

High-performance Copper Alloy for Lead frames

C7025

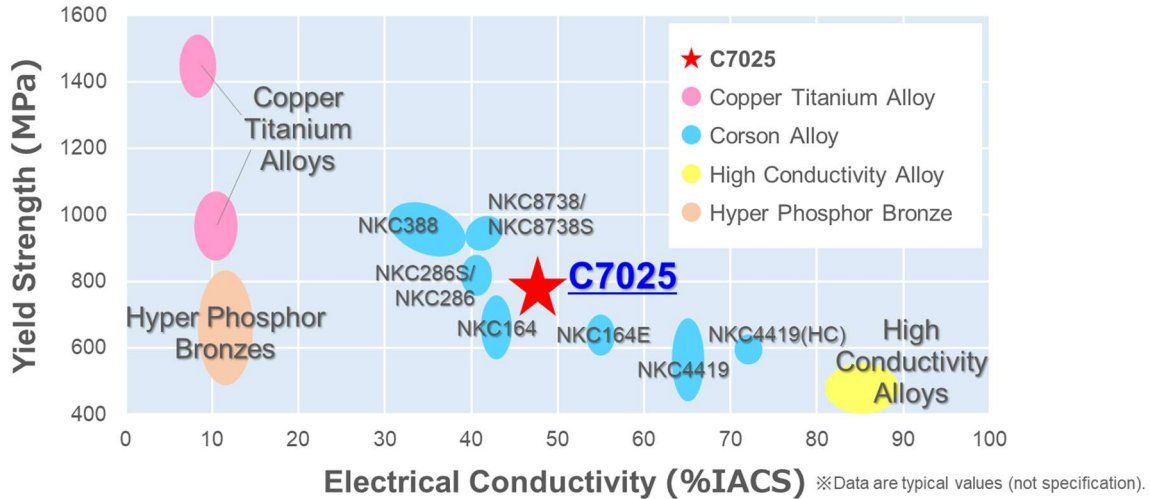
UNS C70250

※Data in this sheet are typical values (not specification).

Features

- C7025 is a copper alloy for high-performance lead frame. We provide the standard material TR02 (1/2H) as a multiple source of C7025, which is produced around the world for use in lead frame.
- The manufacturing process has been improved to ensure that the thermal shrinkage rate and residual stress are always small.
- SH temper is an original JX quality material. Compared to the standard material TR02, SH has higher strength, which supports increased pin counts and miniaturization of semiconductor package.
- C7025 has high heat resistance and can retain its high strength even when heat-treated at high temperatures.

Our Copper Alloy Lineup



Material Properties

1. Chemical Composition

Element	Cu	Ni	Si	Mg
Nominal Value (wt%)	Bal.	3.0	0.65	0.15

2. Physical Properties

	TR02 (1/2H)	SH
Electrical Conductivity (%IACS) (@20°C)	45	48
Specific Resistivity (nΩ·m) (@20°C)	38	36
Thermal Conductivity (W/(m·K))	180	192
Thermal Expansion Coefficient (×10 ⁻⁶ /K) (@20~200°C)	17.6	17.6
Modulus of Elasticity (GPa)	131	120
Specific Gravity	8.82	8.82

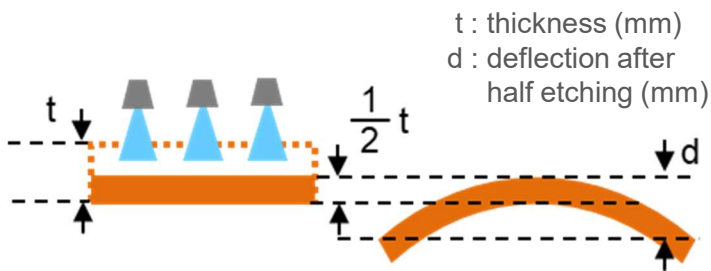
Material Properties

3. Mechanical Properties

Temper	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (Hv)
TR02 (1/2H)	650 (607 - 726)	575	10.0 (≥6.0)	204 (180 - 220)
SH	860 (800 - 950)	820	3.0 (≥1.0)	255 (235 - 275)

4. Residual stress

- As a material for lead frame, C7025 has been optimized in the manufacturing process to achieve near-zero residual stress, contributing primarily to improved flatness in QFN lead frame.



※Direction of sample : Parallel to rolling direction
 ※Spray-etching : FeCl₃aq (47baume), 40°C

Temper	Deflection after half etching (mm)
TR02 (1/2H)	0
SH	0

5. Heat Shrinkage Properties

- C7025 for lead frame has a low dimensional change rate.

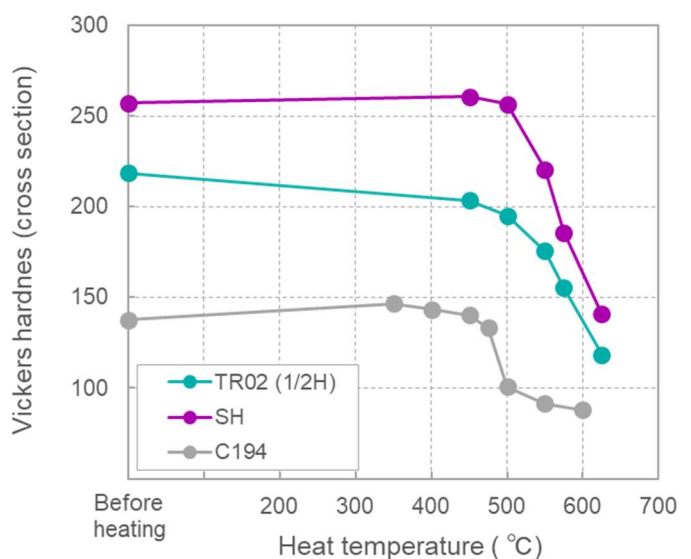
dimensional change after heating of 300°C×30mm

Temper	Heat shrinkage rate (%)
TR02 (1/2H)	- 0.01 ~ + 0.01
SH	- 0.01 ~ + 0.01

※The stretching direction is parallel to the rolling direction.
 ※The stretch direction is indicated by "+" and the shrink direction is indicated by "-".

6. Heat resistance

- C7025 has good heat resistance.

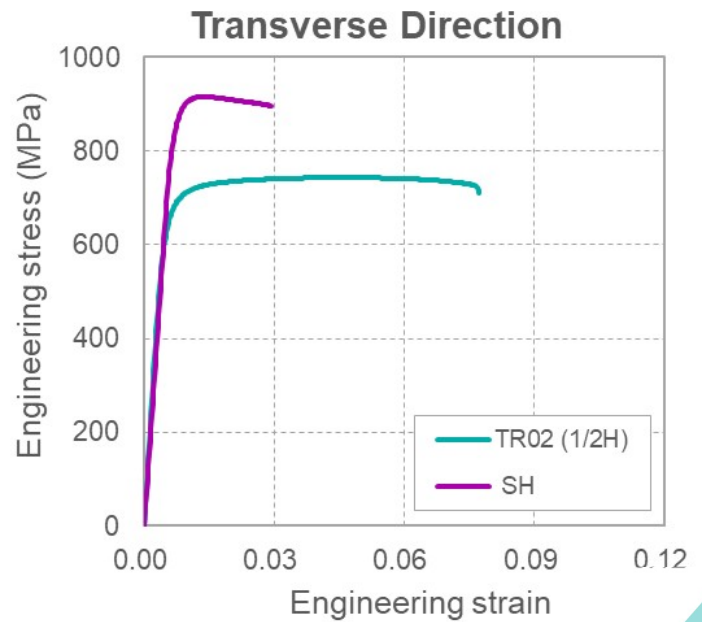
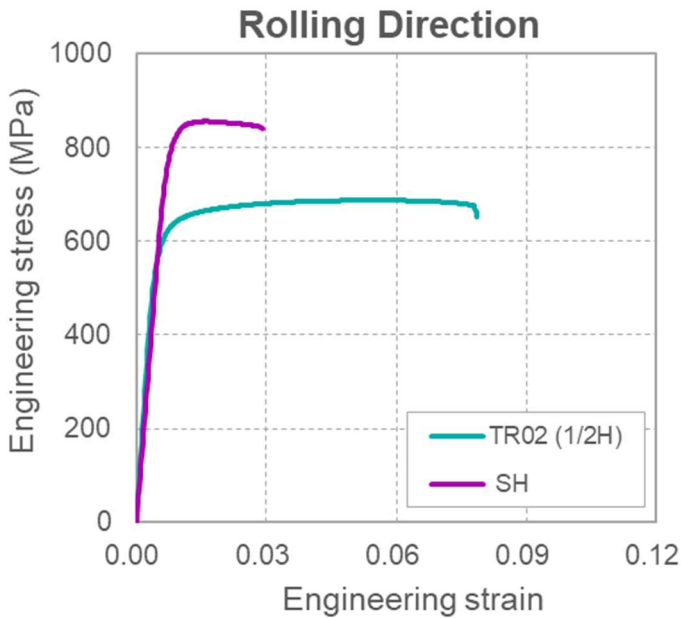


Material Properties

7. Stress-Strain Curve

- Engineering Stress-Strain Curves for each temper of C7025 for lead frame can be downloaded from our official website.

Download : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/excel/C7025_for_lead_frame_S-S_Curve.xlsx



Production Thickness Range

Temper	Thickness Range (mm)
TR02 (1/2H)	0.10 ~ 0.25
SH	0.10 ~ 0.203

- Please contact us for the latest stock status and inquiry of other thicknesses.

Contact Address

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C7025 introduction URL : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/c7025.html



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