



KERATHERM[®]

Product News Softtherm[®] Films

Softtherm[®] 86/225

Softtherm[®] 86/450

Softtherm[®] 86/525

Softtherm[®] U 200
silicone free

KERAFOL[®]

KERAMISCHE FOLIEN GMBH

Innovation in Technology and Environmental Protection

Keratherm® - Softtherm® 86/225

Applications:

- Heat pipe thermal solutions
- Automotive engines
- Control systems
- Control units



Properties	Unit	86/225
Colour		orange
Thermal properties		
Thermal resistance R_{th}	K/W	< 0.60
Thermal impedance R_{ti}	°Cmm²/W Kin²/W	> 218 < 0.32
Thermal conductivity λ	W/mK	> 2.0
Electrical properties		
Breakdown voltage $U_{d; ac}$	kV	> 6.0
Dielectric breakdown $E_{d; ac}$	kV/mm	> 12.0
Volume resistivity (100V)	Ωm	2.2×10^{11}
Dielectric loss factor $\tan \delta$ (1kHz)	1	0.001
Dielectric constant ϵ_r (1kHz)	1	3.6
Mechanical properties		
Measured thickness (+/-10%)	mm	0.5
Hardness	Shore 00	30 - 45
Youngs modulus*	N/cm²	58
Physical properties		
Density	g/cm³	1.65
Application temperature	°C	-40 to +180
TML	Ma. %	< 0.44
Flame rating**	UL	94V-0
Possible thickness	mm	0.5 – 5.0

*Youngs modulus sample size 30mmx30mmx2.5mm; variable contact pressure; compression 50% of the measured thickness

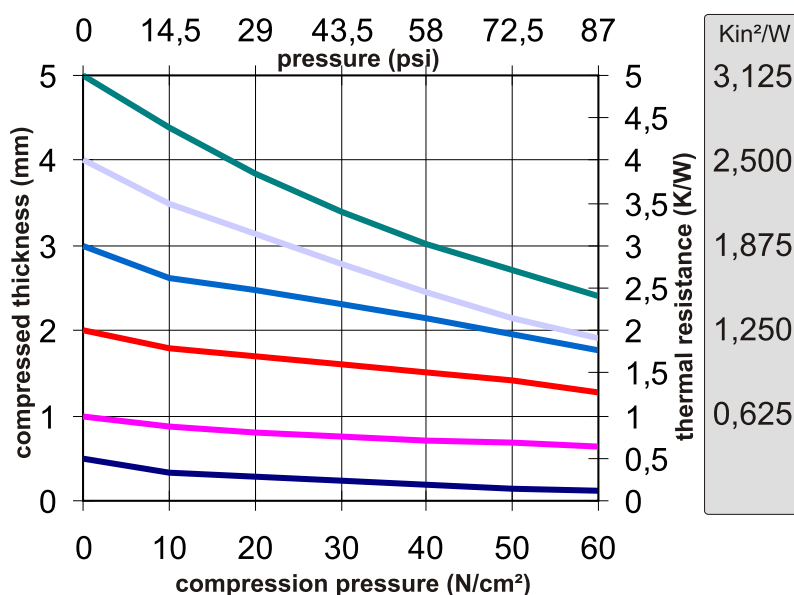
**Kerafol test according to UL

This new single-layer fiberglass-reinforced Softtherm® film is produced in thicknesses from 0.5 mm to 5.0 mm and has good self-adhesive behavior on both sides. Good thermal values and very good dielectric properties characterize this film.

The film's ideal Shore hardness guarantees very good compressibility and good relaxation, along with vibration damping characteristics.

Operation areas for this economical film include heat pipes, automotive applications, control systems and control units.

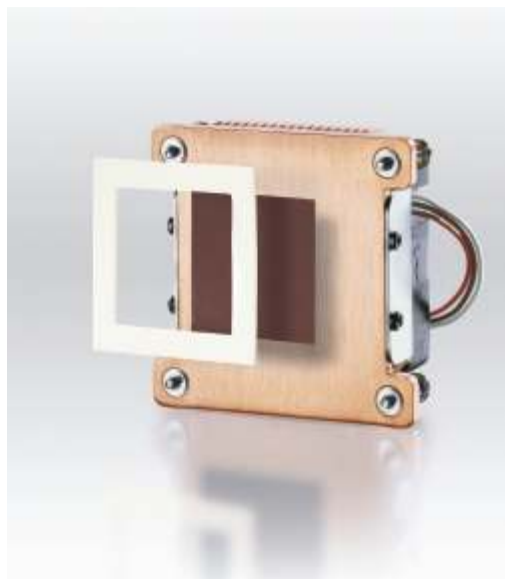
Compressibility Softtherm® 86/225



Keratherm® - Softtherm® 86/450

Applications:

- SMD components
- BGAs
- PPGAs
- Embedded Boards



Properties	Unit	86/450
Colour		chocolate
Thermal properties		
Thermal resistance R_{th}	K/W	< 0.3
Thermal impedance R_{ti}	°Cmm²/W Kin²/W	121 0.19
Thermal conductivity λ	W/mK	> 4.2
Electrical properties		
Breakdown voltage $U_{d,ac}$	kV	> 5.0
Dielectric breakdown $E_{d,ac}$	kV/mm	> 10.0
Volume resistivity (100V)	Ωm	3.6×10^{12}
Dielectric loss factor $\tan \delta$ (1kHz)	1	0.003
Dielectric constant ϵ_r (1kHz)	1	2.5
Mechanical properties		
Measured thickness (+/-10%)	mm	0.5
Hardness	Shore 00	65 - 75
Youngs modulus*	N/cm²	94,5
Physical properties		
Density	g/cm³	1.32
Application temperature	°C	-40 to +180
TML	Ma. %	< 0.40
Flame rating**	UL	94V-0
Possible thickness	mm	0.5 – 3.0

*Youngs modulus sample size 30mmx30mmx2.5mm; variable contact pressure; compression 50% of the measured thickness

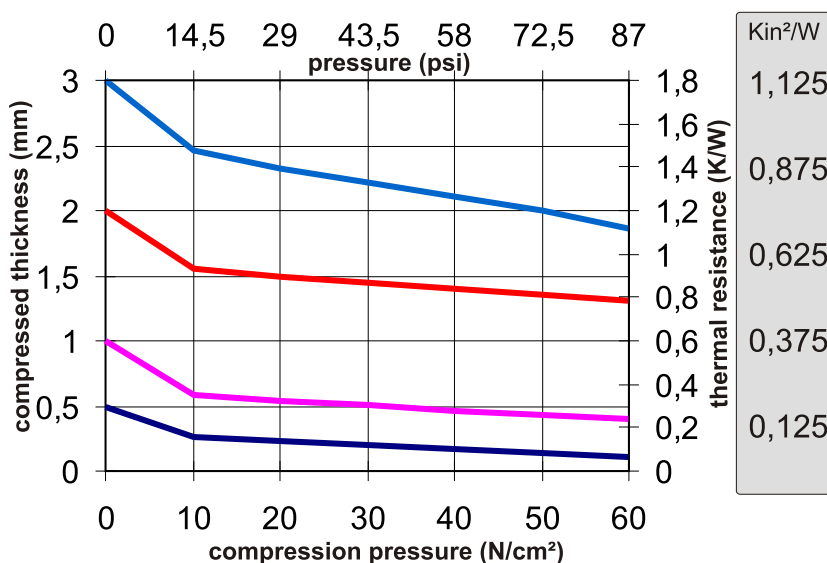
**Kerafol test according to UL

This soft hybrid heat-conducting film has been developed for pressure-sensitive uses in the middle and upper performance ranges. Besides very good thermal and dielectric characteristics the film is also highly suitable for automatic placement.

This carrier-free film is available in thicknesses from 0.5 mm to 3.0 mm. Special attention was paid to the film's processability and cost optimization.

Applications for Softtherm® 86/450 include cooling of power semiconductors, such as SMD components, BGAs and PPGAs in automotive applications and embedded boards.

Compressibility Softtherm® 86/450

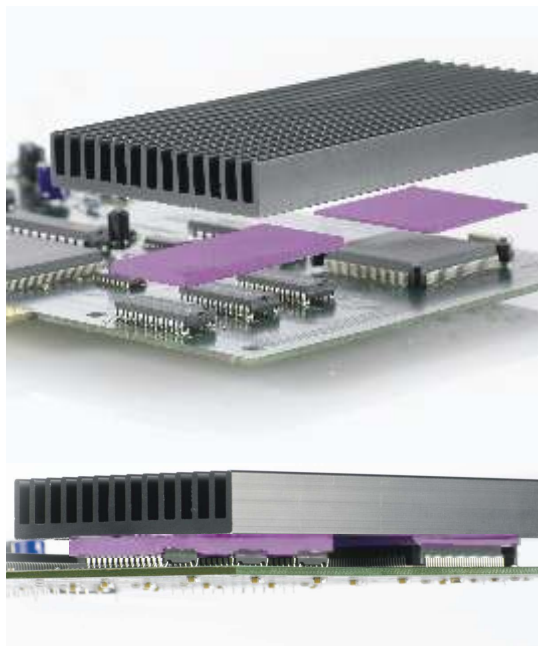


Keratherm® - Softtherm® 86/525

preliminary data

Applications:

- Automotive
- Stress sensitive components
- LED-applications
- Computer technology



Properties	Unit	86/525
Colour		violet
Thermal properties		
Thermal resistance R_{th}	K/W	< 0.22
Thermal impedance R_{ti}	°Cmm²/W Kin²/W	89 0.14
Thermal conductivity λ	W/mK	> 5.5
Electrical properties		
Breakdown voltage $U_{d, ac}$	kV	> 1.5
Dielectric breakdown $E_{d, ac}$	kV/mm	> 3.0
Volume resistivity (100V)	Ωm	16×10^{12}
Dielectric loss factor $\tan \delta$ (1kHz)	1	0.001
Dielectric constant ϵ_r (1kHz)	1	2.7
Mechanical properties		
Density	g/cm³	1.18
Measured thickness (+/-10%)	mm	0.5
Hardness	Shore 00	50 - 60
Youngs modulus*	N/cm²	98.5
Physical properties		
Application temperature	°C	-40 to +180
TML	Ma. %	< 0.35
Flame rating**	UL	94V-0
Possible thickness	mm	0.5 – 3.0

*Youngs modulus sample size 30mmx30mmx2.5mm; variable contact pressure; compression 50% of the measured thickness

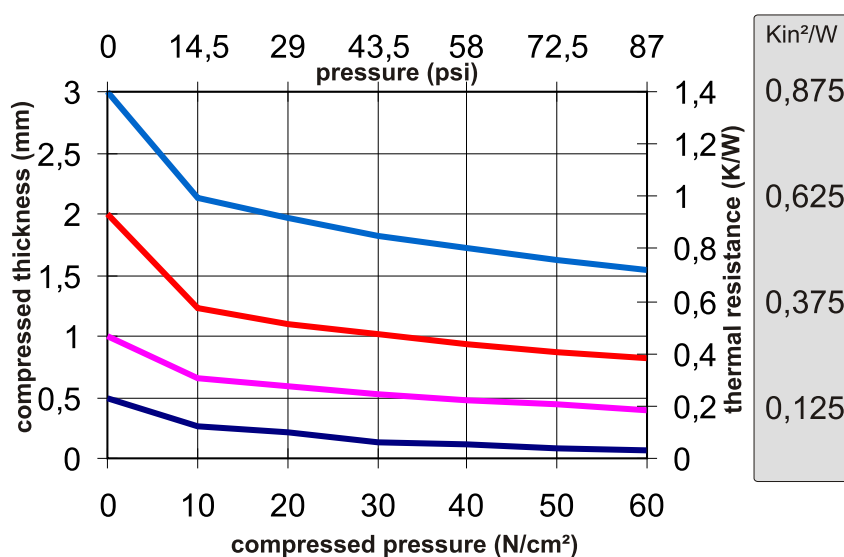
**Kerafol test according to UL

This new film is designed for optimal thermal connections in the fields of computer technology and high-performance automotive applications.

With its outstanding thermal conductivity and very good compressibility the film is very well suited for these types of applications. The material's good formability reduces mechanical stress on the power components.

This carrier-free film is available in thicknesses from 0.5 mm to 3.0 mm.

Compressibility Softtherm® 86/525



Keratherm® - Softtherm® U 200 silicone free

preliminary data

Applications:

- Automotive
- LED-Applications



Properties	Unit	U 200
Colour		brown
Thermal properties		
Thermal resistance R_{th}	K/W	< 0.60
Thermal impedance R_{ti}	°Cmm²/W Kin²/W	218 0.38
Thermal conductivity λ	W/mK	> 2.0
Electrical properties		
Breakdown voltage $U_{d; ac}$	kV	> 7.0
Dielectric breakdown $E_{d; ac}$	kV/mm	> 14.0
Mechanical properties		
Measured thickness (+/-10%)	mm	0.5
Hardness	Shore 00	55 - 70
Youngs modulus*	N/cm	197.1
Physical properties		
Density	g/cm³	2.12
Application temperature	°C	-40 to +130
TML	Ma. %	< 0.8
Flame rating**	UL	94V-0
Possible thickness	mm	0.5 – 5.0

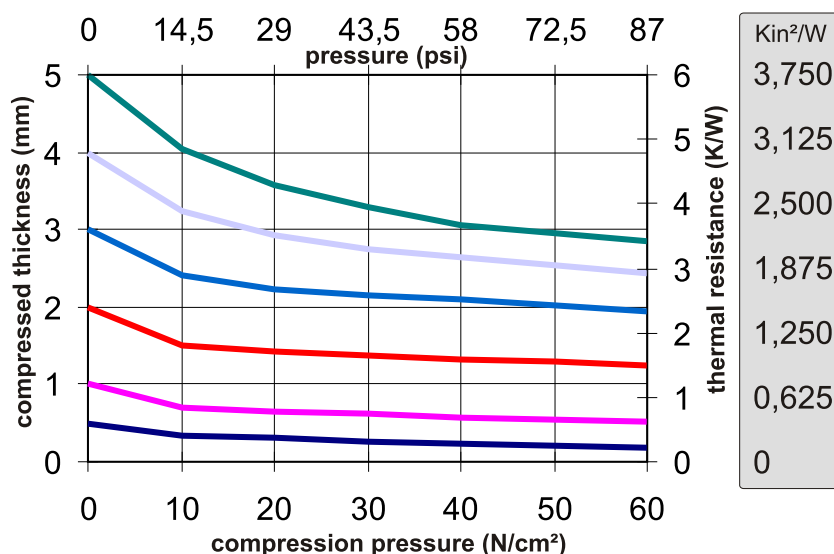
*Youngs modulus sample size 30mmx30mmx2.5mm; variable contact pressure; compression 50% of the measured thickness

**Kerafol test according to UL

A new silicone-free Softtherm® film based on a filled copolymer. Besides good thermal behavior the film has good compressibility and aging resistance. This carrier-free film displays good relaxation behavior and can be produced in thicknesses from 0.5 mm to 5.0 mm.

The film is good for applications in sensitive areas where materials containing silicone cannot be used. That especially includes automotive and LED applications.

Compressibility Softtherm® U 200



Customized Solutions

We look forward to receiving your inquiry!



Innovations in Technology and Environmental Protection are the objectives of Kerafol®.

Competent customer-oriented advice and problem solutions are our principles as well as a constant further development of our product range to provide the optimal solution for each application.

Discover our wide range of products and benefit from a broad range of applications!

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November 2010