

Summary Of Key Dielectric Characteristics

Performance Characteristics

SINGLE LAYER		THERMAL PERFORMANCE			DIELECTRIC PERFORMANCE		OTHER		
Part Number	Thickness ¹ [.000"/μm]	Impedance ² [°C/W]	Impedance ³ [°C in ² /W] / [°C cm ² /W]	Conductivity ⁴ [W/m-K]	Breakdown ⁵ [kVAC]	Permittivity ⁶ [Dielectric Constant]	Glass Transition ⁷ [°C]	U.L. Index ⁸ [°C]	Peel Strength ⁹ [lb/in] / [N/mm]
HT-04503	3/76	0.45	0.05 / 0.32	2.2	8.5	7	150	140/140	6 / 1.1
HT-07006	6/152	0.70	0.11 / 0.71	2.2	11.0	7	150	140/140	6 / 1.1
MP-06503	3/76	0.65	0.09 / 0.58	1.3	8.5	6	90	130/140	9 / 1.6
MULTI-LAYER									
HT-09009	9/229	0.90	0.16 / 1.03	2.2	20.0	7	150	140/140	6 / 1.1
HT-07006	6/152	0.70	0.11 / 0.71	2.2	11.0	7	150	140/140	6 / 1.1
CML-11006*	6/152	1.10	0.21 / 1.35	1.1	10.0	7	90	130/130	10 / 1.8
HIGH POWER LIGHTING									
HPL-03015	1.5/38	0.30	0.02 / 0.13	3.0	2.5	6	185	140/140	5 / 0.9

Method Description

- 1 - Optical
 - 2 - MET-5.4-01-40000-Test Thermal Performance of Insulated Metal Substrates (IMS)
 - 3 - Calculation from ASTM 5470
 - 4 - Extended ASTM 5470
 - 5 - ASTM D149
 - 6 - ASTM D150
 - 7 - Internal MDSC test RD2014
 - 8 - U.L. 746 E
 - 9 - ASTM D2861
- *CML is available in prepreg form

Note: For applications with an expected voltage over 480 Volts AC, Bergquist recommends a dielectric thickness greater than 0.003" (76μm).

Note: Circuit design is the most important consideration for determining safety agency compliance.

Note: Breakdown Voltage does not represent max operating or proof test voltage. For additional information reference page 16.

Operating Temperatures

Choose the dielectric that best suits your operating temperature environment. For high temperature applications, such as automotive, HT offers the right solution. All of our dielectrics are U.L. recognized.

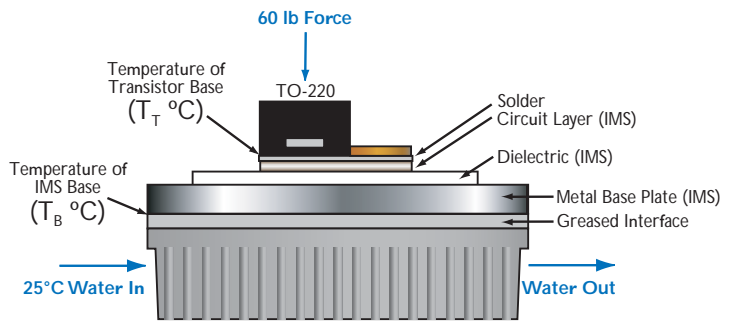
MATERIAL	U.L. RTI - ELECTRO / MECHANICAL
HT	140°C / 140°C
MP	130°C / 140°C
CML	130°C / 130°C
HPL	140°C / 140°C

MATERIAL	U.L. SOLDER LIMIT RATING
HT*	325°C / 60 seconds
MP	300°C / 60 seconds
CML	260°C / 60 seconds
HPL	325°C / 60 seconds

*Covers all soldering options including Eutectic Gold / Tin.

Thermal Impedance

This drawing represents the MET-5.4-01-40000-Test Thermal Performance of Insulated Metal Substrates (IMS) (at 40W) TO-220 thermal performance (25°C Cold Plate Testing).



Water-cooled Heatsink

$$\theta \left(\frac{^{\circ}\text{C}}{\text{W}} \right) = \frac{(T_T - T_B)}{40\text{W}}$$

