



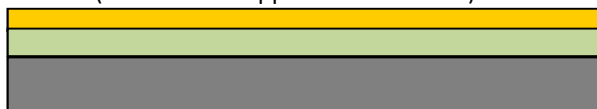
EM-M1 Series

Metal base material for Thermal Management

Thermal conductive, Halogen free and Reliable

EM-M series products are specially designed for Wide needed of Thermal management application. These products are developed by EMC, known as one of the best CCL maker. EM-M1 series products provide good thermal conductivity, excellent reliability and green environment conformity.

MCCCL (Metal Core Copper Clad Laminate)



ED Copper Thickness : EM-M1 (30) :H~3 oz
EM-M1 (20) 1 oz & 2 oz

Dielectric layer thickness : EM-M1 (30) 100um
EM-M1 (20) 75um / 100um

Metal type : AL 5052 H32 0.5mm~2.5mm
RA Copper C1100 0.5mm~1.5mm

EM-M series basic property

Item	Test method	unit	EM-M1 (20)	EM-M1 (30)	
Thickness	Micro-section	um	100	100	
Thermal conductivity	ASTM E 1461	W/m*k	2.8	3.0	
	ASTM D 5470		1.57	1.70	
Thermal resistance	ASTM D 5470	°C/W	0.110	0.105	
Hi-pot withstand	Ref. IPC-TM-650 2.5.7	KV (AC)	4	3	
Tg (Glass transition Temp.)	IPC-TM-650 2.4.25	°C	140 (DMA)	170 (DSC)	
Td (Decomposition Temp.)	IPC-TM-650 2.4.40	°C	400	370	
CTE, Z-axis	< Tg	IPC-TM-650 2.5.24	ppm/°C	25	20
	> Tg	IPC-TM-650 2.5.24	ppm/°C	90	60
Water absorption	IPC-TM-650 2.6.2.1	%	0.13	0.17	
Peel strength (1 oz)	IPC-TM-650 2.4.8	-	8.0	5.0	
Permittivity at 1 GHz	IPC-TM-650 2.5.5.3	-	5.9	5.0	
Loss tangent at 1 GHz	IPC-TM-650 2.5.5.3	-	0.011	0.017	
Volume resistance	IPC-TM-650 2.5.17.1	Ω-cm	10 ¹⁴	10 ¹⁵	
Surface resistance	IPC-TM-650 2.5.17.1	Ω	10 ¹²	10 ¹⁴	

NOTE :

- The data in this document is only reference data , and do not represent a guarantee of the values for each property.
- POCO(Graphite) standard sample of CP be used for ASTM E 1461.