

For LED lightings high thermal conductive flexible circuit board materials

LED照明向け 高熱伝導性フレキシブル基板材料

ECOOL-F

Double-sided copper clad R-F775

High heat dissipation
高放熱性

High dielectric strength
高耐電圧

Thinner・Lighter
薄型・軽量化

Proposals 提案

1. Contributing electronic equipment to thinner and lighter by very thin circuit board materials which has an excellent heat emission performance equivalent to metal substrate
2. Contributing to improvement of surface mounting connective reliability by low CTE performance
3. Halogen-free

1. 金属基板並みの放熱性を実現
機器の薄型化と軽量化を実現
両面板設計が可能のため、高密度実装化にも対応
2. 低CTE基板により、実装接続信頼性の向上に貢献
3. ハロゲンフリー

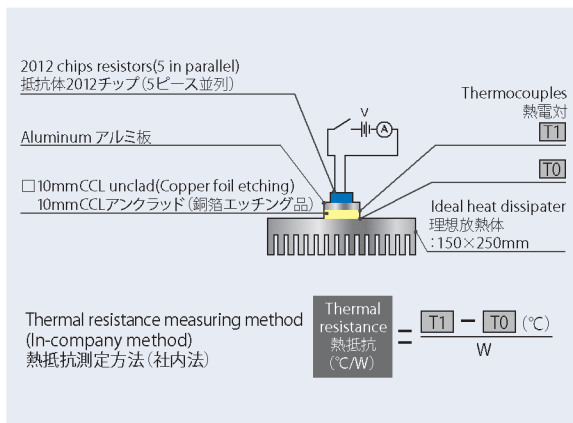
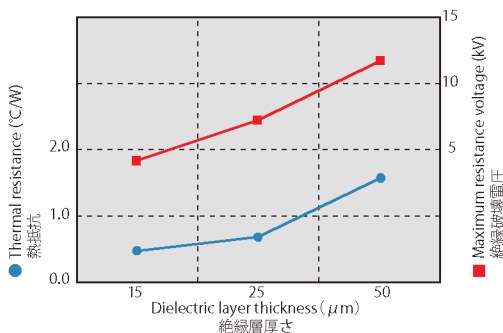
Applications 用途

LED back lights, Automotive lightings, LED lightings, Smartphones(NFC,Wireless charger), etc.

LEDバックライト、車載照明、LED照明、スマートフォン(NFC、ワイヤレスチャージャー)など

Heat resistance and dielectric strength performance 熱抵抗と耐電圧性能

- Heat resistance and dielectric breakdown voltage of polyimide film insulating layer
ポリイミドフィルム絶縁層の熱抵抗と絶縁破壊電圧



General properties 一般特性

Item 項目	Test method 試験方法	Unit 単位	ECOOL-F Flexible type	Conventional FR-4 R-1705	Aluminum plate アルミ金属基板
Construction 構成	-	-	Single/Double 片面/両面	Single 片面	Single 片面
Thermal conductivity 熱伝導率	Laser flash	W/m·K	0.3	0.4	1.2
CTE y-axis 熱膨張係数(ヨコ方向)	α1 IPC TM-650 2.4.41	ppm/°C	18	15	33
Solder heat resistance*1 はんだ耐熱性	JIS C6481	-	No abnormality 異常なし	No abnormality 異常なし	No abnormality 異常なし
Moisture absorption solder heat resistance*1 吸湿はんだ耐熱性	Internal method 社内法	-	No abnormality 異常なし	No abnormality 異常なし	No abnormality 異常なし
Thermal resistance 熱抵抗	Internal method 社内法	°C/W	0.6	17.5	0.6
Dielectric constant (Dk) 比誘電率	1GHz IPC TM-650 2.5.5.9	-	3.2	4.8	4.2
Dissipation factor (Df) 誘電正接	-	-	0.002	0.016	0.028
Surface resistivity*2 表面抵抗	JIS C6481	Ω	1 × 10 ¹⁵	1 × 10 ¹⁴	1 × 10 ⁸
Peel strength 銅箔引き剥がし強さ	1oz JIS C6481	N/mm	1.50	1.96	1.50
Maximum resistance voltage 絶縁破壊電圧	ASTM D149	kV	6.9/0.025mm	49/1.0mm	4.0/0.080mm
Dielectric layer thickness 絶縁層厚さ	-	mm	0.025	1.000	0.080
Comparison board composition 比較基板構成	Cross section 断面構成		0.035mm 0.025mm 0.07mm	0.035mm 1mm	0.035mm 0.080mm 1mm
Thickness (mm) 板厚			0.130	1.035	1.115
Weight (g/m ²) [*] 重量			970	2200	3100

※(g/cm²) Copper 銅箔:8.92, Aluminum アルミ:2.68, FR-4(R-1705):1.9, Filler epoxy フィラーエポキシ:2.0, Polyimide ポリイミド:1.3

<Condition 条件> As received
※1: 288°C solder float for 1min はんだフロート 288°C 1分
※2: C-90/20/65

The above data is actual values and not guaranteed values. 上記データは実際の実測値であり、保証値ではありません。

More Product line from Panasonic 関連商品

- Light reflection/luminous flux thermosetting molding compounds
- Epoxy resin insulation sheet material ECOM Fine Sheet
- For LED lightings high thermal conductive circuit board materials ECOOL
- For power module high thermal conductive circuit board materials ECOOL-M

Please see the page for "Notes before you use" 商品のご採用に当たっての注意事項はこちら

- High reflection/high light curing thermosetting resin material FULL BRIGHT
- Epoxy resin insulation sheet material ECOM Fine Sheet
- LED lighting high thermal conductive glass core printed circuit board material
- Power module/vehicle equipment high thermal conductive circuit board material

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