Gap Pad™ VO Ultra Soft

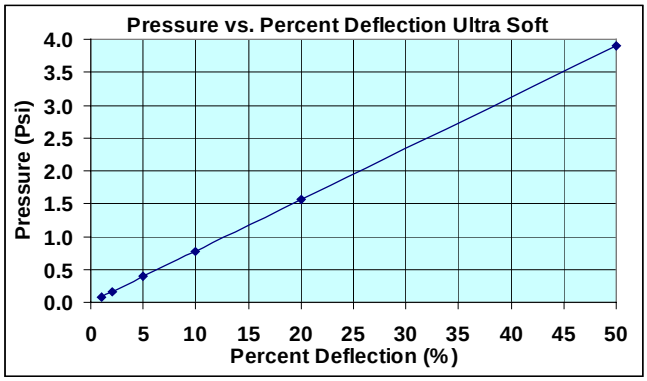
Additional Conformability & Thermal Conductivity for Filling Air Gaps

Gap Pad VO Ultra Soft is recommended for extremely low stress applications that require a thermally conductive interface material. The highly conformable nature of the material allows the pad to fill in air voids and air gaps between PC boards and heat sinks or metal chassis with steps, rough surfaces, and high stack up tolerances. The viscoelastic nature of the material also gives excellent low stress vibration dampening and shock absorbing characteristics.

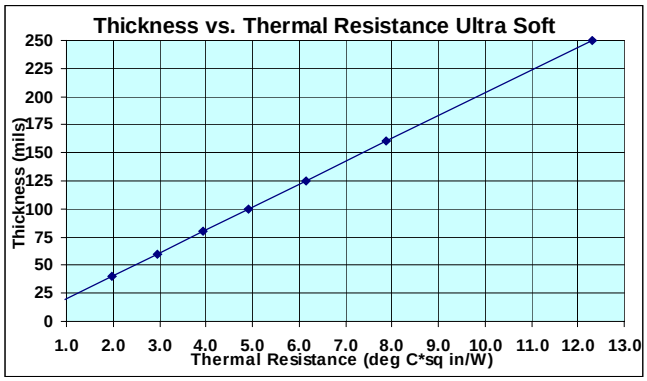
GP Ultra Soft is an electrically isolating material, which allows its use in applications requiring isolation between heat sinks and high voltage, bare leaded devices.

GP Ultra Soft is a filled thermally conductive polymer supplied on a rubber coated fiberglass carrier allowing for easy material handling and enhanced puncture, shear, and tear resistance.

To calculate the approximate amount of deflection for a specific material thickness, at a given pressure, refer to the graph below. Multiply the thickness of the material by the percentage at the given pressure.*



The resultant thickness of the Gap Pad will determine the thermal resistance. Subtracting the initial gap pad thickness by the deflection value, obtained above, will give the resultant thickness. Refer to the graph below to obtain the thermal resistance of the material.



Typical Properties of Gap Pad VO Ultra Soft

Property	Typical Value		Test Method
Color	Mauve / Pink		Visual
Thickness	0.020" to 0.250"		ASTM D374
Specific Gravity	1.6 g/cc		ASTM D792
Heat Capacity	1.0 J/g-K		ASTM C351
Hardness (Shore Type 00)	Thickness	Hardness	ASTM D2240
	.020" - .250"	55 - 15	
Young's Modulus psi (1)	Modulus	Rate	ASTMD575
	8	0.01"/min.	
Continuous Use Temp.	-60°C to 200°C		
Electrical			
Dielectric Breakdown Voltage	>6 kV		ASTM D149
Dielectric Constant	5.5		ASTM D150
Volume Resistivity	10^{11} Ohm-meter		ASTM D257
Flame Rating	94 V-O		U.L.
Thermal			
Thermal Conductivity	1 W/m-K		ASTM D5470

(1) Graphs and data generated from Young's Modulus, calculated using 0.01 inch/min. step rate of strain with a sample size of 0.79 $inch^2$. For more information on Gap Pad modulus refer to Bergquist Application Note #116.

GP Ultra Soft is offered in thicknesses from 0.020" to 0.250" with the rubber-coated carrier on one side and removable protective liner on the naturally tacky side of the material. Material is available in die-cut parts and sheets, 0.020" material is also offered in roll form. Standard sheet size is 8" X 16", with or without adhesive, thickness tolerance is ± 5% of material thickness.

Typical Applications

- Between chassis wall and other surface
- CDROM Cooling
- Area where heat needs to be transferred to a frame, chassis, or other type of heat spreader.
- Between CPU and Heat Spreader
- Between a semiconductor and heat sink

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