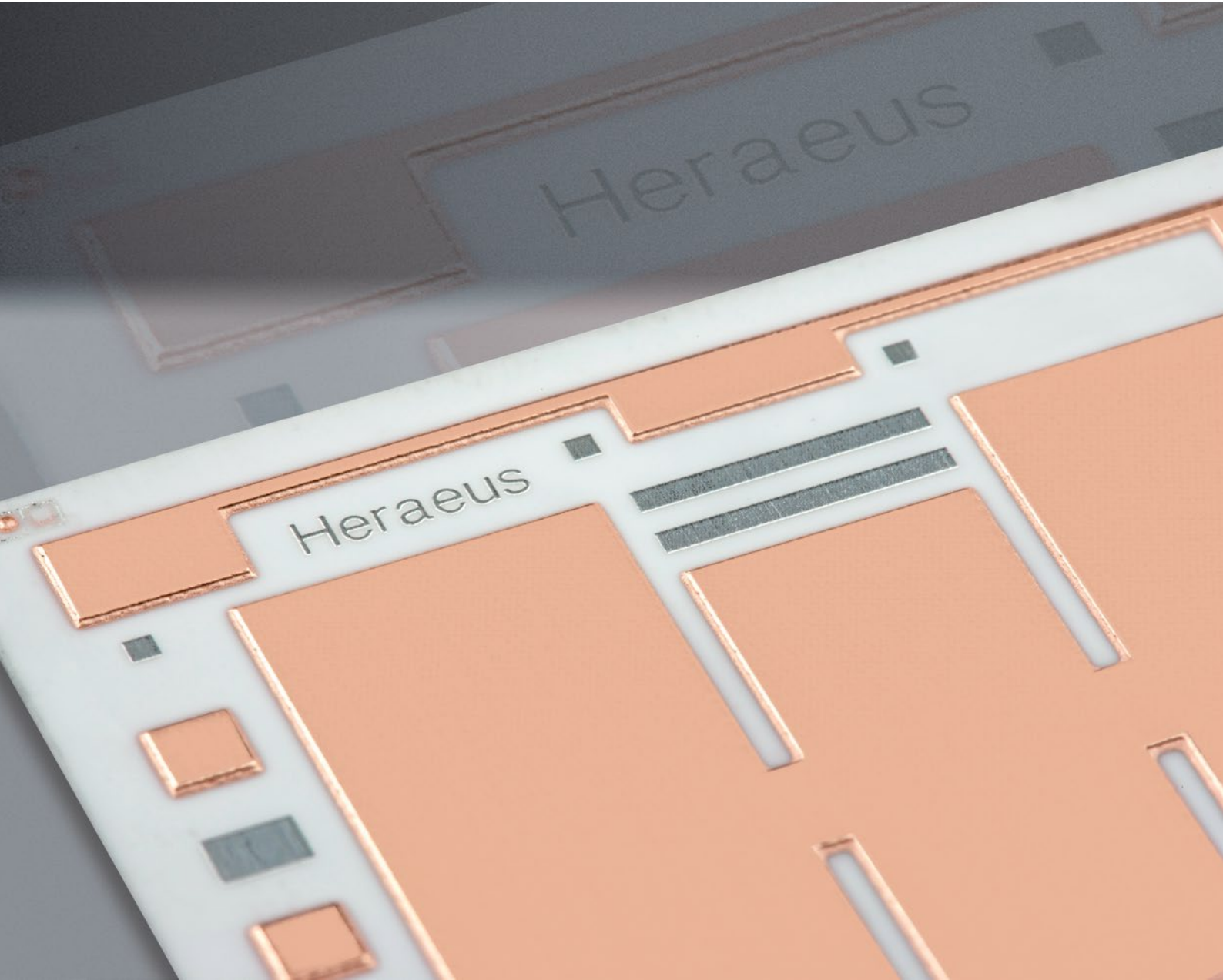


Heraeus



Heraeus Thick Copper Conductor Pastes

Product Overview Thick Copper Conductor Pastes

Product number	C7403C (Adhesion layer) C7404C (Build-up layer)	C7403 (Adhesion layer) C7404C (Build-up layer)	C7463* (Plug Hole)
Substrates recommended	96 % Al ₂ O ₃ ZTA	AlN BeO	AlN 96 % Al ₂ O ₃
Fired film thickness (FFT)	Screen printing: 1 x Print Dry Fire: 20 – 60 µm 5 x Print Dry Fire: 200 – 300 µm Advanced stencil printing: 1 x Print Dry Fire: ≥ 100 µm 3 x Print Dry Fire: ≥ 300 µm	C7403: 3 x Print Dry Fire: 20 – 60 µm C7404C: 3 x Print Dry Fire: 200 – 300 µm	Up to 750 µm diameter
Sheet Resistance	≤ 0.7 mΩ/□ (FFT: 50 µm)	≤ 0.7 mΩ/□ (FFT: 50 µm)	N/A
Solderability	> 95 % coverage with SAC 305 at 245°C, 5 sec dip, RMA flux	> 95 % coverage with SAC 305 at 245°C, 5 sec dip, RMA flux after ENIG plating	N/A
Adhesion [N] (SAC 305)	> 20 / 4 mm ² 48 h / 150°C	> 20 / 4 mm ² 48 h / 150°C	N/A
300 µm Al-wire bonding onto 300 µm FFT	Initial: 100 % wire break 1000 TS Cycles: 100 % wire break	Initial: 100 % wire break 1000 h 85°C / 85 % r. h. 100 % wire break 500 cycles 100 % wire break	N/A
Shear strength [N/mm²] mAgic® silver sintering (sinter pressure 5 MPa, 250°C, IFX-Resistorchip)	> 40	> 40	
ENIG (Ni/Au plating)	Yes	Yes	N/A
Suitable for Cu-galvanic reinforcement	Yes	Yes	N/A
Coverage [cm²/g, 30 µm FFT]	45	42	N/A

SAC 305: Sn96.5 Ag3 Cu0.5

* compatible with C7403 only

N/A = not applicable

The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed. Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

Thick Copper Conductor Advantages

Thermal shock (–40 to +150°C): > 1000 cycles with zero failures on Al₂O₃ and lapped AlN

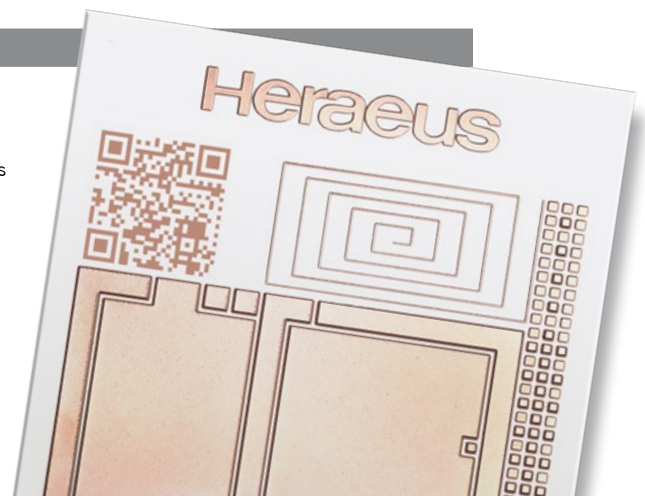
Improved versatility

- Additive screen or stencil printing offers material savings because varied layer thicknesses are possible within the same design

Ability to print over 100 microns fired thickness, with one print-dry-fire cycle

Wire bondable, solderable, plateable

Handle multiple circuits on one panel and singulate afterwards



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