

Thermal Conductivity



Thermal Conductivity is the quantity of heat transmitted, due to unit temperature gradient, in unit time under steady conditions in a direction normal to a surface of unit area. The heat transfer is dependent only on the temperature gradient.

Thermal Conductivity = heat flow rate / (distance × temperature gradient)

Substance	Thermal Conductivity (W/cm °C)
Air (still)	0.0003
Alumina	0.276
Alumina (85%)	0.118
Aluminum	2.165
Beryllia (99.5%)	1.969
Beryllia (97%)	1.575
Beryllia (95%)	1.161
Beryllium	1.772
Beryllium-Copper	1.063
Boron Nitride	0.394
Brass (70/30)	1.220
Copper	3.937
Diamond	6.299
Epoxy	0.002
Epoxy (thermally conductive)	0.008
FR-4 (G-10) PCB Material	0.003
Gold	2.913
Heatsink Compound	0.004
Iron	0.669
Lead	0.343
Magnesium	1.575
Mica	0.007
Molybdenum	1.299
Monel	0.197
Mylar	0.002
Nickel	0.906
Silicon Carbide	0.90
Silver	4.173
Stainless Steel (321)	0.146
Stainless Steel (410)	0.240
Teflon	0.002
Tin	0.630
Titanium	0.157