035mm (35μm)	A	N/mm	1.76
			S_4	N/mm	1.76
Flammability		A+E-168/70		-	94V-0

The sample thickness is 1.6mm.
<Test method> JIS C 6481 * IPC-TM-650 2.5.5.9

Please see our website for Notes before you use.

The above data are typical values and not guaranteed values.

industrial.panasonic.com/ww/electronic-materials

Panasonic Industry R-1786 R-1781

Panasonic Industry Co., Ltd. Electronic Materials Business Division