



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。

# High modulus Low CTE IC substrate materials

## 高弾性・低熱膨張半導体パッケージ基板材料

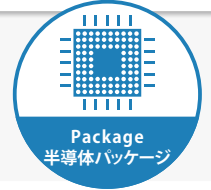
# LEXCMGX

Laminate R-G535S (Low CTE glass cloth)

Laminate R-G535E (Normal glass cloth)

### Applications 用途

IC substrate (FC-BGA)  
半導体パッケージ基板 (FC-BGA)



Excellent low warpage at large-sized package by low CTE property. Good for high performance computing application.  
低熱膨張により低反りを実現し、高性能コンピューティング向けなどの大型パッケージ基板に対応

CTE x, y-axis  
4-6ppm/°C

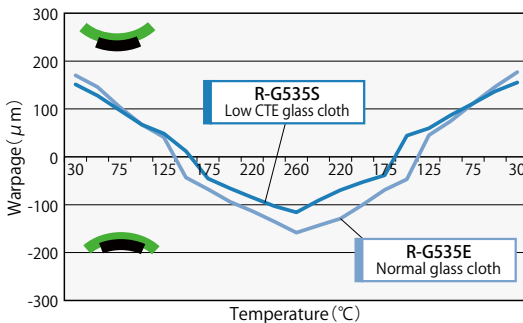
Low Package Warpage  
(FC-BGA)

Good MTH\* Processability

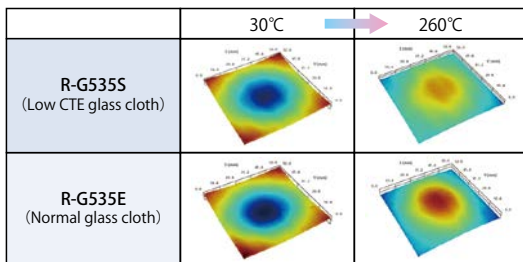
\*Mechanical Through Hole

### IC Package Warpage パッケージ基板反り評価結果

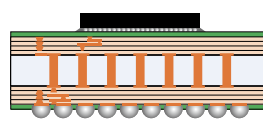
#### ● Result



#### ● Moire Picture

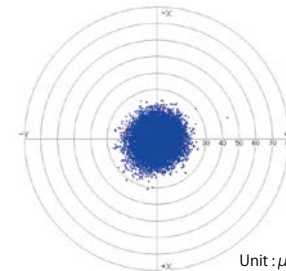


#### ● Construction



Package construction	4-2-4 (Build-up Film)
Package size	52×52mm
Chip size	20×20×0.5mm
Core	1200 μm
Bump	SnAgCu
Bump pitch	0.2mm
Bump size	85 μm
Design	Full-array
Bump count	8464
Underfill	Panasonic CV5300AM

### Mechanical drilling processability ドリル加工性



Unit: μm  
Ave+3σ = 22.0 μm



#### ● Through-hole wall condition @ 20khits



R-G535E	
Core material	800 μm / Copper foil 12 μm
Panel stack	2 panels
Drill bit diameter	150 μm
Drill hit number	20,000hits
Feeding speed	2.0m/min
Revolution	200krpm

### General properties 一般特性

Item	Test method	Condition	Unit	R-G535S Low CTE glass cloth	R-G535E Normal glass cloth
Glass transition temp.(Tg)	DMA*	A	°C	250-260	250-260
CTE x-axis	α 1 IPC-TM-650 2.4.41	A	ppm/°C	4-6	7-8
CTE y-axis				4-6	7-8
Dielectric constant(Dk)	1GHz IPC-TM-650 2.5.5.9	C-24/23/50	—	4.4	4.6
Dissipation factor(Df)				0.015	0.015
Flexural modulus	JIS C 6481	20°C	GPa	32-34	28-30

The sample thickness is 0.8 mm.  
\* 0.4mm Measurement in tensile mode

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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