SHENGYI TECHNOLOGY

S7439G

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HALOGEN-FREE LOW LOSS LAMINATES AND PREPREGS

S7439G is a proprietary halogen-free high performance 180℃(DSC) glass transition temperature (Tg) FR-4 system for multilayer Printed Wiring Board (PWB) engineered for applications that require excellent electrical, thermal and reliability performance.

S7439G has a Dielectric Constant (Dk) and Dissipation Factor (Df) of 3.86 and 0.0070 at 10 GHz using the IPC 2.5.5.5 test method. The system also exhibits a stable Dk & Df over a wide range of frequencies (1 GHz to 20 GHz) and temperatures (-40 °C to +125 °C). It is also compatible with high layer count applications that require multiple 2 oz. copper layers and that have 0.8mm pitch. It also has demonstrated excellent CAF resistance down to 0.7mm pitch when tested using industry standard CAF TVs across multiple OEMs.

The S7439G system is available in spread and standard E-Glass. It is supplied with a 3um Rz roughness VLP copper as the default offering. A 2um VLP copper is also available if additional electrical bandwidth is needed.

APPLICATIONS

- High Speed Servers
- High Speed SANs
- Switches & Routers
- High Layer Count Backplanes
- High Layer Count Line Cards
- Multiple 2 oz. Copper Layers
- 0.8mm Pitch
- Burn-in Boards
- HDI Builds
- Hybrid Builds

FEATURES

- Excellent Thermal Performance
- High Tg: 180℃ (DSC)
- Low CTE @ 50/240 ppm/°C
- High Td: 404°C (TGA @ 5% wt loss)
- Excellent Electrical Performance
- 3.86 Dk & 0.0070 Df @ 10 GHz (IPC 2.5.5.5)
- Stable Dk/Df over Frequency and Temperature
- Superior CAF Performance
- UL 94 V-0 Flame Rating
- Standard FR-4 PCB processes

PRODUCT CONTACTS

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GENERAL PROPERTIES

PROPERTY	TYPICAL VALUE	UNITS	CONDITION	TEST METHOD
Glass Transition Temperature, Tg	190 180	°C	A	DMA IPC-TM-650 2.4.24.2 DSC IPC-TM-650 2.4.25
Thermal Expansion, Z-CTE	50 240	ppm/°C	A	Before Tg, IPC-TM-650 2.4.24 After Tg, IPC-TM-650 2.4.24
Decomposition Temperature, Td	404	°C	A	TMA IPC-TM650 2.4.24.6
Delamination Time, T288	60	minutes	A	TMA IPC-TM650 2.4.24
Delamination Time, T300	60	minutes	A	TMA IPC-TM650 2.4.24
Humidity Resistance	＞10	cycles	85°C/85%RH/168 Hours 288°C/10sec Dipping	-
Dielectric Constant (Dk)	3.93 3.86	-	1 GHz 10 GHz	IPC-TM-650 2.5.5.9 IPC-TM-650 2.5.5.5
Dissipation Factor (Df)	0.0043 0.0070	-	1 GHz 10 GHz	IPC-TM-650 2.5.5.9 IPC-TM-650 2.5.5.5
Volume Resistivity	1.15×10^{8}	MΩ•cm	A	IPC-TM-650 2.5.17.1
Surface Resistivity	8.50×10^{6}	MΩ	A	IPC-TM-650 2.5.17.1
Electrical Strength	34.5	kV/mm	0.51mm (0.020")	IPC-TM-650 2.5.6.2
Thermal Conductivity	0.57	W/m•K	100℃	ASTM D5470
Water Absorption	0.12	%	D-24/23	IPC-TM-650 2.6.2.1
Copper Peel Strength	1.3(7.4)	N/mm (lb/in.)	after solder float 1 oz. EDC Foil	IPC-TM-650 2.4.8
Flammability	94V-0	Rating	A	UL

PRODUCT SPECIFICATION

PRODUCT	STANDARD OFFERINGS	STANDARD PANEL SIZE
S7439G	Thickness - 0.002"(0.05mm) to 0.060" (1.5mm) Copper - VLP with 3um Rz E-Glass - Spread & Standard	18" x 24", 21"x24" & 27" x 24" Additional panel sizes may be available upon request. For most application the standard EDC foil should be used. When PIM and insertion loss is critic the RTF low profile copper foil should be considered.

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