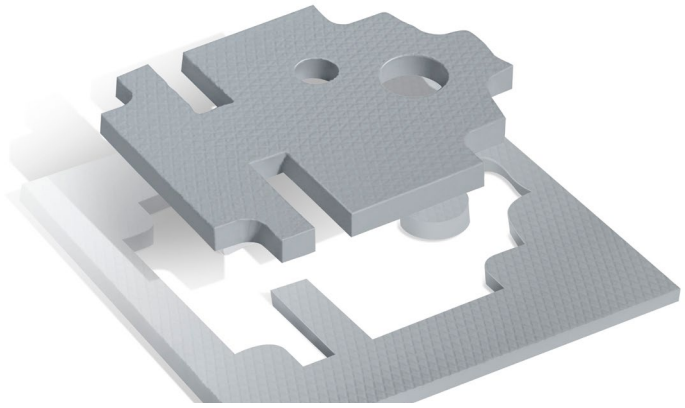
THERM-A-GAP® 500 SERIES

High Thermal Conductivity Thermal Gap Filler Pads

ERM-A-GAP® gap-filler sheets and pads offer excellent thermal properties and conformability at low clamping forces.

Most products are available on aluminum foil “A” or on “clean break” glass “G” fiber carrier. As with all previous Parker Chomerics gap-fillers, the “A” versions have a high strength acrylic pressure sensitive adhesive (PSA) for ease of attachment to the cold surfaces.

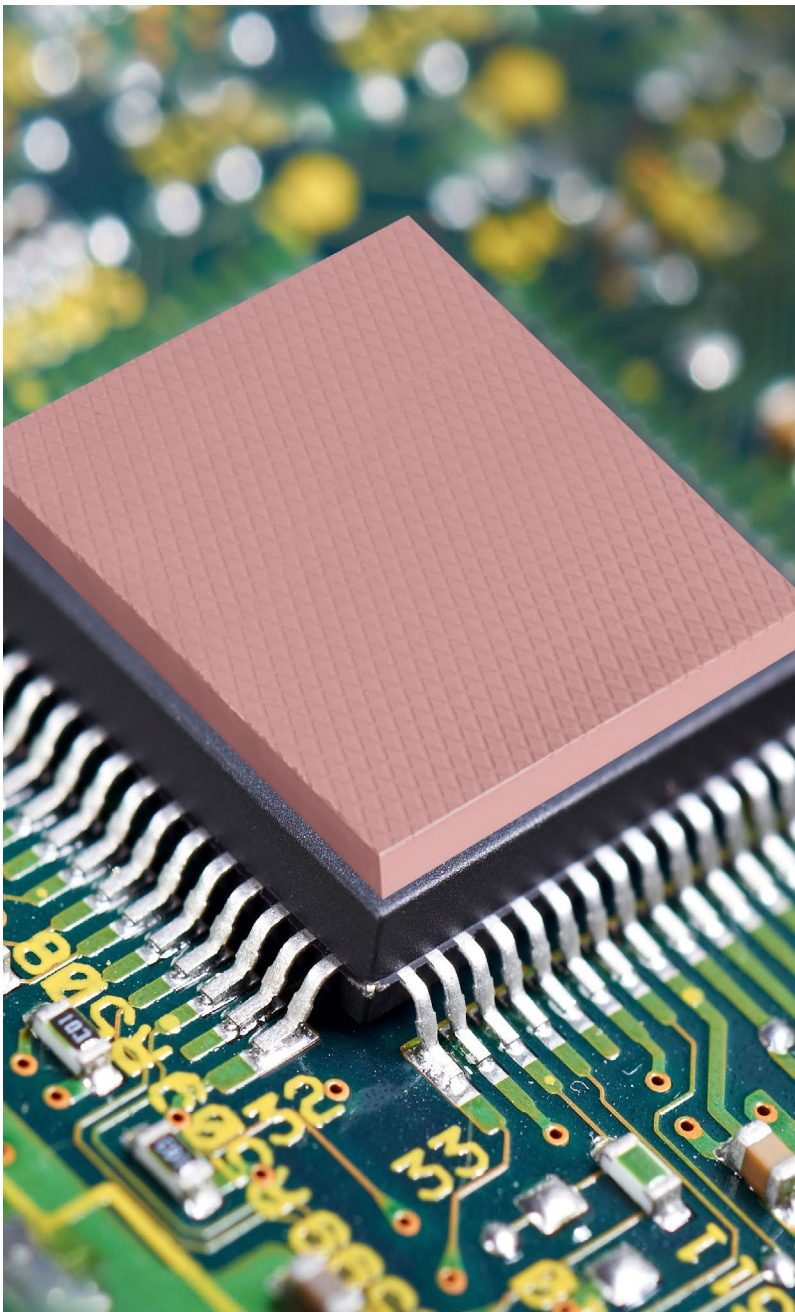


Product Features

- Ultra low deflection force
- High thermal conductivity
- High tack surface reduces contact resistance
- Various thicknesses available, finished in standard sheets
- Custom sized configurations and/or cut parts are available as individual parts or on sheets
- “A” version offers high strength acrylic PSA for ease of installation

Typical Applications

- Telecommunications equipment
- Consumer electronics
- Automotive electronics (ECUs)
- LEDs, lighting
- Power conversion
- Power semiconductors
- Desktop computers, laptops, servers
- Handheld devices
- Memory modules
- Vibration dampening



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THERM-A-GAP PAD PRODUCT INFORMATION

	Typical Properties†	569	570	579	580	Test Method
Physical	Color	Gray	Blue	Pink	Yellow	Visual
	Binder	Silicone	Silicone	Silicone	Silicone	--
	Carrier Options Supported (standard): G = Woven glass carrier - no PSA A = Aluminum foil carrier - with acrylic PSA F = Woven glass carrier - centered on thickness No pressure sensitive adhesive (PSA) option Supported (custom): PN = PEN film carrier KT = Thermally enhanced polyimide carrier Unsupported (no carrier): 579 and 580 only - no letter notation needed	A569 G569 569PN	A570 G570	A579 G579 579PN 579KT 579	A580 G580 580	--
	Standard Thicknesses*, in (mm)	0.010 - 0.200 (0.25 - 5.0)	0.020 - 0.200 (0.50 - 5.0)	0.010 - 0.200 (0.25 - 5.0)	0.020 - 0.200 (0.50 - 5.0)	ASTM D374
	Specific Gravity	2.2	2.2	2.9	2.9	ASTM D792
	Hardness	10, Shore 00	25, Shore 00	30, Shore 00	45, Shore 00	ASTM D2240
	Percent Deflection @ various pressures (0.120 in thick sample) @ 5 psi (34 kPa) @ 10 psi (69 kPa) @ 25 psi (172 kPa) @ 50 psi (345 kPa)	% Deflected 20 30 50** 65**	% Deflected 10 15 25 35	% Deflected 22 33 55** 68**	% Deflected 7 10 20 30	ASTM C165 MOD (0.125 in "G" Type, 0.50 in dia probe,0.025 in/min rate)§
	Operating Temperature Range, °F (°C)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	-67 to 392 (-55 to 200)	Chomerics
Thermal	Thermal Conductivity, W/m-K	1.5	1.5	3	3	ASTM D5470
	Thermal Impedance, °C-in²/W (°C-cm²/W) @ 10 psi, @ 0.04 in (1 mm) thick, "G" version only	1.4 (9.1)	1.4 (9.1)	0.7 (4.5)	0.7 (4.5)	ASTM D5470
	Heat Capacity, J/g-K	1	1	1	1	ASTM E1269
	Coefficient of Thermal Expansion, ppm/K	250	250	150	150	ASTM E831
Electrical	Dielectric Strength, Vac/mil (kVac/mm)	200 (8)	200 (8)	200 (8)	200 (8)	ASTM D149
	Volume Resistivity, ohm-cm	10^{14}	10^{14}	10^{14}	10^{14}	ASTM D257
	Dielectric Constant @ 1,000 kHz	6.5	6.5	8.0	8.0	ASTM D150
	Dissipation Factor @ 1,000 kHz	0.013	0.013	0.010	0.010	CHO-TM-TP13
Regulatory	Flammability Rating	V-0	V-0	V-0	V-0	UL 94
	RoHS Compliant	Yes	Yes	Yes	Yes	Chomerics Certification
	Outgassing, % TML (% CVCM)	0.42 (0.08)	0.35 (0.09)	0.19 (0.06)	0.18 (0.05)	ASTM E595
	Shelf Life, months from date of shipment	36	36	36	36	Chomerics
	Shelf Life, months from date of shipment - "A" aluminum foil carrier version ONLY	18	18	18	18	Chomerics
	Storage Conditions, °F (°C) @ 50% Relative Humidity	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	50 to 90 (10 to 32)	Chomerics

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

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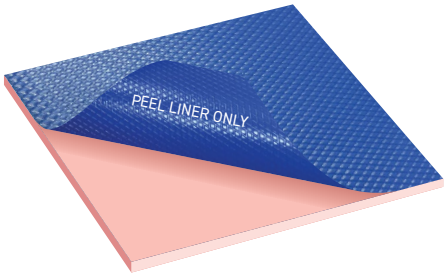
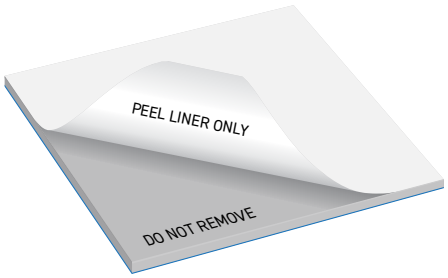
THERM-A-GAP PAD PRODUCT INFORMATION

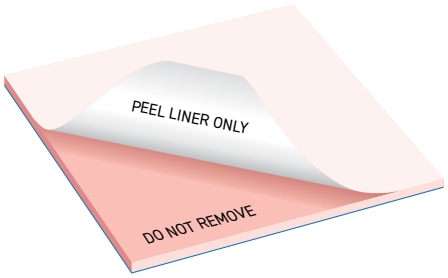
Product examples showing carrier options and liners.



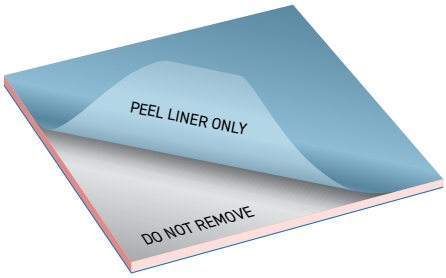
Blue base liner on all pads
remove prior to installation



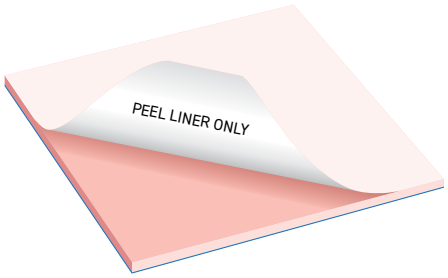
G569
with gray fiberglass carrier, peelable liner



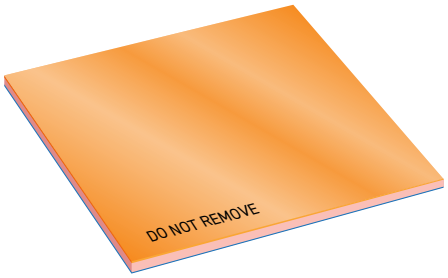
G579
with fiberglass carrier, peelable liner



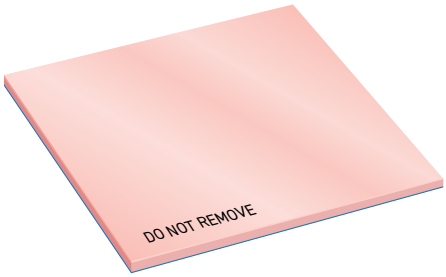
A579
with aluminum PSA carrier, peelable liner



579
unsupported (no carrier), peelable liner



579KT
with thermally enhanced polyimide carrier, no liner



579PN
with PEN film carrier, no liner

Available Carriers

- G – woven fiberglass (no PSA) – this carrier option provides reinforcement and a clean break / low-tack interface surface, allowing for re-use of the pad if necessary or for prototyping.
- A – aluminum foil (with PSA) – this carrier's primary function is to allow a dedicated pressure sensitive adhesive on the gap pad
- F - Woven glass carrier - centered on thickness. No pressure sensitive adhesive (PSA) option.
- PN – PEN film (polyethylene napthalate) – this carrier permits the gap pad to see a shearing motion and offers a clear, cost-effective dielectric film with fair thermal performance.
- KT – thermally enhanced polyimide – this carrier permits the gap pad to see a shearing motion and offers an excellent dielectric film with enhanced thermal performance.
- No carrier (no letter distinction) – the no carrier or "un-reinforced" option allows the gap pad to have high-tack surfaces on both sides, allowing for the pad to be highly conformable, but it does make cutting and handling of the product more difficult.

"A" carrier systems have a 0.005" typical thickness, transparent, blue Mylar release liner on this side. This is removed prior to use.

"G" carrier systems have a 0.003" typical thickness, opaque, white polyethylene release liner on this side. This is removed prior to use.

"PN" carrier systems have a 0.001" typical thickness, transparent, clear, polyethylene napthalate (PEN) film on this side. DO NOT REMOVE.

"KT" carrier systems have a 0.001" typical thickness, transparent, orange, Kapton film on this side. DO NOT REMOVE.

ALL systems have on the non-carrier side, a .014 typical thickness, opaque, blue diamond embossed, poly release liner.

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THERM-A-GAP PAD ORDERING INFORMATION

9” x 12” and 10” x 15” Sheets

PART NUMBER: 6W — XX — YYYY — ZZZZZZZ

1 = No Pressure Sensitive Adhesive
2 = Acrylic Pressure Sensitive Adhesive (PSA), Available Only with Aluminum Foil Carrier (A Letter Designation)

Sheet Thickness (in)*
Available in 0.010” increments from (0.010” - 0.200”)
(0.254 mm - 5.0 mm)

* Sheet thickness tolerance is ±10% of the nominal thickness OR ± .010”, whichever is smaller

0.010 = 01[10]	0.110 = 11
0.020 = 02[20]	0.120 = 12[30]
0.030 = 03	0.130 = 13
0.040 = 04	0.140 = 14
0.050 = 05	0.150 = 15
0.060 = 06	0.160 = 16
0.070 = 07	0.170 = 17
0.080 = 08	0.180 = 18
0.090 = 09	0.200 = 20
0.100 = 10	

Sheet Size
Overall Tolerances
± 0.250in (± 6.45 mm)

YYYY = 0909
9” x 9” sheet
(228.6 mm x 228.6 mm)

Available Materials:
569
579
G570
G579
579PN
579KT
579
G580
580

YYYY = 1015
10”x 15” sheet
(254 mm x 381 mm)

Available Materials:
PAD 80
PAD 70TP
PAD 60

Material Type

A569
G569
569PN
A570
G570
A579
G579
579KT
A579
579PN
579
A580
G580
580

[10] Minimum thickness for G569
[20] Minimum thickness for 569PN, A570, G570, G579, 579PN, A580, G580
[30] Minimum thickness for 579, 580 (Unsupported)

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

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THERM-A-GAP PAD ORDERING INFORMATION

18" x 18" Sheets - Pressure Sensitive Adhesive (PSA) 1 Side

PART NUMBER: 69 — 1W — YYYY — ZZZZZZZ

Custom Sheet
18 ± 0.250" x 18 ± 0.250"
Distributor Sheets

These sheets are typically sold to fabricating distributors.

Sheets may contain up to five (5) defects, not to exceed 1 square inch.

Defects are "marked" prior to shipment.

1= No Pressure Sensitive Adhesive

2 = Acrylic Pressure Sensitive Adhesive (PSA), Available Only with Aluminum Foil Carrier (A Letter Designation)

Sheet Thickness (in)*
Available in 0.010" increments from (0.010" - 0.200")
(0.254 mm - 5.0 mm)

* Sheet thickness tolerance is ±10% of the nominal thickness OR ± .010", whichever is smaller

0.010 - 28539[10]	0.110 - 40306
0.015 - 28540[15]	0.120 - 27102[120]
0.020 - 20698[20]	0.130 - 20675
0.030 - 20913	0.140 - 27100
0.040 - 20684[40]	0.150 - 27101
0.050 - 27395	0.160 - 20686
0.060 - 20991	0.170 - 27099
0.070 - 20685	0.180 - 27103
0.080 - 21259	0.190 - 40269
0.090 - 40378	0.200 - 20687
0.100 - 20672	

Material Type

A569	579KT
G569	A579
569PN	579PN
A570	579
G570	A580
A579	G580
G579	580

[10] Minimum thickness for G569
[15] Minimum thickness for G579
[20] Minimum thickness for 569PN, A570, G570, G579, 579PN, A580, G580

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

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