

THERMAL CONDUCTIVITY
(W/m·°K)

**1W/mK up
to
220 W/mK**

Electrically insulating
and
electrically non insulating



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

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

Image may differ from the original product

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

THERMAL CONDUCTIVITY
(W/m·°K)

134

X-Y direction (in-plane)

1,8

Z-direction (through-plane)

Electrically non insulating



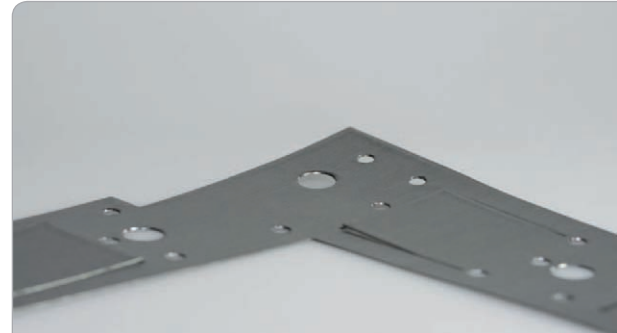
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High-performance thermally conductive graphite film, KU-CBMA series

HEATPAD® KU-CBMA are pure graphite interface materials with superior thermal conductivity along length and width (X-Y-direction) and high thermal conductivity through the thickness (Z-direction).

PROPERTIES

- Anisotropic thermal conductivity: very high thermal conductivity along length and width (X-Y-direction), high thermal conductivity through thickness (Z-direction)
- Silicone-free
- Soft and flexible
- Very high temperature resistance
- No hardening, no outgassing
- Guaranteed constant layer thickness
- No ageing
- Low tightening torque required
- Quick and clean handling, superior process reliability



High-performance thermally conductive graphite film, CBMA series

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PART	KU-	CBMA125	CBMA250
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GENERAL PROPERTIES

Material		Graphite (Carbon)	
Colour		Dark grey	
Gauge	mm	0,125	0,25
Material purity (Graphite)	%	>98	
Density	g/cm ³	1,35	

ELECTRICAL PROPERTIES

Volume resistivity in x-y direction (surface)	(Ωm)	2,0 x 10 ⁻⁶	1,5 x 10 ⁻⁶
Volume resistivity in z-direction (gauge)	(Ωm)	2,0 x 10 ⁻⁶	1,5 x 10 ⁻⁶

THERMAL PROPERTIES

Thermal conductivity in-plane (x-y direction)	W/mK	134	134
Thermal conductivity through-plane (z-direction)	W/mK	1,8	1,8
Thermal resistance (inch ²)	°C/W	0,11	0,22
Operating temperature	°C	-240 to +400	

Issue date: 30.11.2010