KHP®102M (CuNiSi)

KEMPER
DRIVING PROGRESS

Standard Designation

EN not standardised /UNS C19005

Chemical Composition

Cu [%]	Ni [%]	Si [%]	Sn [%]	Zn [%]
Balance	1.5	0.3	0.2	0.4

Description / Applications

KHP®102M is a CuNiSi alloy. Tin coatings exhibit exceptionally good adhesion to this material, even at permanently elevated ambient temperatures. KHP®102M combines high electrical conductivity with good mechanical properties. Applications: connectors, contact blades, contact springs, switches, relays, leadframes

Physical Properties[1)]

Density	8.9 g/cm³	Thermal expansion coefficient	$16.8 \cdot 10^{-6}$/K
Electrical conductivity	33 (27[2)]) m/Ω·mm² 57 (46[2)]) % IACS[3)]	Modulus of elasticity	127 GPa[4)]
Thermal conductivity	245 (183[2)]) W/m·K		

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

[2)] for temper R580/R580S

[3)] IACS = International Annealed Copper Standard

[4)] 1 GPa = 1 kN/mm²

Processing information

Weldability	good	Stress corrosion cracking	none
Solderability	good		

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)]
R360	360 - 430	min. 250	min. 12	100 - 130	0	0	0	0
R410	410 - 480	min. 360	min. 10	130 - 150	0	0	0.5	1
R460	460 - 530	min. 430	min. 8	140 - 160	1	1	1	1
R520	520 - 580	min. 490	min. 5	150 - 170	1	1.5	1.5	2
R580	580 - 650	min. 540	min. 8	175 - 205	0.5	1	1	1.5
R580S	580 - 650	min. 520	min. 10	175 - 205	0.5	1	1	1.5

[1)] The r/t values are valid for a strip thickness up to 0.6 mm (without crack). The data refer 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

The details in this datasheet are exclusively meant for general information only. They correspond to the state of knowledge at the time of issue and cannot replace the examination by our customers. Liability cannot be derived from the information.

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