

Transtherm™ Gap Fillers

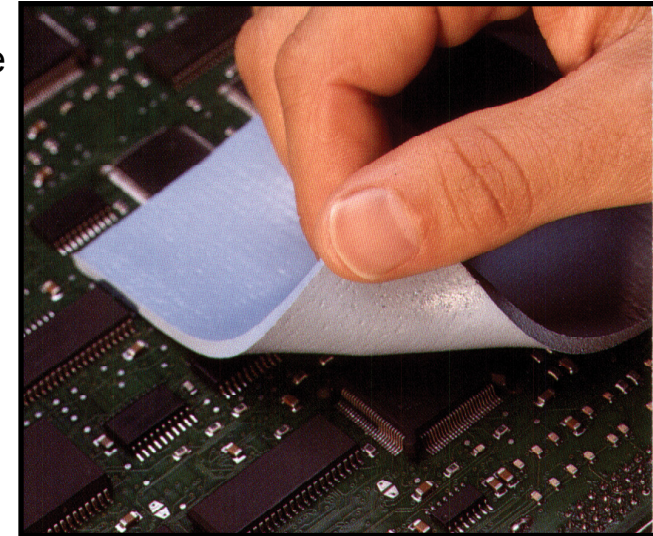
Transtherm™ Gap Fillers are soft materials designed to conduct heat away from uneven surfaces. Improved conformability allows for intimate contact over rough surfaces or multiple component heights.

Features

- **Tsoft VO:** High conformity to uneven or rough surfaces
 - **Tsoft 3S:** Enhanced performance thermal conductivity; supported with fiberglass
 - **Tsoft 3:** For enhanced thermal performance applications; tacky surface on both sides, no supported layer
 - **Tsoft3US:** For enhanced thermal performance and softer applications; tacky surface on both side, no support layer
 - **Tsoft3ST:** For enhanced thermal performance and proper softness applications; tacky surface on both side, no support
 - **Tsoft3STF:** Tsoft3ST product with supported fiberglass inside to improve handling, mainly for thin with wide format application
 - **Tsoft3STP:** thermally conductive material one side PET Film Silicone Tape
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- UL 94 V-O flammability rating (UL File E316839)

Applications

- Computer system and telecommunications peripherals Power conversion
- To transfer heat from ICs/PCBA/motor to heat sink, chassis or heat spreader
- Automotive electronics



Transtherm Gap Filler

Physical Properties	Gap Filler VO Soft (T soft 20)	Gap Filler VO Soft (T soft 30)	Gap Filler VO Soft (T soft 40)	Gap Filler Vo Soft (T soft 60)	Gap Filler Vo Soft (T soft 80)	Gap Filler VO Soft (T Soft 100)	Gap Filler Vo Soft (T soft 120)	Gap Filler Vo Soft (T Soft 160)	Test Method
Color	Ice Blue	Ice Blue	Ice Blue	Ice Blue	Ice Blue	Ice Blue	Ice Blue	Ice Blue	Visual
Thickness (mm)	0,5	0,75	1	1,5	2	2,5	3	4	ASTM D374
Thickness Tolerance (mm)	+/- 0,07	+/- 0,09	+/- 0,1	+/- 0,13	+/- 0,18	+/- 0,18	+/- 0,21	+/- 0,28	
Thickness (mil)	20	30	40	60	80	100	120	160	
Thermal Impedance (°C.In ² /Watt)	0,86@10psi	1,30@10psi	1,7 @10psi	2,48@10psi	3,23@10psi	3,9@10psi	5@10psi	6@10psi	ASTM D5470 modified
Dielectric Constant, 60 Hz	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	ASTM D150
Min. Continuous Use Temperature (°C)	-60	-60	-60	-60	-60	-60	-60	-60	MIL-I-49456A
Max. Continuous Use Temperature (°C)	200	200	200	200	200	200	200	200	
Thermal Conductivity (W/mK)	0,93@10psi	0,94@10psi	0,95@10psi	0,97@10psi	0,99@10psi	1@10psi	1@10psi	1@10psi	ASTM D5470 modified
Volume Resistivity (Ohm.cm)	2,5E+13	2,5E+13	2,5E+13	2,5E+13	2,5E+13	2,5E+13	2,5E+13	2,5E+13	ASTM D257
Dielectric Strength (Volts, minimum)	4000	5000	6000	8000	10000	10000	10000	12000	ASTM D149 Type1
Weight Loss (%) 24hrs. @200°C	<1	<1	<1	<1	<1	<1	<1	<1	IMTM 1567
Hardness (Shore A)	15	15	15	15	15	15	15	15	ASTM D2240
Specific Gravity (g/cm ³)	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	ASTM D792
Tensile Strength (KPa)	n/a	n/a	175	n/a	n/a	n/a	n/a	n/a	ASTM D 828
Elongation (%) minimum	3	3	3	3	3	3	3	3	ASTM D 828
Flame Resistance (UI File E 316839)		UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94
Dissipation Factor, 60 Hz	0,0039	0,0039	0,0039	0,0039	0,0039	0,0039	0,0039	0,0039	ASTM D 150
Construction /Material	Silicone/ Thermal Pad	Silicone/ Thermal pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone/ Thermal Pad	Silicone/ Thermal Pad	Silicone/ Thermal Pad	
Substrate /Reinforce layer	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	

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Transtherm Gap Filler (No reinforce Layer)

Physical Properties	TSoft3 20	TSoft3 40	TSoft3 60	TSoft3 80	TSoft3 100	TSoft3 160	TSoft3 200	TSoft3 240	Test Method
Color	Gray	Gray	Gray	Gray	Gray	Gray	Gray	Gray	Visual
Thickness (mm)	0,5	1	1,5	2	2,5	4	5	6	ASTM D374
Thickness Tolerance (mm)	+/- 0,07	+/- 0,1	+/- 0,13	+/- 0,18	+/- 0,18	+/- 0,28	+/- 0,40	+/- 0,4	
Thickness (mil)	20	40	60	80	100	160	200	240	
Thermal Impedance (°C.In ² /Watt)	0,5@10psi	1,05@10psi	1,65@10psi	2,35@10psi	3,15@10psi	5,0@10psi	5,4@10psi	5,9@10psi	ASTM D5470 (Modified)
Dielectric Constant, 60 Hz.	5,5	5,5	5,5	5,5	5,3	5,3	5,3	5,3	ASTM D 150
Min. Continuous Use Temperature (°C)	-60	-60	-60	-60	-60	-60	-60	-60	MIL-I-49456A
Max. Continuous Use Temperature (°C)	200	200	200	200	200	200	200	200	
Thermal Conductivity (W/mK)	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	ASTM D5470 (Modified)
Volume Resistivity (Ohm .cm)	1,0E+14	1,0E+14	1,0 E+14	1,0E+14	1,0E+13	1,0E+13	1,0E+13	1,0 E13	ASTM D 257
Dielectric Strength (Volts , minimum)	8000	16400	20000	22000	23000	25000	27000	30000	ASTM D149 Type1
Weight Loss (%) 24 hrs.@200°C	1	1	1	1	<1	<1	<1	<1	IMTM 1567
Hardness (Shore00)	55	55	55	55	50	50	50	50	ASTM D2240
Specific Gravity (g/cm3)	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	ASTM D792
Tensile Strength (KPa)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ASTM D828
Elongation (%) minimum	N/A	N/A	N/A	N/A	25	25	25	25	ASTM D 828
Flame Resisitance (UL File E316839)	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94
Disspation Factor , 60 Hz.	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	0,08 (100KHz)	ASTM D150
Construction /Material	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	
Substrate /Reinforce layer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

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Transtherm Gap Filler

Physical Properties	TSoft3S 20	TSoft3S 40	TSoft3S 60	TSoft3S 80	TSoft3S 120	TSoft3S 160	TSoft3S 200	TSoft3S 240	Test Method
Color	Pink/gray	Pink/gray	Pink/gray	Pink/gray	Pink/gray	Pink/gray	Pink/gray	Pink/gray	Visual
Thickness (mm)	0,5	1	1,5	2	3	4	5	6	ASTM D374
Thickness Tolerance (mm)	+/- 0,07	+/- 0,10	+/- 0,13	+/- 0,18	+/- 0,21	+/- 0,28	+/- 0,4	+/- 0,35	
Thickness (mil)	20	40	60	80	120	160	200	240	
Thermal Impedance (°C.In ² /Watt)	0,75 @10psi	1,5@10psi	2,3@10psi	3@10psi	4,5@10psi	5,2@10psi	6,0@10psi	6,7@10psi	ASTM D 5470 modified
Dielectric Constant, 60 Hz	5,1	5,1	5,1	5,1	5,1	5,1	5,1	5,1	ASTM D150
Min. Continuous Use Temperature (°C)	-60	-60	-60	-60	-60	-60	-60	-60	Mil-I-49456A
Max. Continuous Use Temperature (°C)	200	200	200	200	200	200	200	200	
Thermal Conductivity (W/mK)	2@10psi	2@10psi	2@10psi	2@10psi	2@10psi	2@10psi	2@10psi	2@10psi	ASTM D5470 modified
Volume Resistivity (Ohm.cm)	1,0 E+14	1,0E+14	1,0E+14	1,0E+14	5,0E+14	5,0E+14	5,0E+14	5,0E+14	ASTM D 257
Dielectric Strangth (Volts, minimum)	7000	14000	18000	20000	22000	25000	27000	30000	ASTM D 149 Type1
Weight Loss (%) 24 hrs@200 °C	<1	<1	<1	<1	<1	<1	<1	<1	IMTM 1567
Hardness (Shore 00)	60	60	60	60	60	60	60	60	ASTM D2240
Specific Gravity (g/cm ³)	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,2	ASTM D792
Tensile Strangth (KPa)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ASTM D 828
Elongation (%) minimum	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ASTM D 828
Flame Resistance (UL File E316839)	UL 94 VO	94 VO	94 VO	94 VO	94 VO	94 VO	94 VO	94 VO	UL 94
Disspation Factor, 60 Hz	0,08	0,08	0,08	0,08	0,08	0,08	0,08	0,08	ASTM D 150
Construction / Material	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	Silicone / Thermal Pad	
Substrate Reinforce Layer	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	Fiberglass	

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Transtherm Gap Filler (No reinforce layer)

Physical Properties	TSoft3ST 20	TSoft3ST 40	TSoft3ST 60	TSoft3ST 80	TSoft3ST 100	TSoft3ST 120	Test Method
Color	Green	Green	Green	Green	Green	Green	Visual
Thickness (mm)	0,5	1	1,5	2	2,5	3	ASTM D374
Thickness Tolerance (mm)	+/- 0,07	+/- 0,1	+/- 0,13	+/- 0,18	+/- 0,18	+/- 0,21	
Thickness (mil)	20	40	60	80	100	120	
Thermal Impedance (°C.In ² /Watt)	0,29@30psi	0,61@30psi	1,1@30psi	1,42@30psi	1,8@30psi	2,18@30psi	ASTM E1530 (modified ASTM D5470)
Dielectric Constant 1M Hz	4,72	4,72	4,72	4,72	4,72	4,72	ASTM D150
Min. Continuous Use Temperature (°C)	-40	-40	-40	-40	-40	-40	Modified UL 746B
Max. Continuous Use Temperature (°C)	150	150	150	150	150	150	
Thermal Conductivity (W/mK)	1,7@10psi	1,7@10psi	1,7@10psi	1,7@10psi	1,7@10psi	1,7@10psi	ASTM E1530 (modified ASTM D5470)
Volume Resistivity (Ohm .cm)	9,1E+11	9,1E+11	9,1E+11	9,1E+11	9,1E+11	9,1E+11	ASTM D257
Dielectric Strength (Volts, minimum)	6000	6000	6000	6000	6000	6000	ASTM D149 Type1
Weight Loss (%) 24hrs.@200°C	<1	<1	<1	<1	<1	<1	LAB STM-A8A
Hardness (Shore 00)	57	57	57	57	57	57	ASTM D2240
Specific Gravity (g/cm ³)	2,43	2,43	2,43	2,43	2,43	2,43	ASTM D792
Tensile Strength (KPa)	N/A	N/A	N/A	N/A	N/A	N/A	ASTM D 828
Percentage of Deflection (%) @10psi	20	20	20	20	20	20	LAB-STM-A4E
Flame Resistance (UL File E316839)	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94
Dissipation Factor 1M Hz	0,007	0,007	0,007	0,007	0,007	0,007	ASTM D 150
Construction / Material	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	
Substrate / Reinforce layer	N/A	N/A	N/A	N/A	N/A	N/A	

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Transtherm Gap Filler (Reinforce Layer)

Physical Properties	TSoft3STF 10	TSoft3STF 20	T Soft3STF 30	Test Method
Color	Light Green	Light Green	Light Green	Visual
Thickness (mm)	0,25	0,5	0,75	ASTM D374
Thickness Tolerance (mm)	+/- 0,03	+/- 0,04	+/- 0,07	
Thickness (mil)	10	20	30	
Thermal Impedance (°C.In ² /Watt)	0,41@10psi	0,73@10psi	1,07@10psi	ASTM E1530 (modified)
Dielectric Constant 1M Hz	4,72	4,72	4,72	ASTM D5470
Min. Continuous Use Temperature (°C)	-40	-40	-40	Modified UL 746B
Max. Continuous Use Temperature (°C)	150	150	150	
Thermal Conductivity (W/mK)	1,7@30psi	1,7@30psi	1,7@30psi	ASTM E1530 (modified)
Volume Resistivity (Ohm.cm)	4E+12	4E+12	4E+12	ASTM D5470
Dielectric Strength (Volts,minimum)	4500	6000	6000	ASTM D257
Weight Loss (%) 24hrs.@200°C	<1	<1	<1	ASTM D149 Type1
Hardness (Shore 00)	60	60	60	LAB-STM-A8A
Specific Gravity (g/cm ³)	2,43	2,43	2,43	ASTM D2240
Tensile Strength (KPa)	N/A	N/A	N/A	ASTM D792
Percentage of Deflection (%)@10psi	15	10	10	ASTM D828
Flame Resistance (UL File E 316839)	UL 94 VO	UL 94 VO	UL 94 VO	LAB-STM-A4E
Dissipation Factor 1M Hz	0,007	0,007	0,007	UL 94
Construction/ Material	Silicone /Fiberglass/Silicone	Silicone/Fiberglass/Silicone	Silicone/Fiberglass/Silicone	ASTM D150
Substrate / Reinforce layer	Fiberglass	Fiberglass	Fiberglass	

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Transtherm Gap Filler (Polyester one side)

Physical Properties	TSoft3STP 12	TSoft3STP 20	TSoft3STP 30	TSoft3STP 40	TSoft3STP 60	TSoft3STP 80	Test Method
Color	Green/blue	Green/blue	Green/blue	Green/blue	Green/blue	Green/blue	Visual
Thickness (mm)	0,3	0,5	0,75	1	1,5	2	ASTM D374
Thickness Tolerance (mm)	+/- 0,08	+/- 0,08	+/- 0,08	+/- 0,10	+/- 0,15	+/- 0,15	
Thickness (mil)	12	20	30	40	60	80	
Min. Continuous Use Temperature (°C)	-40	-40	-40	-40	-40	-40	Modified UL 746B
Max. Continuous Use Temperature (°C)	150	150	150	150	150	150	
Thermal Conductivity (W/mK)	0,65@30psi	0,75@30psi	0,90@30psi	1,05@30psi	1,2@30psi	1,4@30psi	ASTM E1530 (modified ASTM D5470)
Dielectric Strength (Volts, minimum)	5500	5500	5500	5500	5500	5500	ASTM D149 Type1
Weight Loss (%) 24hrs.@200°C	<1	<1	<1	<1	<1	<1	LAB STM-A8A
Hardness (Shore 00)	80	80	80	80	80	80	ASTM D2240
Specific Gravity (g/cm ³)	2,43	2,43	2,43	2,43	2,43	2,43	ASTM D792
Flame Resistance (UL File E316839)	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94
Construction / Material	Silicone/PETP	Silicone/PETP	Silicone/PETP	Silicone/PETP	Silicone/PETP	Silicone/PETP	Silicone/PETP

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Transtherm Gap Filler (No reinforce layer)

Physical Properties	TSoft3US 20	TSoft3US 40	TSoft3US 60	TSoft3US 80	TSoft3US 100	TSoft3US 120	Test Method
Color	Gray	Gray	Gray	Gray	Gray	Gray	Visual
Thickness (mm)	0,5	1	1,5	2	2,5	3	ASTM D 374
Thickness Tolerance (mm)	+/- 0,10	+/- 0,10	+/- 0,13	+/- 0,18	+/- 0,2	+/- 0,22	
Thickness (mil)	20	40	60	80	100	120	
Thermal Impedance (°C.In ² /Watt)	0,45@10psi	0,88@10psi	1,37@10psi	1,8@10psi	2,18@10psi	2,43@10psi	ASTM E1530 (modified ASTM D5470)
Dielectric Constant, 1M Hz	4,61	4,61	4,61	4,61	4,61	4,61	ASTM D 150
Min. Continuous Use Temperature (°C)	-40	-40	-40	-40	-40	-40	Modified UL 746B
Max. Continuous Use Temperature (°C)	150	150	150	150	150	150	
Thermal Conductivity (W/mK)	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	2,3@10psi	ASTM E1530 (modified ASTM D 5470)
Volume Resistivity (Ohm.cm)	1,0E+13	1,0E+13	1,0E+13	1,0E+13	1,0E+13	1,0E+13	ASTM D257
Dielectric Strength (Volts, minimum)	6000	6000	6000	6000	6000	6000	ASTM D149 Type 1
Weight Loss (%) 24 hrs@200°C	<1	<1	<1	<1	<1	<1	LAB-STM-A8A
Hardness (Shore 00)	30	30	30	30	30	30	ASTM D2240
Specific Gravity (g/cm ³)	2,24	2,24	2,24	2,24	2,24	2,24	ASTM D792
Tensile Strength (KPa)	N/A	N/A	N/A	N/A	N/A	N/A	ASTM D828
Percentage of Deflection (%) @10psi	20	30	30	20	20	20	LAB _STM-A4E
Flame Resitance (UL File E316839)	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94 VO	UL 94
Dissipation Factor , 1 MHz	0,0034	0,0034	0,0034	0,0034	0,0034	0,0034	ASTM D 150
Construction / Material	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	
Substrate / Reinforce layer	N/A	N/A	N/A	N/A	N/A	N/A	

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