



Superior Dk/Df, Lead-free & Halogen-free EM-370(D) / EM-37B(D)

- Standard FR-4 Dk and lower Df
- Tg 175°C, Td 385°C and T288 > 60 minutes (clad)
- Z-axis CTE 2.2%(50~260°C)
- Low moisture absorption and excellent CAF resistance
- Halogen, antimony and red phosphorus free
- For high performance server, network and telecom application

Basic Laminate Property

Item	IPC-TM-650	Test condition	Unit	Typical Value	
Glass transition temp.	2.4.25	DSC	°C	175	
	2.4.24.3	TMA	°C	170	
	2.4.24.2	DMA	°C	195	
CTE, X-, Y-axis	2.4.24	Pre-Tg, TMA	ppm/°C	12/15	
CTE, Z-axis	2.4.24	Alpha 1, TMA	ppm/°C	40	
		Alpha 2, TMA	ppm/°C	200	
Z-axis Expansion	2.4.24	50~260°C, TMA	%	2.2	
Decomposition temp.	2.4.24.6	TGA	°C	385	
Thermal stress 10sec 288°C	2.4.13.1	Clad	—	Pass Visual	
		Etched	—	Pass Visual	
Water absorption	2.6.2.1	E-1/105+D-24/23	%	0.10	
Peel strength (RTF)	0.5 oz	2.4.8	as received	lb/in	4
			after thermal stress	lb/in	4
	1.0 oz	2.4.8	as received	lb/in	4.5
			after thermal stress	lb/in	4.5
Permittivity (RC 50%)	1 GHz	2.5.5.9	C-24/23/50	—	4.1
	10GHz	Cavity Resonator		—	4.0
Loss tangent (RC 50%)	1 GHz	2.5.5.9	C-24/23/50	—	0.011
	10GHz	Cavity Resonator		—	0.015
Volume resistivity	2.5.17.1	C-96/35/90	MΩ-cm	>10 ¹⁰	
Surface resistivity	2.5.17.1	C-96/35/90	MΩ	>10 ⁹	
Flexural strength	Warp	2.4.4	as received	MPa	460~500
	Fill		as received	MPa	420~440
Flame resistance	UL-94	A&E-24/125	—	V-0	



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Basic Available Prepreg

Type	Resin Content (%)	Unclad Laminate Thickness (mil)	Remark
7629	44.0±3.0	7.9	
1501	48.0±3.0	6.7	
2116	52.0±3.0	4.9	
	56.0±3.0	5.4	
	58.0±3.0	5.7	
2113	55.0±3.0	4.0	
	59.0±3.0	4.4	
1080	63.0±3.0	3.0	
	66.0±3.0	3.4	
106	71.0±3.0	2.1	
	74.0±3.0	2.4	
3313	57.0±3.0	4.4	Customer assigned
	59.0±3.0	4.6	
1067	71.0±3.0	2.8	Customer assigned
	74.0±3.0	3.1	
1086	63.0±3.0	3.4	Customer assigned
	66.0±3.0	3.8	
1078	63.0±3.0	3.0	Customer assigned
	66.0±3.0	3.5	
1037	71.0±3.0	2.2	Customer assigned
	74.0±3.0	2.5	

Notice:

1. Lower resin content might be insufficient resin for lower copper residual or heavy copper of inner layer.
2. If you have any other requirement, please contact our sales or customer service representatives.



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Basic Available CCL

Nominal Thickness inch (mm)	Tolerance inch (mm)	Construction	Remark
0.002" (0.051)	± 0.0005" (0.013)	1037×1	Customer assigned
0.002" (0.051)	± 0.0005" (0.013)	106×1	
0.0025" (0.064)	± 0.0005" (0.013)	1067×1	Customer assigned
0.003" (0.076)	± 0.0005" (0.013)	1080×1	
0.003" (0.076)	± 0.0005" (0.013)	1086×1	Customer assigned
0.0035" (0.089)	± 0.0005" (0.013)	2113×1	
0.0035" (0.089)	± 0.0005" (0.013)	3313×1	Customer assigned
0.0035" (0.089)	± 0.0005" (0.013)	1037×2	Customer assigned
0.004" (0.102)	± 0.0005" (0.013)	2113×1	
0.004" (0.102)	± 0.0005" (0.013)	3313×1	Customer assigned
0.004" (0.102)	± 0.0005" (0.013)	106×2	
0.004" (0.102)	± 0.0005" (0.013)	1037×2	Customer assigned
0.0045" (0.114)	± 0.0005" (0.013)	2116×1	
0.0045" (0.114)	± 0.0005" (0.013)	3313×1	Customer assigned
0.0045" (0.114)	± 0.0005" (0.013)	1067×2	Customer assigned
0.005" (0.127)	± 0.0007" (0.018)	1067×2	Customer assigned
0.005" (0.127)	± 0.0007" (0.018)	1080×2	
0.005" (0.127)	± 0.0007" (0.018)	2116×1	
0.006" (0.152)	± 0.0007" (0.018)	1080×2	
0.006" (0.152)	± 0.0007" (0.018)	1086×2	Customer assigned
0.006" (0.157)	± 0.0007" (0.018)	1501×1	
0.007" (0.178)	± 0.0010" (0.025)	7628×1	
0.007" (0.178)	± 0.0010" (0.025)	2113×2	
0.007" (0.178)	± 0.0010" (0.025)	3313×2	Customer assigned
0.008" (0.203)	± 0.0010" (0.025)	7629×1	
0.008" (0.203)	± 0.0010" (0.025)	2116×2	
0.008" (0.203)	± 0.0010" (0.025)	3313×2	Customer assigned
0.010" (0.254)	± 0.0010" (0.025)	2116×2	
0.012" (0.305)	± 0.0015" (0.038)	1501×2	
0.014" (0.355)	± 0.0015" (0.038)	7628×2	
0.015" (0.355)	± 0.0015" (0.038)	7629×2	
0.021" (0.533)	± 0.0020" (0.051)	7628×3	
0.028" (0.711)	± 0.0020" (0.051)	7628×4	
0.031" (0.787)	± 0.0030" (0.076)	7629×4	

* Above thickness does not include copper



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Press Cycle

Basic press cycle for normal construction of multilayer PWB:

- ◆ Pre Vacuum of 30 minutes
- ◆ Kiss pressure : 5~7kgf/cm²(70~100psi)
- ◆ Heat rate(80~130°C): 2.0~2.5°C/min
- ◆ Full pressure : 27~29 kgf /cm²(380~400psi)
- ◆ Apply full pressure at : 80~100°C
- ◆ Reduce the full pressure to kiss when 50~60% of curing stage.
- ◆ Curing condition recommend: >190°C x90mins for board thickness <3.5mm; 190°C x110mins for board thickness ≥3.5mm. For board thickness ≥ 5mm, please contact local customer service for further assistance.
- ◆ Peak temperature of material should be preferable achieved at 200°C.
- ◆ Cooling condition: cooling rate in hot press < 2°C/min is preferred from end of curing time at 190°C.

The higher heating rate gives the better peel strength and inner layer pattern filling. The lower heating rate provides lower press flow for better thickness uniformity. Please contact our customer service for setting suitable press cycle if necessary.

Prepreg storage (Shelf life)

EM-37B(D) should be stored under 23°C , RH 55% for 3 month shelf life.