C688 (CuZn23Al3.5Co)

KEMPER
DRIVING PROGRESS

Standard Designation

EN not standardized /UNS C68800

Chemical Composition

Cu	Zn [%]	Al [%]	Co [%]
Balance	21.3 - 24.1	3.0 - 3.8	0.25-0.55

Description / Applications

C688 belongs to the copper zinc alloys with additional elements. C688 features an extremely high strength and a good bend formability.
Applications: connectors, IDC contacts

Physical Properties[1)]

Density	8.2 g/cm³	Thermal expansion coefficient	18,2·10^{-6}/K
Electrical conductivity	10.4 m/Ω·mm² = 18 %IACS2)	Modulus of elasticity	115 GPa3)
Thermal conductivity	81 W/m·K		

[1)] Guideline values for soft temper, measured at room temperature

[2)] IACS = International Annealed Copper Standard

[3)] 1 GPa = 1 kN/mm²

Processing information

Weldability	Stress corrosion cracking
Solderability	

Mechanical properties

Temper	Tensile Strength Rm [MPa]	Yield Strength Rp0,2 [MPa]	Elongation A50 [%]	Hardness HV	Bendability[1)]			
					90° r/t[2)]		180° r/t[2)]	
					GW[3)]	BW[4)]	GW[3)]	BW[4)]
R530	530-600	min. 305	min. 30	150-180	0	0	0	0
R600	600-695	min. 435	min. 10	180-220	0	0,5	0,5	1
R670	670-770	min. 565	min. 3	190-230	0,5	2	1,5	2,5
R730	730-825	min. 655	min. 2	200-240	1,0	2	1,5	4
R780	780-875	min. 705	min. 2	210-250	2	-	2,5	-
R850	850-915	min. 765	min. 1	220-260	1,8	-	3	-
R895	min. 895	min. 805	min. 1	min. 235	-	-	-	-

[1)] The r/t values are valid for a strip thickness up to 0.6 mm (without crack). The data refer to rolled-to-temper material and a width of the bending area of 5 mm. V-shape bend test according to ISO 7438

[2)] r = inner radius, t = thickness

[3)] GW = good way

[4)] BW = bad way

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