



global solutions :  
local support™

## T-putty™ 502 Series

**Creates compression of interface material**

T-putty™ 502 is the best material for applications where large tolerance differences create the need for compression of the interface material beyond 50% of its original thickness.

T-putty™ 502 will flow and ensure low pressures on the components being cooled. In conjunction with outstanding compression characteristics, T-putty™ 502 has a high thermal conductivity, resulting in very low thermal resistance.

T-putty™ 502 is naturally tacky and requires no additional adhesive coating that can inhibit thermal performance.

### Features and Benefits:

- Soft and ultra high compressibility for low stress applications
- 3 W/mK thermal conductivity
- Available in sheets 0.020" - 0.200" (0.5mm - (5.0mm) thick and in bulk
- Naturally tacky needing no further adhesive coating

### Applications:

- Cooling components to the chassis or frame
- Entire large panel PCB cooling
- Semiconductor automated test equipment (ATE)
- Any high compression low stress application

For sales information:

In Asia, please telephone +886-3-3129292

In Europe, please telephone +44-1342-315044

In the USA please telephone +1-1-800-246-9050

or visit: [www.lairdtech.com](http://www.lairdtech.com)



## T-putty™ 502 Series

	T-putty™ 0.020	T-putty™ 0.040	T-putty™ 0.060	T-putty™ 0.080	T-putty™ 0.100	Test Method
<b>Construction &amp; Composition</b>	Reinforced boron nitride filled silicone elastomer					
<b>Color</b>	White	White	White	White	White	Visual
<b>Thickness</b>	0.020" (0.51mm)	0.040" (1.02mm)	0.060" (1.52mm)	0.080" (2.03mm)	0.100" (2.54mm)	
<b>Thickness Tolerance</b>	± 0.002" (± 0.05mm)	± 0.003" (± 0.08mm)	± 0.004" (± 0.10mm)	± 0.004" (± 0.10mm)	± 0.005" (± 0.13mm)	
<b>Specific Gravity</b>	1.39 g/cc	1.38 g/cc	1.37 g/cc	1.37 g/cc	1.36 g/cc	Helium Pycnometer
<b>Hardness *without fiberglass</b>	05 Shore OO	ASTM D2240				
<b>Outgassing TML (Post Cured)</b>	0.11%	0.11%	0.11%	0.11%	0.11%	ASTM E595
<b>Outgassing CVCM (Post Cured)</b>	0.06%	0.06%	0.06%	0.06%	0.06%	ASTM E595
<b>Temperature Range</b>	-45°C to 200°C					
<b>Thermal Conductivity</b>	3 W/mK	ASTM D5470 (modified)				
<b>Thermal Impedance @ 10 psi @ 69KPa</b>	0.44 °C-in <sup>2</sup> /W 2.84 °C-cm <sup>2</sup> /W	0.49 °C-in <sup>2</sup> /W 3.16 °C-cm <sup>2</sup> /W	0.53 °C-in <sup>2</sup> /W 3.42 °C-cm <sup>2</sup> /W	0.58 °C-in <sup>2</sup> /W 3.74 °C-cm <sup>2</sup> /W	0.62 °C-in <sup>2</sup> /W 4.00 °C-cm <sup>2</sup> /W	ASTM D5470 (modified)
<b>Thermal Expansion</b>	92 ppm/C	IPC-TM-650 2.4.24				
<b>Breakdown Voltage</b>	2000 Volts AC	4000 Volts AC	>5000 Volts AC	>5000 Volts AC	>5000 Volts AC	ASTM D149
<b>Volume Resistivity</b>	5 x 10 <sup>13</sup> ohm-cm	ASTM D257				
<b>Dielectric Constant @ 1MHz</b>	3.20	3.20	3.20	3.20	3.20	ASTM D150

### Standard Thicknesses:

0.020" (0.51mm)   0.030" (0.76mm)   0.040" (1.02mm)   0.050" (1.27mm)   0.060" (1.52mm)   0.070" (1.78mm)  
 0.080" (2.03mm)   0.090" (2.29mm)   0.100" (2.54mm)   0.110" (2.79mm)   0.120" (3.05mm)   0.130" (3.30mm)  
 0.140" (3.56mm)   0.150" (3.81mm)   0.160" (4.06mm)   0.170" (4.32mm)   0.180" (4.57mm)   0.190" (4.83mm)  
 0.200" (5.08mm)

Consult the factory for alternate thicknesses

### Bulk:

T-putty™ 502 is available in bulk form in the following sizes: 100 cc Jar   500 cc Jar   1000 cc Jar

Consult the factory for alternate bulk sizes.

### Standard Sheet Sizes:

9" x 9" (229mm x 229mm) and 18" x 18" (457mm x 457mm). 9" x 9" only over 0.100" thickness

T-putty™ 502 is available in individual die cut shapes. Pressure sensitive adhesive is not applicable for T-putty™ products.

### Reinforcement:

T-putty™ 502 sheets are reinforced on both sides with fiberglass.

Our customers are reminded that they bear the responsibility for testing Laird Technologies' materials for their proposed use. Any information furnished by Laird Technologies and its agents is believed to be accurate and reliable, but our customers must bear all responsibility for the use and application of Laird Technologies' materials since Laird Technologies' and its agents cannot be aware of all potential use. Laird Technologies makes no warranties as to the fitness, merchantability, or suitability of any Laird Technologies' materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies' products are sold pursuant to the Laird Technologies' domestic terms and conditions of sale in effect from time to time, a copy of which will be furnished upon request.

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Property	T-putty 502 0.100	T-putty 502 0.110	T-putty 502 0.120	T-putty 502 0.130
Construction Composition	Boron nitride filled, silicone elastomer, fiberglass reinforced			
Color	White	White	White	White
Thickness	0.10"(2.54 mm)	0.11"(2.794 mm)	0.12"(3.048 mm)	0.13"(3.302 mm)
Thickness Tolerance	+/- 0.005"(0.13 mm)	+/- 0.005"(0.13 mm)	+/- 0.006"(0.15 mm)	+/- 0.006"(0.15 mm)
Density	1.36 g/cc	1.36 g/cc	1.36 g/cc	1.36 g/cc
Hardness (without fiberglass)	05 Shore OO	05 Shore OO	05 Shore OO	05 Shore OO
Deflection vs. Pressure Chart	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>
UL Flammability Rating	94 V0	94 V0	94 V0	94 V0
Shelf Life	Indefinite	Indefinite	Indefinite	Indefinite
MSDS	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>
Temperature Range	-45 to 200°C	-45 to 200°C	-45 to 200°C	-45 to 200°C
Thermal Conductivity	3.0 W/mK	3.0 W/mK	3.0 W/mK	3.0 W/mK
Thermal Impedance @ 10 psi	0.62°C-in <sup>2</sup> /W	NA	NA	NA
Thermal Impedance @ 69 KPa	4.00°C-cm <sup>2</sup> /W	NA	NA	NA
Thermal Impedance vs. Pressure	<a href="#">Click Here</a>	NA	NA	NA
Coefficient of Thermal Expansion	92 ppm/C	92 ppm/C	92 ppm/C	92 ppm/C
Breakdown Voltage	>5,000 volts AC	>5,000 volts AC	>5,000 volts AC	>5,000 volts AC
Volume Resistivity	5x10 <sup>13</sup> ohm-cm	5x10 <sup>13</sup> ohm-cm	5x10 <sup>13</sup> ohm-cm	5x10 <sup>13</sup> ohm-cm
Dielectric Constant	3.20	3.20	3.20	3.20
Dissipation Factor	<0.001	<0.001	<0.001	<0.001

Property	T-putty™ 502 0.180	T-putty™ 502 0.190	T-putty™ 502 0.200	Test Method
Construction Composition	Boron nitride filled, silicone elastomer, fiberglass reinforced	Boron nitride filled, silicone elastomer, fiberglass reinforced	Boron nitride filled, silicone elastomer, fiberglass reinforced	
Color	White	White	White	
Thickness	0.18" (4.572 mm)	0.19" (4.826 mm)	0.20" (5.08 mm)	
Thickness Tolerance	+/- 0.008" (0.20 mm)	+/- 0.008" (0.20 mm)	+/- 0.010" (0.25 mm)	
Density	1.36 g/cc	1.36 g/cc	1.36 g/cc	
Hardness (without fiberglass)	05 Shore OO	05 Shore OO	05 Shore OO	ASTM D2240
Deflection vs. Pressure Chart	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>	
UL Flammability Rating	94 V0	94 V0	94 V0	
Shelf Life	Indefinite	Indefinite	Indefinite	
MSDS	<a href="#">Click Here</a>	<a href="#">Click Here</a>	<a href="#">Click Here</a>	
Temperature Range	-45 to 200°C	-45 to 200°C	-45 to 200°C	
Thermal Conductivity	3.0 W/mK	3.0 W/mK	3.0 W/mK	ASTM D5470 (modified)
Thermal Impedance @ 10 psi	NA	NA	NA	ASTM D5470 (modified)
Thermal Impedance @ 69 KPa	NA	NA	NA	ASTM D5470 (modified)
Thermal Impedance vs. Pressure	NA	NA	NA	
Coefficient of Thermal Expansion	92 ppm/C	92 ppm/C	92 ppm/C	IPC-TM-650 2.4.24
Breakdown Voltage	>5,000 volts AC	>5,000 volts AC	>5,000 volts AC	ASTM D149
Volume Resistivity	5x10 <sup>13</sup> ohm-cm	5x10 <sup>13</sup> ohm-cm	5x10 <sup>13</sup> ohm-cm	ASTM D257
Dielectric Constant	3.20	3.20	3.20	ASTM D150
Dissipation Factor	<0.001	<0.001	<0.001	ASTM D150