

Olin Brass Alloy C7035 is a High Performance Alloy developed jointly by Olin Brass and Wieland-Werke of Germany to meet the increasing material requirements of interconnect designers. C7035 combines good electrical and thermal conductivity with very high strength, excellent stress relaxation resistance, good solderability and plateability. This combination of properties lends the alloy to be used in a wide range of applications including CPU sockets, automotive and electrical connectors, semiconductor leadframes, and mass terminations. The alloy can often be substituted directly for some of the Be-Cu alloys.

Chemical Composition

	Remainder
Copper ¹	
Nickel	1.0-2.5%
Cobalt	1.0-2.0%
Silicon	0.50-1.20%
Iron	0.20% max
Lead	0.05% max
Magnesium	0.04% max
Manganese	0.20% max
Zinc	1.0% max

1. Cu plus Named Elements, 99.5%

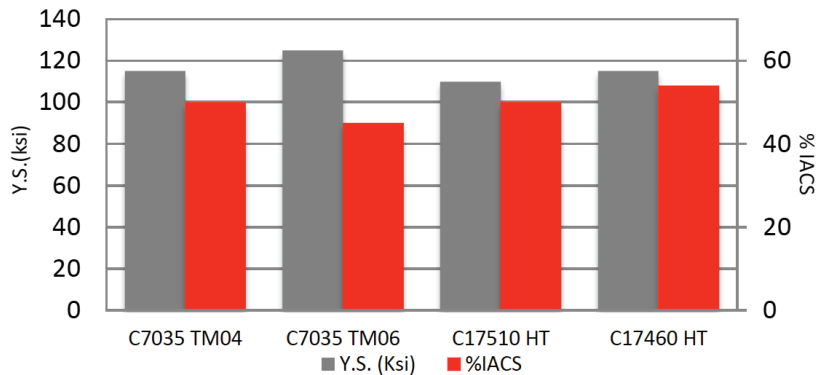


Figure 1: Alloy property comparison for high density connector materials.

Physical Properties

	English Units	Metric Units
Density	0.318 lb/in ³ @ 68°F	8.82 g/cm ³
Thermal Conductivity	115 BTU-ft/ft ² -hr-°F	200 W/m ² °K
Electrical Resistivity	20.7 - 23 ohm circ mils/ft	3.4 - 3.8 microhm-cm
Electrical Conductivity (annealed)	50% IACS* TM02, TM04 45% IACS* TM06	0.27 megamho/cm 0.26 megamho/cm
Modulus of Elasticity	19,000,000 psi	131 kN/mm ²
Coeff. Of Thermal Expansion 68-572°F (20-300°C)	9.8 PPM/°F	17.6 PPM/°C

*International Annealed Copper Standard

Mechanical Properties

Temper ¹	Tensile Strength		Yield Strength ²		% Elongation	Typical 90° Bend Formability GW/BW ³	
	ksi	N/mm ²	ksi	N/mm ²		<.016"(4mm)	<.006"(.15mm)
TM02 ⁴	100-120	690-830	98-113	675-780	5	1.0/1.5	0.8/1.0
TM04	112-130	770-900	109-123	750-850	4	2.0/2.0	1.5/1.5
TM06	122-140	840-970	118-133	810-920	1	2.5/2.5	2.0/2.0

¹ Mechanical properties subject to change. Tensile strength and elongation are for reference only.

² C7035 is manufactured to a yield strength.

³ DATA FOR REFERENCE ONLY. R/T = Minimum Bend Radius/Material Thickness. Higher formability may be realized at lighter gauges and in production tooling.

⁴ Limited to > 0.005"(0.13mm)