Bergquist Thermal Clad®

Technical Data

HR T30.20

Benefits

- Thermal conductivity 1.5 W/m-K, 4x FR4
- Thermal impedance 0.15° C-in²/W (0.97° C-cm²/W)
- Available as laminate only
- Economical
- High dielectric strength
- High reliability
- Available worldwide

Thermal Clad Metal Core PCB's (MCPCB's) minimize thermal impedance and conduct heat more effectively than standard printed wiring boards (PWB's). These substrates are more mechanically robust than thick-film ceramic and direct bond copper construction.

Thermal Clad is a cost-effective solution which can eliminate components, allow for simplified designs, smaller devices and an overall less complicated production process. Additional benefits of Thermal Clad include lower operating temperatures, resulting in longer component life and increased durability.

The technology of Thermal Clad resides in the dielectric. This datasheet highlights the performance characteristics of Thermal Clad HR T30.20, with twenty plus year's industry proven dielectric for a multitude of applications including LED, Power Conversion, Heat-Rails, Solid State Relays and Motor Drives.

For Additional Info (800) 347-4572
www.bergquistcompany.com

THE BERGQUIST COMPANY

Bergquist Thermal Clad®

Technical Data

HR T30.20

HR T30.20 Dielectric Typical Values		
HRT T30.20	VALUE	TEST METHOD
THERMAL PROPERTIES		
Laminate Thermal Conductivity	1.5 W/m-K	BQ MET-5.4-01-40000
Dielectric Thermal Conductivity	1.0 W/m-K	ASTM D5470
Thermal Resistance	0.15°C-in²/W (0.97°C-cm²/W)	ASTM D5470
Thermal Impedance	0.90°C/W	BG-RD2018
Glass Transition	90°C	ASTM E1356
ELECTRICAL PROPERTIES		
Dielectric Constant	7	ASTM D150
Dissipation Factor	0.005 (@1Hz)	ASTM D150
Capacitance	450 pF/in² (70pF/cm²)	ASTM D150
Volume Resistivity	10^{15} Ω-m	ASTM D5109
Surface Resistivity	10^{14} Ω/sq	ASTM D5109
Dielectric Strength	2200 V/mil (85 kV/mm)	ASTM D149
Breakdown Voltage	7.5 kVAC	ASTM D149
MECHANICAL PROPERTIES		
Color	Light Green	Visual
Dielectric Thickness	0.003" (76 µm)	Visual
Peel Strength@25C	9 lb/in (1.6 N/mm)	ASTM D2561
CTE in XY/Z Axis <Tg	25 µm/m°C	ASTM D1861
CTE in XY/Z Axis >Tg	95 µm/m°C	ASTM D1861
Storage Modulus	14/0.3 GPa (@25°C/150°C)	ASTM 4065
CHEMICAL PROPERTIES		
Water Vapor Retention	0.13% wt.	ASTM E595
Out-Gassing Total Mass Loss	0.31% wt.	ASTM E595
Collect Volatile Condensable Material	< 0.01% wt.	ASTM E595
AGENCY RATINGS & DURABILITY		
U.L. Maximum RTI	150°C	U.L. 746B
U.L. Flammability	V-O	U.L. 94
Comparative Tracking Index (CTI)	0/600	ASTM D3638/ IEC 60112
Solder Limit Rating	325°C/60 seconds	U.L. 796

Please test this material in your application. Bergquist provides this engineering data for design guidance only. Depending upon your application, the observed material performance may vary.

Applications

- High Power LED applications
- Power conversion
- Heat-rails
- Solid state relays
- Motor drives
- LED applications

Configurations Available†:

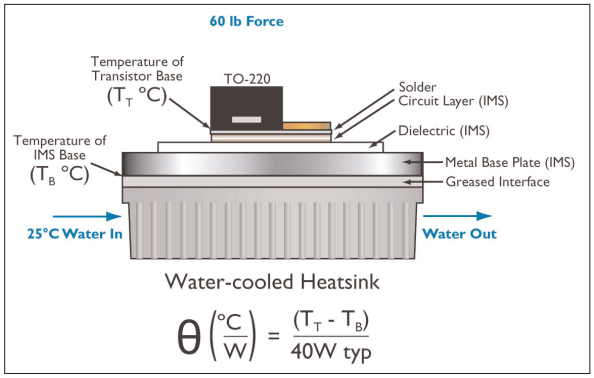
- Standard available panel sizes:
  - — 20" x 24" (508mm x 610mm) Usable area: 19" x 23" (483mm x 584mm)
  - — 18" x 24" (457mm x 610mm) Usable area: 17" x 23" (432mm x 584mm)
  - — 18" x 25" (457mm x 635mm) Usable area: 17" x 24" (432mm x 610mm)

Standard Panel Options†

- 040AL 5052 x HR T30.20 x 1 oz
- 040AL 5052 x HR T30.20 x 2 oz
- 062AL 5052 x HR T30.20 x 1 oz
- 062AL 5052 x HR T30.20 x 2 oz

†For any non-standard configuration or panel please contact the Thermal Clad Factory Sales Department at (800) 950-7956.

MET-4.5-01-40000 Test Thermal Performance of Insulated Metal Substrates (IMS) TO-220 Set-up



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