

MICAM's FR-4 flame retardant epoxy-glass copper clad laminate offering excellent mechanical and electrical performance

Characteristics	Flame Retardant, Excellent electrical, mechanical properties
Colours	Translucent green and black.
Thickness	0.64 mm to 3.2mm
Copper	18 μm or 35 μm (other copper thickness available)
Sheet Size	1220mm x 1060mm (panel sizes cut on request)

		units	test method
GENERAL PROPERTIES			
Relative Density	1.9	g/cm^3	
Temperature Rating	130 (Class B)	$^{\circ}\text{C}$	
Flammability	V-0	-	UL-94
Water Absorption	0.2	% (1.6mm)	IPC-TM-650 2.6.2.1
Glass Transition Temperature	125	$^{\circ}\text{C}$	IPC-TM-650 2.4.25
MECHANICAL PROPERTIES			
Flexural Strength Lengthwise	470	MPa (1.6mm)	IPC-TM-650 2.4.4
Copper Peel Strength	1.8	N/mm (18 μm)	IPC-TM-650 2.4.8
Solder dip at 260 $^{\circ}\text{C}$	> 30	s	
ELECTRICAL PROPERTIES			
Volume Resistivity C-96/35/90	10^6	$\text{M}\Omega\text{cm}$ (0.5mm)	IPC-TM-650 2.5.17.1
Surface Resistivity C-96/35/90	2×10^6	$\text{M}\Omega$ (0.5mm)	IPC-TM-650 2.5.17.1
Dielectric Breakdown	> 50	kV (1.6mm)	IPC-TM-650 2.5.6
Dissipation Factor at 1 MHz	0.008	-	IPC-TM-650 2.5.5.3
Permittivity at 1 MHz	4.2	-	IPC-TM-650 2.5.5.3
Comparative Tracking Index	> 175	V	IEC 112/DIN 53480 Kc

CONDITIONING

C-96/35/90 – 90% Relative Humidity @ 35 $^{\circ}\text{C}$ for 90 hours

SPECIFICATION COMPLIANCE

IPC 4101/21; NEMAL1-1-1998FR-4; IEC 249-2-5; BSEN 60249-2-5; DIN 40802: EP-GC-02; DIN 7735 Hgw 2372.1 (base laminate)

ENVIRONMENTAL COMPLIANCE

RoHS compliant; REACH compliant

QUALITY SYSTEM APPROVAL

Certified by NSAI to I.S. EN ISO 9001:2008

PRODUCT APPROVAL

Recognised by Underwriters Laboratories file ref. E53727