



Panasonic Electronic Materials Division launches a new product brand for the Semiconductor Device Materials business. The IC substrate materials' brand is transitioning from MEGTRON GX to LEXCM GX. パナソニック 電子材料事業部は、新たに半導体デバイス材料の製品ブランドを LEXCM (レクシム) としてスタートします。それに伴い、半導体パッケージ基板材料は MEGTRON GX から LEXCM GX へ変更いたします。

Low CTE IC substrate materials Designed to Improve Reliability

低熱膨張・高実装信頼性半導体パッケージ基板材料

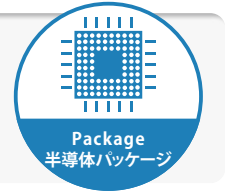
LEXCMGX

Laminate R-1515V (Low CTE glass cloth)

Laminate R-1515K (Normal glass cloth)

Applications 用途

IC substrate
FC-BGA (CPU, GPU, FPGA, ASIC, etc.)
半導体パッケージ基板 (CPU、GPU、FPGA、ASICなどのFC-BGAパッケージ)



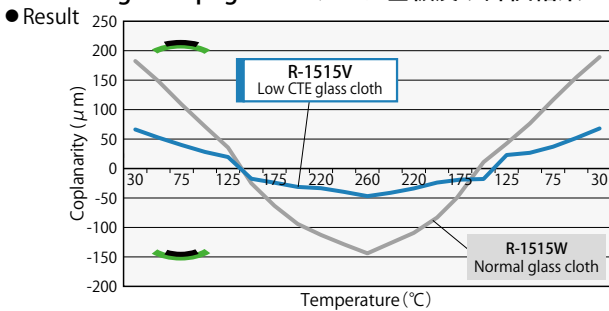
Low CTE reduces warping and addresses a critical challenge with the IC packaging process. Flexibility and buffering features through a stress relaxation technology improves the reliability of the assembly process. Offering excellent thickness tolerances. 低熱膨張性で反りを抑制し、IC チップの一次実装の不具合を低減、さらに樹脂の伸縮性と緩衝性を合わせ持つ応力緩和技術により二次実装の信頼性を向上させます。板厚精度に優れ、サブストレートとIC チップとの接合を安定化。

CTE x,y-axis 3-5ppm/°C
(Low CTE glass cloth)

Stress Relaxation

Good Thickness Variation

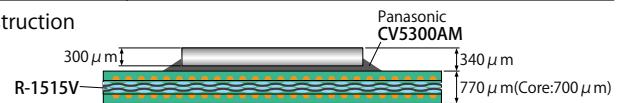
IC Package Warpage パッケージ基板反り評価結果



● Sample

Core Thickness	700 μm (12-12 μm)
Package size	35 x 35mm (Die size 15 x 15mm)

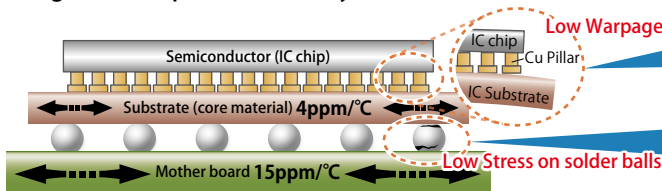
● PKG Construction



A wide range of Thickness Line-up 豊富な板厚をラインアップ

R-1515V (Low CTE glass cloth)	0.21~1.8mm
R-1515K (Normal glass cloth)	

Designed to Improve Reliability 高い実装信頼性



Low CTE

Low thermal expansion coefficient (CTE): close to that of silicon IC chips, which reduces warping and addresses a critical challenge with the IC chip packaging process.

Stress Relaxation

Combines flexibility and buffering features while retaining low thermal expansion properties through a stress relaxation technology, improving the reliability of the assembly process.

General properties 一般特性

Item	Test method	Condition	Unit	R-1515V Low CTE glass cloth	R-1515K Normal glass cloth	Conventional Normal glass cloth	
Glass transition temp.(Tg)	DMA*2	A	°C	260	260	260	
CTE x-axis	TMA*2	A	ppm/°C	3-5	7	8-10	
CTE y-axis				3-5	7	8-10	
Dielectric constant(Dk) ¹	1GHz	IPC-TM-650 2.5.5.9	C-24/23/50	4.4	4.6	4.8	
Dissipation factor(Df) ¹				0.016	0.015	0.015	
Elastic modulus ¹	IPC-TM-650 2.4.4 ³	25°C	GPa	30	27	33	
		250°C		14	12	21	
Peel strength	1/3oz(12μm)	IPC-TM-650 2.4.8	A	kN/m	0.6	0.6	0.9

The sample thickness is 100 μm. *1 700 μm *2 Measurement in tensile mode.

*3 The IPC standard determines the test sample size, methods and conditions, etc. but there is no formula for calculating the elastic modulus. Therefore, we quantified it according to JIS C 6481.

Our Halogen-free materials are based on JPCA-ES-01-2003 standard and others. 当社ハロゲンフリー材料は、JPCA-ES-01-2003などの定義によるものです。The above data are typical values and not guaranteed values. 上記データは当社測定による代表値であり、保証値ではありません。

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