

## Data Sheet

**Low CTE  
Ultra-thin IC substrate material**

**LEXCMGX**

**Laminate R-G515  
series**

Dec. 2021 No.211214-1

Partnering to go beyond.

**Electronic Materials**  
Panasonic Corporation

# Properties

Circuit Board Materials

## R-G515S / R-G515E LEXCM GX

Low CTE

Ultra-thin

IC Substrate Laminate

TECHNICAL INFORMATION

### ■ Laminate

R-G515S (Low CTE glass cloth)

R-G515E (Normal glass cloth)

### ■ Advantages

- Low CTE
- Low Warpage
- Ultra-thin

### ■ General properties

				R-G515S Low CTE glass cloth	R-G515E Normal glass cloth	
Item		Test method	Condition	Unit	Typical Value	
Glass transition temp.(Tg)		DMA*1	A	°C	220~240	220~240
CTE x, y-axis	α1	Internal method	A	ppm/°C	4~6	6~8
CTE z-axis*2		Internal method			30~40	30~40
Dielectric constant(Dk)*2	1GHz	IPC-TM-650 2.5.5.9	A	-	4.2	4.4
Dissipation factor(Df)*2					0.008	0.008
Young's modulus		ASTM-D3039	25°C	Gpa	23-28	22-27
Cu peel strength	1/3oz LP	IPC TM650 2.4.8	A	k N/m	0.7	0.7
Thickness				mm	0.03-0.1	0.03-0.1
Water absorption*2		IPC-TM-650 2.6.2.1	D-24/23	%	0.2	0.2

\*1 DMA: Measurement in tensile mode

The sample thickness is : 0.1mm, or \*2: 0.7mm

## ++ Before purchase ++

### 【Important Notices Before Use】

- The customer must verify the suitability and fitness of the product for use in their application.
- Customers communicating delivery specifications and usage forecasts in advance will be given higher priority in manufacturing and delivery from Panasonic.
- Product specifications are subject to change without notice
- For additional product information contact your distributor or local Panasonic location listed below.

### 【Safety Information】

- Please review the Safety Data Sheet (SDS) and use the product safely.
  - ▶ This product is intended only for use as an IC substrate laminate. Do not use this product for any other purpose.
  - ▶ For assistance in processing, contact your distributor or local Panasonic location listed below.

## Contact Information

### Technical Marketing

- Japan (Mie)  
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- USA (Mountain View)  
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- Austria (Enns)  
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- China (Shanghai)  
TEL: 86-21-3855-2332
- Thailand (Ayutthaya)  
TEL: 66-3533-0846

### Sales Offices

- China (Shanghai) TEL: 86-21-3855-2332
- Singapore TEL: 65-6241-6754
- Philippines (Makati) TEL: 63-632-886-6291 to 94
- Korea (Seoul) TEL: 82-2-361-7873
- Taiwan (Hsin Chu) TEL: 886-3-598-3201
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<https://na.industrial.panasonic.com/products/electronic-materials>