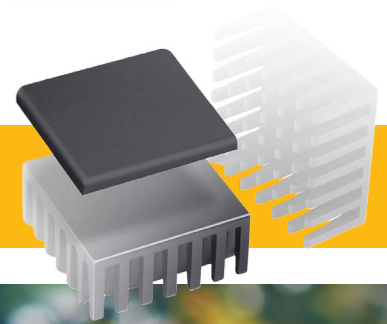


THERM-A-GAP™ PAD 70TP

7.0 W/m-K Thermally Conductive Very Low
Compression Force Thermal Putty Sheet Material



Parker Chomerics [THERM-A-GAP PAD 70TP](#) is a high performance, highly conformable thermally conductive gap filler pad with a typical thermal conductivity of 7.0 W/m-K. It provides superior thermal performance and long-term stability over conventional thermal pads with very low compression force.

THERM-A-GAP PAD 70TP is designed to provide effective heat transfer between electronic components and their associated cooling features such as heat sinks. The physical properties of this gap pad allow it to exhibit very high conformability and minimize the compressive load on underlying electronics. "TP" in the product name stands for "Thermal Putty" indicating that, unlike other gap pads, this material is meant for static, one-time assembly because it will permanently conform to displace air gaps caused by uneven surfaces or rough surface textures.

THERM-A-GAP PAD 70TP is offered as a standalone material, or with one of several carrier options; a woven glass carrier; either offset to one surface for a clean break feature (G carrier) or located approximately in the center of the part thickness (F carrier), both offering improved tear resistance and easier handling. There is also an aluminum foil carrier (A carrier) option with a pressure sensitive acrylic adhesive (PSA) on one side.

Contact Information

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Product Features

- 7.0 W/m-K thermal conductivity
- Highly conformable, soft
- Low deflection force
- Electrically isolating
- One-time assembly

Typical Applications

- Telecom Equipment
- PC board to chassis
- Thermally enhanced BGAs
- Memory packages & modules
- GPU & CPU
- Industrial Devices

THERM-A-GAP™ PAD 70TP Product Information

| | Typical Properties† | PAD 70TP | Test Method |
|------------|---|---|---|
| Physical | Color | Dark Grey | Visual |
| | Carrier Options: G = Woven glass carrier - offset to one side. No pressure sensitive adhesive (PSA) option A = Aluminum foil carrier with pressure sensitive adhesive (PSA) F = Woven glass carrier - centered on thickness. No pressure sensitive adhesive (PSA) option No letter suffix = None (unsupported), No pressure sensitive adhesive (PSA) | PAD70TPG PAD70TPA PAD70TPF PAD70TP | -- |
| | Standard Thicknesses*, in. (mm) (See part number table for thickness limits by type of carrier.) | 0.030 - 0.200 (0.76 - 5.08) | ASTM D374 |
| | Specific Gravity | 3.3 | ASTM D792 |
| | Hardness, Shore 00 | 15 | ASTM D2240 |
| Thermal | Percent Deflection @ Various Pressures** (0.120 in thick unsupported sample) @ 5 psi (34 kPa) @ 10 psi (69 kPa) @ 25 psi (172 kPa) @ 50 psi (345 kPa) | % Deflected 18% 42% 63% ** 73% ** | ASTM C165 MOD (0.120 in with no Carrier 0.50 in dia. sample 0.025 in/min rate) |
| | Operating Temperature Range, °F (°C) | -67 to 392 (-55 to 200) | Chomerics |
| | Thermal Conductivity, W/m-K | 7.0 | ASTM D5470 |
| | Thermal Impedance, °C-in ² / W (°C-cm ² /W) @ 10 psi, 0.04 in. (1mm) thick G carrier | 0.27 (1.7) | ASTM D5470 |
| | Heat Capacity, J/g-K | 0.72 | ASTM E1269 |
| Electrical | Coefficient of Thermal Expansion, ppm/K | 150 | ASTM E831 |
| | Dielectric Strength, V _{AC} /mil (kV _{AC} /mm) | 200 (7.9) | ASTM D149 |
| | Volume Resistivity, ohm-cm | 10 ¹³ | ASTM D257 |
| | Dielectric Constant @ 1,000 kHz and at 0.11" (2.8mm) thick | 5.6 | ASTM D150 |
| | Dissipation Factor @ 1,000 kHz and at 0.11" (2.8mm) thick | 0.001 | CHO-TM-TP13 |
| Regulatory | Flammability Rating (See UL File E482354 for Details) | V-0 | UL 94 |
| | RoHS Compliant | Yes | Chomerics Certification |
| | Outgassing, % TML (% CVCM) | 0.10 (0.03) | ASTM E595 |
| | Shelf Life, months from date of shipment (PAD70TPA) | 24 (18) | Chomerics |
| | Storage Conditions, °F (°C) @ 50% Relative Humidity | 50 to 90 (10 to 32) | Chomerics |

† Typical properties: these are not to be construed as specifications.

* Thickness tolerance, inches(mm) is ±10% of the nominal part thickness for parts 0.100" (2.5mm) thick or less; those parts greater than 0.100" (2.5mm) thick are held to ±0.010" (0.25mm).

** The typical deflection range of Therm-A-Gap 70TP is approximately 15% to 40% (or more depending on the carrier option and pad thickness. Evaluation of the part in your specific application is recommended.) Samples are available upon request.

THERM-A-GAP™ PAD 70TP Ordering Information

10" x 15" Sheets - THERM-A-GAP™ PAD 70TP
 "A", "G", or "F" carriers and unsupported

Part Number: **6W** — **XX** — **1015** — **ZZZZZZZZ**

| | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------|------------|---------------|------------|------------|------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|---|
| <p>1 = No Pressure Sensitive Adhesive 2 = Pressure Sensitive Adhesive (PSA), Available only with Aluminum Foil Carrier (A Letter Designation)</p> | <p>Thickness (in) Available in 0.010" increments</p> <table border="0"> <tr><td>* 0.030 = 03</td><td>0.120 = 12</td></tr> <tr><td>** 0.040 = 04</td><td>0.130 = 13</td></tr> <tr><td>0.050 = 05</td><td>0.140 = 14</td></tr> <tr><td>† 0.060 = 06</td><td>0.150 = 15</td></tr> <tr><td>0.070 = 07</td><td>0.160 = 16</td></tr> <tr><td>0.080 = 08</td><td>0.170 = 17</td></tr> <tr><td>0.090 = 09</td><td>0.180 = 18</td></tr> <tr><td>0.100 = 10</td><td>0.190 = 19</td></tr> <tr><td>0.110 = 11</td><td>0.200 = 20</td></tr> </table> | * 0.030 = 03 | 0.120 = 12 | ** 0.040 = 04 | 0.130 = 13 | 0.050 = 05 | 0.140 = 14 | † 0.060 = 06 | 0.150 = 15 | 0.070 = 07 | 0.160 = 16 | 0.080 = 08 | 0.170 = 17 | 0.090 = 09 | 0.180 = 18 | 0.100 = 10 | 0.190 = 19 | 0.110 = 11 | 0.200 = 20 | <p>Sheet Size 1015 = 10" x 15" sheet (254 mm x 381 mm)</p> <p>Maximum sheet size 10" x 15" (254 mm x 381 mm)</p> | <p>Material/Carrier</p> <p>No Carrier (Unsupported) PAD70TP</p> <p>Aluminum Foil w/ PSA (A) PAD70TPA</p> <p>Woven glass carrier (G) (offset to one side) No PSA PAD70TPG</p> | <p>Woven glass carrier (F) (centered on thickness) No PSA PAD70TPF</p> |
| * 0.030 = 03 | 0.120 = 12 | | | | | | | | | | | | | | | | | | | | | |
| ** 0.040 = 04 | 0.130 = 13 | | | | | | | | | | | | | | | | | | | | | |
| 0.050 = 05 | 0.140 = 14 | | | | | | | | | | | | | | | | | | | | | |
| † 0.060 = 06 | 0.150 = 15 | | | | | | | | | | | | | | | | | | | | | |
| 0.070 = 07 | 0.160 = 16 | | | | | | | | | | | | | | | | | | | | | |
| 0.080 = 08 | 0.170 = 17 | | | | | | | | | | | | | | | | | | | | | |
| 0.090 = 09 | 0.180 = 18 | | | | | | | | | | | | | | | | | | | | | |
| 0.100 = 10 | 0.190 = 19 | | | | | | | | | | | | | | | | | | | | | |
| 0.110 = 11 | 0.200 = 20 | | | | | | | | | | | | | | | | | | | | | |

* Minimum thickness for PAD70TPG and PAD70TPA
 ** Minimum thickness for PAD70TP
 † Minimum thickness for PAD70TPF

Ordering Information: Custom Configurations

Sheet thickness tolerance is ± 10% of the nominal thickness OR ±0.010", whichever is smaller

Please contact Parker Chomerics for a pre-assigned part number, for custom widths, lengths and part sizes; etc

Available options include:

* Custom die-cut parts on sheets, or as individual parts

Handling Information

These products are defined by Parker Chomerics as "articles" according to the following generally recognized regulatory definition for articles:

An article is a manufactured item "formed to a specific shape or design during manufacturing," which has "end use functions" dependent upon its size and shape during end use and which has generally "no change of chemical composition during its end use."

In addition:

- There is no known or anticipated exposure to hazardous materials/substances during routine and anticipated use of the product.
- The product's shape, surface and design is more relevant than its chemical composition.

These materials are not deemed by Parker Chomerics to require an MSDS. For further questions, please contact Parker Chomerics at 781-935-4850.

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