Panasonic
ideas for life

高熱伝導性ガラスコンポジット基板材料
High Thermal Conductive Glass composite Circuit Board Materials
高热传导性玻璃复合基板材料

ecooL

より『使いやすく』
Easier to process
更“容易使用”

設計の自由度アップ
加工性は一般FR-4と同等
Enhancing the flexibility for circuit design, equivalent processability to conventional FR-4
提高设计自由度

樹脂基板ならではの加工・設計のしやすさと優れたコストパフォーマンスを実現
Inorganic resin circuit boards which realize an excellent processability and a design flexibility as well as an excellent cost performance
加工、設計的簡単化以及优异的成本效率

より『安全に』
Safer to use
更“安全”

業界最高水準の耐トラッキング性能（CTI600）
Industry’s highest level of tracking resistance(CTI600)
耐漏电痕性

耐CAF性に優れる
Excellent CAF resistance
耐CAF性优异

より『環境にやさしく』
Environmentally-friendly
更“有益于环境”

ハロゲンフリー
Halogen-free
无卤素

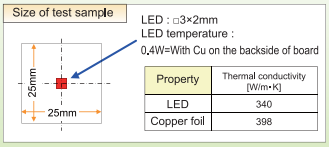
1.5 w/mk ecooL NEW Halogen Free R-1586(H)

LED Thermal simulation

●Analysis
To analyze the impact of material thermal conductivity to LEDs raising of temperature by using thermic fluid analysis soft “STAR-CD”
●Assumed heat generation : 0.4W
●Sample board thickness : 1.0mm

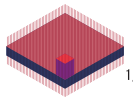
●Test Condition

Size of test sample

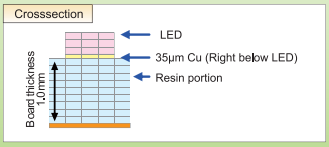


Property	Thermal conductivity [W/m･K]
LED	340
Copper foil	398

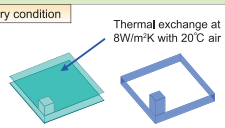
Analysis mesh



Crosssection

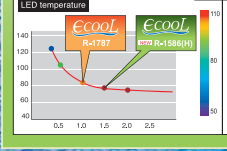


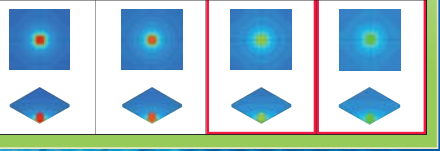
Boundary condition



	Standard FR-4/ CEM-3Level	HF FR-4/ HFCEM-3Level	ecooL R-1787	ecooL NEW R-1586(H)
Thermal conductivity of circuit board materials(W/m･K)	0.4	0.6	1.0	1.5
LED 0.4W (With 3.5Cu on the backside of board) Temp	123.6	104.4	88.6	80.4

LED temperature





Characteristics

Item	unit	1.5w ecooL NEW Reference Product	1w ecooL R-1787	R-1786 Conventional CEM-3
Thermal conductivity	W/m･K	**1.50**	1.10	0.50
Tracking resistance IEC method	-	**600≦**	600≦	600≦
Dielectric breakdown perpendicutar to Lamination	KV/mm	**41**	43	49
Insulation resistance	MΩ	**5x10⁸**	1x10⁸	5x10⁸
Dielectric constance (1MHz)	-	**5.2**	5.1	4.5
Dielectric Dissipation (1MHz)	-	**0.020**	0.016	0.015
Heat resistance (35μm)	℃	**220↑**	220↑	220↑
Solder heat resistance (260℃)	sec	**60↑**	60↑	60↑
Tg (TMA)	℃	**145**	140	140

* The above data are our actual values and not assured values.

http://industrial.panasonic.com/em