

FJY-TC350A Microwave PCB laminate with Enhanced Thermal Conductivity

FJY-TC350A is a woven fiber glass reinforced, ceramic filled, PTFE based composite for use as a printed circuit board substrate. FJY-TC350A is designed to provide enhanced heat-transfer through “Best-In-Class” thermal conductivity, while reducing dielectric loss and insertion loss. Lower losses result in higher Amplifier and Antenna Gains/Efficiencies. FJY-TC350A aims to replace Arlon TC350 with competitive quality, price and lead time.

The increased thermal conductivity of FJY-TC350A provides higher power handling, reduces hot-spots and improves device reliability. This higher heat transfer within the substrate complements designs using coins, heat sinks or thermal vias to provide designers additional design margin in managing heat. In designs with limited thermal management options, FJY-TC350A significantly improves heat transfer where the primary thermal path is through the laminate.

Product Feature:

- “Best in Class” Thermal Conductivity (1.1 W/mK)
- Very Low Loss Tangent provides Higher Amplifier or Antenna Efficiency
- Price very competitive compared to Arlon TC350
- High Peel Strength for Reliable Copper Adhesion in thermally stressed circuit



Applications:

- Power Amplifiers, Filters and Couplers
- Tower Mounted Amplifiers and Boosters
- Thermally Cycled Antennas sensitive to dielectric drift
- Microwave Combiner and Power Dividers
- Radar and other military application



FJY-TC350A Test Data Information

Dielectric Constant(10 GHz)	IPC TM-650 2.5.5.5	C24/23/50	3.50
Dissipation Factor(10 GHz)	IPC TM-650 2.5.5.5	C24/23/50	0.002
Thermal Coefficient of Er (ppm/°C)	IPC TM-650 2.5.5.5 Adapted	-10°C to +140°C	-31
Peel Strength (lbs/per inch, copper 1OZ)	IPC TM-650 2.4.8	After Thermal Stress	≥8
Volume Resistivity (MΩ-cm)	IPC TM-650 2.5.17.1	C96/35/90	9.5x10 ⁸
Surface Resistivity (MΩ)	IPC TM-650 2.5.17.1	C96/35/90	4.8x10 ⁷
Arc Resistance (second)	IPC TM-650 2.5.1	D48/50	>180
Bending Strength(N/mm2) longitudinal/transverse	IPC-TM-650 2.4.4	A, 23°C	90/78
Breakdown Voltage (kV)	ASTM D-149	D48/50	>40
Size Stability (ppm)	IPC TM-650 2.4.39	Etching+E4/105	-400, +400
Density (g/cm ³)	ASTM D-792 Method A	A, 23°C	2.36
Water Absorption the highest (%)	IPC TM-650 2.6.2.1	E1/105 + D24/23	0.07
T288 (min)	IPC TM-650 2.4.24.1	E2/105	>60
CTE (ppm/°C) X Axis Y Axis Z Axis	IPC TM-650 2.4.41	0°C to 150°C	13
			12
			47
			1.1
Thermal Conductivity (W/mK)	ASTM E-1225	100°C	1.1
Flammability	UL 94	C48/23/50, E24/125	Meets requirements of UL94-V0

Standard Thickness of Laminate	Standard Size	Standard Copper Clad
0.020" (0.508 mm)	18"x12" (457x305mm)	Hoz(18um)
0.030" (0.762 mm)	18"x24" (457x612mm)	1oz(35um)
0.037" (0.940 mm)	18"x36" (457x915mm)	2oz(70um)
0.060" (1.524 mm)	18"x48" (457x1220mm)	With low profile electrolytic copper foil
0.120" (3.048 mm)	36"x48" (915x1220mm)	
	40"x48" (1016x1220mm)	
	42"x48" (1067x1220mm)	

*Thickness, Size, Copper can be customized.