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Technical Data | December 2018

3M™ Thermally Conductive Acrylic Interface Pad 5550H

Product Description

3M™ Thermally Conductive Acrylic Interface Pad 5550H is designed to provide a preferential heat transfer path between heat generating components like IC Chip or EV batteries and heat spreader. With higher thermal conductivity (3.0W/m·K) and low hardness (Asker C 5), 3M pad 5550H consists of a highly conformable, slightly tacky acrylic elastomer sheet filled with conductive ceramic particles which provide special features listed as follows:

Key Features

- Easy handling and very soft
- High conformability even for non-flat IC surfaces and automotive batteries
- Incorporates a thin firm acrylic layer for good handling
- High thermal conductivity while being electrically insulating
- Slight tack allows pre-assembly. Good wettability for better thermal conductivity
- No siloxane gas /oil bleeding, which can cause electric connection failure
- UL94 V-0 certified (File No (.), E176845)

Product Construction/Material Description

PET liner
Thermally conductive firm layer (less tack)
Thermally conductive conformable layer
PET liner

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Thermally Conductive Acrylic Interface Pad 5550H	
Property	**Value**
Color	White/Gray
Base resin	Acrylic
Thickness	0.5mm, 1.0mm (thicker pads available upon request)
Filler type	Ceramic
Very low tack layer	Good for re-workability and handling, light gray color-permanent layer
Low tack layer	Very soft and good thermal conductivity, white color

Applications

- Heat transfer in consumer electronics and automotive electronic products
- Decrease of compression stress to electro parts by thermal pad softness

Examples:

- Heat transfer between PCB and heat sink
- Thermal management in automotive batteries
- Power electronics component thermal management

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- Chip on film (COF) heat conduction
- LED thermal management
- HDTV IC chip
- General gap filling in electronic devices

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the commercialized product. This value is a measured value, not a guaranteed value.

3M™ Thermally Conductive Acrylic Interface Pad 5550H		
Property	**Method**	**Value**
Thermal conductivity	3M Method*[3]	3.0W/mK*[1]
Thermal conductivity	ASTM D5470	2.0W/mK
Hardness	Asker C Shore 00	5 *[2] 30
Dielectric strength	ASTM D149	15 kV/mm
Density	ASTM D6111	2.3 g/cm^3
Flammability	UL94	V-0

*[1] Method listed as modified ASTM, sample thickness is 2-8mm. Sample size is 33mm ϕ . Pressure condition is 200Kpa.
*[2] Test results are based on a 10mm thickness sample. Sample tested to soft layer side of sample pad.
*[3] Contact Technical Service for detail of 3M test method

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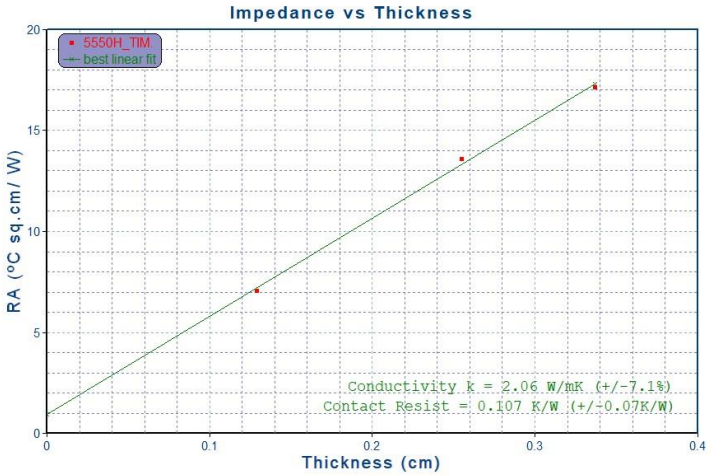
As tested on 3M™ Thermally Conductive Acrylic Interface Pad 5550H			
Duration (hrs)	Initial	1000	3000
Thermal conductivity (W/m-K)	3.1	3.1	3.2
Hardness (Asker C)	5	5	6
Appearance	-	No effect	No effect

Note1: Aged by dwelling at 130℃ in high temperature chamber.
Note2: Thermal conductivity for aging tested using the 3M Method.



3M™ Thermally Conductive Acrylic Interface Pad 5550H

Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Acrylic Interface Pad 5550H is 12 months from the date of manufacturing when stored in the original packaging materials and stored at 21°C (70°F) and 50% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is commercially available from 3M. The commercially available product will have a COA specification established. The COA contains the 3M specifications and test methods for the products performance limits that the product will be supplied against. The 3M product is supplied to 3M COA test specifications and the COA test methods. Contact your local 3M representative for this product's COA.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes.

Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the commercialized product.

Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

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