

**Verfügbare Materialdickenkombinationen**  
Available material thickness combinations

Keramikdicken mm / ceramic thicknesses mm	Kupferdicken mm / copper thicknesses mm					
	0.127	0.2	0.25	0.3	0.4	0.5-0.6
0.25		Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>			
0.32	Al <sub>2</sub> O <sub>3</sub> HPS	Al <sub>2</sub> O <sub>3</sub> HPS	Al <sub>2</sub> O <sub>3</sub> HPS	Al <sub>2</sub> O <sub>3</sub> HPS	HPS	HPS
0.38	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>		
0.5	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	
0.63	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub>	
0.76	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	
1.00	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub> AlN	Al <sub>2</sub> O <sub>3</sub>	

**Verfügbare Materialien**  
Available materials

- Al<sub>2</sub>O<sub>3</sub>** Aluminiumoxid  
Alumina
- HPS\*** Aluminiumoxid (9% ZrO<sub>2</sub> dotiert)  
Alumina (9% ZrO<sub>2</sub> doped)
- AlN** Aluminiumnitrid  
Aluminium Nitride

\* HPS ist patentrechtlich geschützt und kann nur unter Erwerb von Lizenzgebühren zur Verfügung gestellt werden.  
HPS is patent-protected and can be provided only under license.

**Wärmeleitfähigkeit**  
Thermal conductivity

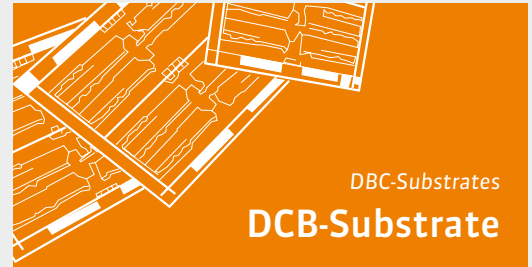
- Al<sub>2</sub>O<sub>3</sub> 24 W/mK @ 20°C
- HPS 28 W/mK @ 20°C
- AlN 180 W/mK @ 20°C

**Längenausdehnungskoeffizient**  
Coefficient of linear thermal expansion

Al <sub>2</sub> O <sub>3</sub>	HPS	AlN
6.8 ppm/K @ 20°C - 300°C	7.1 ppm/K @ 20°C - 300°C	4.7 ppm/K @ 20°C - 300°C

mit Cu-Beschichtung 5% - 60% höher (abhängig von der Cu-Dicke)  
with copper plating 5% to 60% higher (dependent on copper thickness)





**Allgemeine Maße**  
General Dimensions

Gesamtabmessungen Großkarte <i>Total dimensions master card</i>	<b>138 mm x 190.5 mm ± 2%</b> <i>5.5 inch x 7.5 inch ± 2%</i>
Max. nutzbare Fläche <i>Max. useable area</i>	<b>127 mm x 178 mm ± 0.05 mm</b> <i>5 inch x 7 inch ± 2 mil</i>
Kupferabzugskraft @ Cu-Dicke 0.3 mm <i>Copper peeling strength @ Cu-thickness 12 mil</i>	<b>≥ 4.0 N/mm @ 50 mm/min</b>
Kupferfreier Keramikrand (gelaserte Seite) <i>Copper free perimeter (lasered side)</i>	<b>typ. 0.35 mm ± 0.25 mm</b> <i>typ. 14 mil ± 10 mil</i>

**Oberfläche**  
Surface options

**Cu blank** *Bare copper*

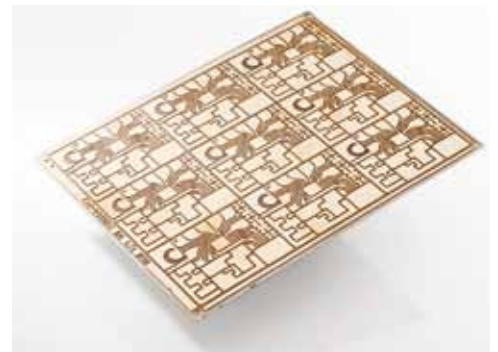
- Stromlos *electroless Ni*: 3 µm – 7 µm (8% ± 2% P)
- Au-Flash *Au-Flash* 0.01 µm – 0.13 µm
- Stromlos *electroless Ag*: 0.1 µm – 0.4 µm

**Kupferoberfläche** *Copper surface*

Ra ≤ 2 µm

**Typ. Leiterbahnbreite / -abstand**  
Typ. Width of / spacing between conductors

Leiterbahnbreite / -abstand <i>Width of / spacing between conductors</i>	Cu-Dicke <i>Cu thickness</i>	Min. Pitch <i>Min. Pitch</i>
typ. 0.35 mm	@ 0.127mm	0.7 mm
typ. 0.4 mm	@ 0.2 mm	0.8 mm
typ. 0.45 mm	@ 0.25 mm	0.9 mm
typ. 0.5 mm	@ 0.3 mm	1.0 mm
typ. 0.6 mm	@ 0.4mm	1.2 mm
typ. 0.7 mm	@ 0.5 mm	1.4 mm
typ. 0.8 mm	@ 0.6 mm	1.6 mm



Dieses Dokument dient als Anleitung für die Verwendung von curamik DCB Produkten.  
Alle Angaben ohne Gewähr. Änderungen und alle Rechte vorbehalten.  
*The information contained in this document is intended to assist you in designing with curamik's DBC material.  
All information provided without warranty and subject to change. All rights reserved.*