Doosan Corporation
Electro-Materials

DS-7209A (G)

(ANSI : CEM-3) GREEN LAMINATE, HIGH C.T.I.

COPPER CLAD LAMINATES

Features

- Halogen-free, Antimony-free, no toxic evolution during waste burning
- High C.T.I value(above 600V)
- Process similar to FR-4 including PTH
- Punching process applicable

Applications

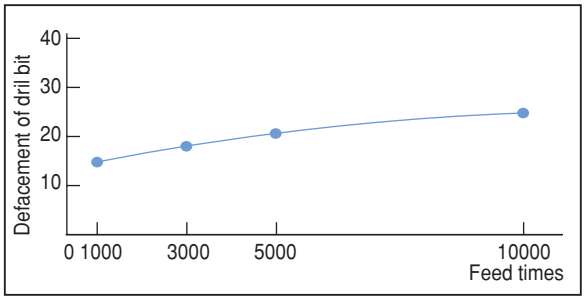
Test & Measurement equipment, Tuner,
Car electronics, Power supply, etc.

International Standard Recognition

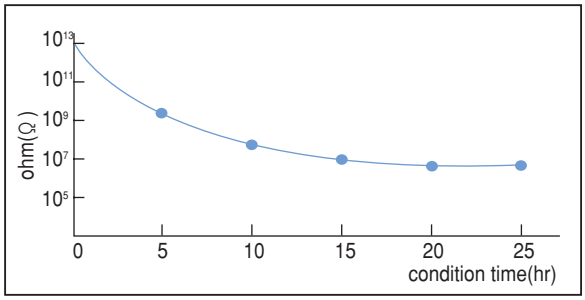
- UL : E103670
- BSI : 6741
- VDE : VDE-Reg-Nr. 4945

Drilling processability

Drill defacement (Round direction) (60,000rpm, 50 ㎛/ rev ,3 sheets)

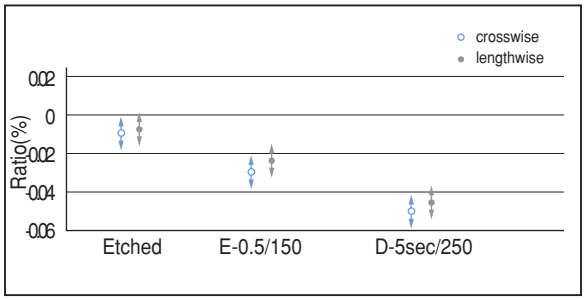


Insulation resistance at pressure cooker



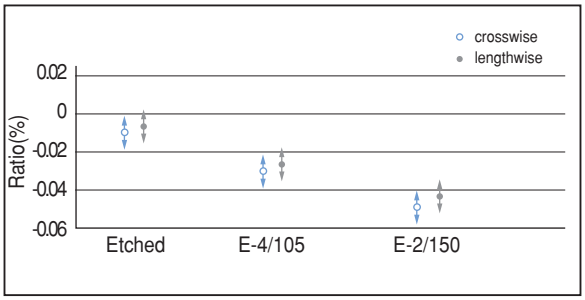
Dimensional stability

PCB process (size360X310mm span310X254mm)

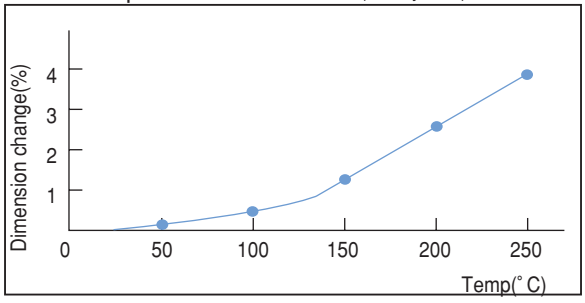


Dimensional stability

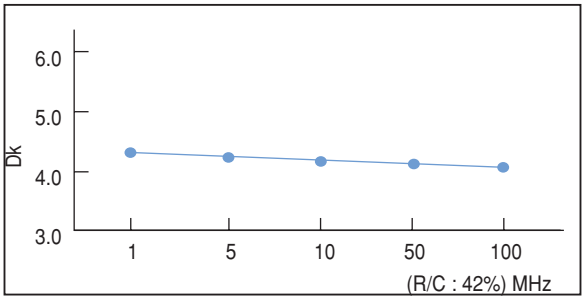
Test method (IPC-TM-650 2.4 39)



Thermal expansion of Z-direction (Test by TMA)



Dielectric constant



General Properties

Test Item	Unit	Treatment Condition	Designation	DS-7209A (G)
			ANSI Grade	CEM-3
			Property Data	
			Standard Value	Guaranteed Value
Tg	℃	DSC TMA	135 130	above 130 above 125
CTE x-axis y-axis z-axis	ppm/℃	Ambient to Tg	20 16 55	less than 30 less than 26 less than 60
Flammability	-	UL-94	V-0	V-0
Insulation Resistance	ohm	C-96/20/65 C-96/20/65+D-2/100	1×10^{12} - 1×10^{13} 1×10^{10} - 1×10^{11}	above 5×10^{11} above 1×10^{9}
Volume Resistivity	ohm-cm	C-96/20/65 C-96/20/65+C-96/40/90	1×10^{14} - 1×10^{15} 5×10^{13} - 5×10^{14}	above 1×10^{13} above 5×10^{12}
Surface Resistance	ohm	C-96/20/65 C-96/20/65+C-96/40/90	5×10^{13} - 5×10^{14} 1×10^{12} - 1×10^{13}	above 1×10^{12} above 1×10^{11}
Arc Resistance	min. sec		110	above 60
Dielectric Constant (1 MHz)	-	C-96/20/65 C-96/20/65+D-48/50	4.3 - 4.7 4.3 - 5.0	less than 5.5 less than 5.8
Dissipation Factor (1 MHz)	-	C-96/20/65 C-96/20/65+D-48/50	0.015 - 0.020 0.018 - 0.023	less than 0.035 less than 0.045
Comparative Tracking Index	volt	IEC Method	600	600
Solder Float (260℃)	sec	A	above 120	above 60
Peel Strength Cu.foil 1oz (0.035mm)	kgf/cm	A	1.5 - 1.8	above 1.43
Flexural Strength	kgf/mm^2	A	30 - 40	above 22.4
Water Absorption	%	E-24/50+D-24/23	0.10 - 0.15	less than 0.25

Specimen Thickness : 1.6mm

Purchasing Information

- Copper foil : 0.5 oz/ft^2(0.018 mm), 1 oz/ft^2(0.035 mm), 2 oz/ft^2(0.070 mm) available
- Thickness : 0.8mm to 1.6mm

Standard Size		Tolerance(mm)
1,020 X 1,220mm (40" X 48") 1,070 X 1,220mm (42" X 48") 1,020 X 1,020mm (40" X 40")	915 X 1,220mm (36" X 48") 970 X 1,220mm (38" X 48")	+3 -0

※Other sheet size and thickness could be available upon request.