LiPOLY®
SHIU LI TECHNOLOGY CO.,LTD

T-top98-s

High Thermal Conductive Gap Filler

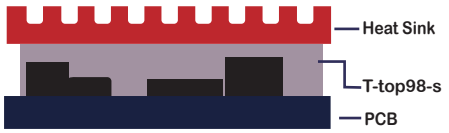
LiPOLY T-top98-s offers outstanding thermal conductivity at 18.0 W/m*K and extremely low thermal resistance under minimal force. T-top98-s offers excellent compression, filling small air gaps on uneven surfaces, ensuring an efficient and consistent transfer of heat.

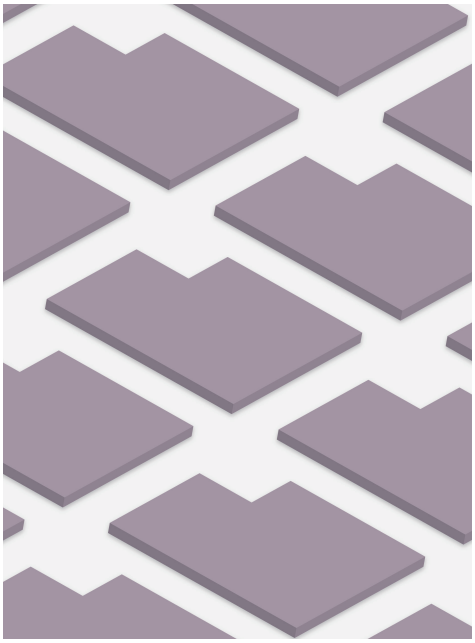
FEATURES

/ Thermal conductivity: 18.0 W/m*K
/ High compression rate
/ Extremely low thermal impedance

TYPICAL APPLICATION

/ Between CPU and heat sink
/ Between a component and heat sink
/ Flat-panel displays
/ Power supplies
/ High speed mass storage drives
/ Telecommunication hardware
/ 5G base station & infrastructure
/ EV electric vehicle





CONSTRUCTION

Series	Characteristics	Configurations
T-top98-s	Silicone compound with weak sticky surfaces.	Sheets form, Die-cuts parts

TYPICAL PROPERTIES

PROPERTY	T-top98-s	TEST METHOD	UNIT
Color	Purple	Visual	-
Surface tack 2-side/1-side	2	-	-
Thickness	Customized	ASTM D374	mm
Density	3.3	ASTM D792	g/cm³
Hardness	65	ASTM D2240	Shore OO
TML	<0.1	By LiPOLY	%
Application temperature	-60~150	-	°C
ROHS & REACH	Compliant	-	-
COMPRESSION			
Deflection @10 psi	11	ASTM D5470 modify	%
Deflection @20 psi	38	ASTM D5470 modify	%
Deflection @30 psi	62	ASTM D5470 modify	%
Deflection @40 psi	71	ASTM D5470 modify	%
Deflection @50 psi	77	ASTM D5470 modify	%
ELECTRICAL			
Dielectric breakdown	8	ASTM D149	KV/mm
Surface resistivity	$>10^{11}$	ASTM D257	Ohm
Volume resistivity	$>10^{10}$	ASTM D257	Ohm-m
Dielectric constant@10MHz D_k	10.0	ASTM D150	-
Dielectric constant@1GHz D_k	9.9	ASTM D150	-
Dielectric constant@1.8GHz D_k	10.3	ASTM D150	-
Dielectric factor@10MHz D_f	0.003	ASTM D150	-
Dielectric factor@1GHz D_f	0.007	ASTM D150	-
Dielectric factor@1.8GHz D_f	0.025	ASTM D150	-
THERMAL			
Thermal conductivity	18.0	ASTM D5470	W/m*K
Thermal conductivity	10.5	ISO 22007-2	W/m*K
Thermal impedance@10psi	0.149	ASTM D5470	°C-in²/ W
Thermal impedance@20psi	0.104	ASTM D5470	°C-in²/ W
Thermal impedance@30psi	0.061	ASTM D5470	°C-in²/ W
Thermal impedance@40psi	0.046	ASTM D5470	°C-in²/ W
Thermal impedance@50psi	0.039	ASTM D5470	°C-in²/ W
Coefficient of thermal expansion	$-312.13x10^{-6}$	ASTM E228	1/K

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THERMAL IMPEDANCE & COMPRESSION

Compression Force (psi)	Thermal Impedance (°C-in²/W)			Compression (%)		
	1.0 mm	2.0 mm	3.0 mm	1.0 mm	2.0 mm	3.0 mm
10	0.149	0.247	0.304	11	20	39
20	0.104	0.138	0.156	38	58	71
30	0.061	0.085	0.080	62	75	82
40	0.046	0.064	0.065	71	83	87
50	0.039	0.046	0.054	77	86	90

Test method: ASTM D5470

RELIABILITY

Test Property	Compression Force (psi)	70°C				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.149	0.148	0.149	0.148	0.149
	30	0.061	0.061	0.061	0.062	0.062
	50	0.039	0.039	0.038	0.038	0.039

Test Property	Compression Force (psi)	150°C				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.149	0.148	0.149	0.149	0.150
	30	0.061	0.061	0.061	0.062	0.062
	50	0.039	0.039	0.039	0.040	0.040

Test Property	Compression Force (psi)	60°C / 90%RH				
		Initial	100 hrs	250 hrs	500 hrs	1000 hrs
Thermal Resistance	10	0.149	0.148	0.149	0.148	0.149
	30	0.061	0.061	0.060	0.061	0.061
	50	0.039	0.039	0.038	0.040	0.040

Test Property	Compression Force (psi)	-40°C (30min) ⟷ +125°C (30min)					
		0 Cycles	100 Cycles	200 Cycles	300 Cycles	400 Cycles	500 Cycles
Thermal Resistance	10	0.149	0.148	0.149	0.148	0.149	0.148
	30	0.061	0.060	0.061	0.060	0.061	0.061
	50	0.039	0.038	0.039	0.038	0.038	0.039

Test Property	Compression Force (psi)	Ultra Low Temperature -60°C					
		Initial	100 hrs	200 hrs	300 hrs	400 hrs	500 hrs
Thermal Resistance	10	0.149	0.148	0.148	0.148	0.149	0.149
	30	0.061	0.060	0.061	0.060	0.061	0.061
	50	0.039	0.039	0.038	0.039	0.040	0.040

Test method: ASTM D5470 , Specimen thickness = 1.0mm , Unit: °C-in²/W