THERMAL CONDUCTIVITY
(W/m·°K)

1W/mK up to 220 W/mK

Electrically insulating and electrically non insulating

Kunze
The Heatmanagement Company

Thermal Interface Recommendation for LED Applications

Kunze thermally conductive interface materials are available in both electrically insulating and electrically insulating version. Through these materials the thermal contact resistance is reduced to a minimum and the thermal performance of LED application is optimized

PROPERTIES

· **All five materials ensure the production process, easy handling and available in sizes suitable for Citizen LEDs**

· **KU-SAD20:**

silicone-free, no outgassing (siloxanes), both sides strongly adhesive

· **KU-SAS20:**

aging resistant, both sides strongly adhesive.

UL flammability rating: UL 94 VO (File No.: E337894)

KU-CBMA125:

Anisotropic thermal conductivity (high thermal conductivity in the Z direction, very high thermal conductivity in X - Y directions).

Ideal for large-scale cooling of small hot spots. Silicon free, no outgassing. High operation temperature.

· **KU-ALC5 / KU-ALF5**

extremely low thermal contact resistance, silicone-free, no outgassing, no bleeding.

***CITIZEN* High Power LED**

PART	KU-	SAS20	SAD20	CBMA 125	ALC5	ALF5
GENERAL PROPERTIES						
Material	Body	Silicone	Acrylic	Grafite	Aluminium	
Phase-Change-Material		---	---	---	CRAYOTHERM®	
Colour		white	white	dark-grey	white	black
Total thickness	µm	200	200	125	76	76
ELECTRICAL PROPERTIES						
Dielectric strength	V (AC)	6500	2500	---	---	---
THERMAL PROPERTIES						
Thermal conductivity (Z direction)	W/mK	1,15	1,0	1,8	220 (Aluminium substrate)	
Thermal conductivity (X-Y direction)	W/mK			134		
Thermal resistance (inch²)	°C/W	0,23	0,48	0,11	0,021	0,009
Phase change temperature	°C	--	--	--	60	51

Issue date: 13.10.2011

Kunze Folien GmbH · Raiffeisenallee 12a · 82041 Oberhaching · Phone: +49 (0) 89 66 66 82 -0 · Fax: +49 (0) 89 66 66 82 -10
sales@heatmanagement.com · www.heatmanagement.com

THERMAL CONDUCTIVITY
(W/m·°K)
1,0
Electrically insulating

Kunze
The Heatmanagement Company

LEDPAD® Double-sided adhesive, thermally conductive silicone film, SAS series

LEDPAD® KU-SAS is a silicone film with good thermal conductivity and powerful double-sided adhesion. Its shear strength of 50 N/cm² at 25 °C, its conductivity of 1,0 W/mK, its very low thermal transfer resistance combined with high dielectric strength, make it the ideal material for thermal stabilization of LED applications.

This film's most prominent feature is its superior temperature resistance when compared to other materials, e.g. adhesive acrylic tapes.

PROPERTIES

- Easy to apply, even on large surfaces
- Wide temperature range
- Very flexible
- Easy to remove
- Clean and easy handling, superior process reliability
- UL flammability rating: UL 94 V0 (FileNr: E337894)
-

Double-sided adhesive, thermally conductive silicone KU SAS

PART	KU-	SAS10	SAS20
GENERAL PROPERTIES			
Material		Silicone	
Colour		White	
Gauge	mm	0,1 -0,015 to +0,015	0,2 -0,015 to +0,015
Outgassing (LMW Siloxane)	ppm	∑ D3 -10 = 1	
MECHANICAL PROPERTIES			
Peel strength [1]	N/cm	6	6,4
ELECTRICAL PROPERTIES			
Dielectric strength (Voltage ramp) [2]	kV (AC)	3,2	6,4
Dielectric strength (Voltage steps) [3]	kV (AC)	2,0	5,0 at 25°C / 4,5 at 80°C
THERMAL PROPERTIES			
Thermal conductivity (ISO 22007-2)	W/mK	1,0	1,0
Thermal resistance [4] (inch²)	°C/W	0,16	0,48
Operating temperature	°C	-40 to +150	

We disclaim all liability for accuracy of this information. Technical detail is subject to change.

Image may differ from the original product

[1] 180° Peeling strength with Al plate, at 23°C, peeling speed: 300mm/min, sample was bonded using a 2kg roller, measurement follows after 10 min.

[2] Voltage ramp 1000 V/s

[3] Step-by-step voltage increments until dielectric breakdown

[4] according to ISO 27007-2

Issue date: 23.11.2010

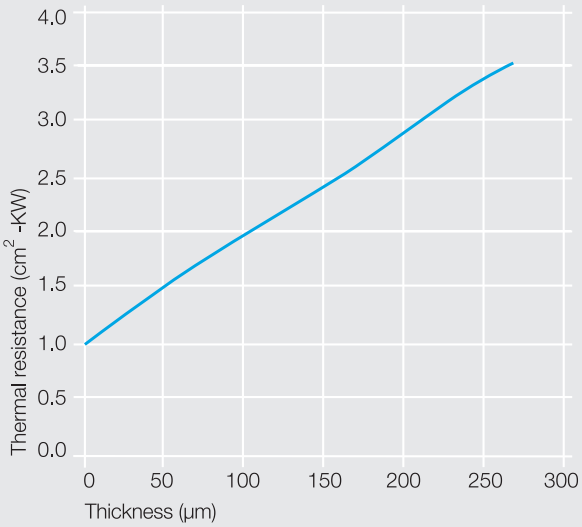
Kunze Folien GmbH · Raiffeisenallee 12a · 82041 Oberhaching · Phone: +49 (0) 89 66 66 82 -0 · Fax: +49 (0) 89 66 66 82 -10
sales@heatmanagement.com · www.heatmanagement.com

WÄRMELEITWERT
(W/m·°K)
1,0
elektrisch isolierend

Kunze
The Heatmanagement Company

THICKNESS DEPENDENCE

Thickness dependence of total thermal transfer resistance



Handling instructions:

1. Peel off one side of release film.
2. Apply one side of tape onto an edge of the carrier and press. After that, apply to the whole surface using a roll in order to prevent air pockets. It is recommended that components be left to rest for about 30 seconds. During this period, KU-SAS20 will develop powerful adhesion to the substrate.
3. Having let the components rest, peel off other side of release film. In case it has not rested enough, KU-SAS20 may delaminate from substrates.
4. Apply other side of tape to carrier.

Issue date: 23.11.2010

Kunze Folien GmbH · Raiffeisenallee 12a · 82041 Oberhaching · Phone: +49 (0) 89 66 66 82 -0 · Fax: +49 (0) 89 66 66 82 -10
sales@heatmanagement.com · www.heatmanagement.com