

CLAL-MSX CUPROROR® TL4 Hard, Copper Alloy

Category : Metal , Nonferrous Metal , Copper Alloy

Material Notes:

Alloy especially suited to applications in electronics and electro technology. This doped copper, displays high electrical and thermal conductivity, good mechanical properties and excellent temperature stability. CUPROFOR® is used in the manufacture of high power transistor supports, integrated circuits, electrical contacts and shunts. Applications: Electronics Heat sinks for power transistors CUPROFOR® properties include Thermal conductivity to dissipate heat Temperature resistance permitting Pb/Sn soldering of the chip without loss of mechanical properties Mechanical strength to prevent deformation of heat dissipaters when moulding. CUPROFOR® can play an important part in the manufacture of power transistor heat sinks. For this application, CLAL offer 1/2 hard profile strips (condition TL2) in long length coils which can be delivered :totally or partially Ni coated, with an inlay of Pb/Sn, Ag or other material. Support media for printed circuits This application uses the following properties :temperature resistance, thus permitting the soldering of the integrated circuit of the DIE PAD, without loss of hardness in the support media Outstanding mechanical properties which guarantees the mechanical strength of the LEADS A high deformation capacity gives suitability to form external LEADS. For this application, CLAL, upon request offer long length tapes : a high standard of geometrical and dimensional accuracy a stress relieving treatment to maintain that the LEADS TIPS are coplanar about the DIE PAD. The electro-technical field Electrical contacts Contact mounts Pushbuttons Conductive parts Electrical connections and terminals. Other fields Heat exchangers Seals and washers Dephasing rings. Information provided by CLAL-MSX

Order this product through the following link:

http://www.lookpolymers.com/polymer_CLAL-MSX-CUPROROR-TL4-Hard-Copper-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.90 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	135 - 160	135 - 160	
	80	80	
	@Temperature 500 °C, Time 1800 sec	@Temperature 932 °F, Time 0.500 hour	Isotherm
	120	120	
	@Temperature 500 °C, Time 600 sec	@Temperature 932 °F, Time 0.167 hour	Isotherm
	125	125	
	@Temperature 500 °C, Time 180 sec	@Temperature 932 °F, Time 0.0500 hour	Isotherm
	130	130	
	@Temperature 500 °C, Time 60.0 sec	@Temperature 932 °F, Time 0.0167 hour	Isotherm

Mechanical Properties	138 Metric	138 English	Comments Isotherm
	@Temperature 500 °C, Time 30.0 sec	@Temperature 932 °F, Time 0.00833 hour	
	140	140	
	@Temperature 350 °C, Time 1800 sec	@Temperature 662 °F, Time 0.500 hour	Isotherm
	142	142	
	@Temperature 350 °C, Time 600 sec	@Temperature 662 °F, Time 0.167 hour	Isotherm
	143	143	
	@Temperature 500 °C, Time 10.0 sec	@Temperature 932 °F, Time 0.00278 hour	Isotherm
	144	144	
	@Temperature 350 °C, Time 180 sec	@Temperature 662 °F, Time 0.0500 hour	Isotherm
	145.5	145.5	
	@Temperature 350 °C, Time 60.0 sec	@Temperature 662 °F, Time 0.0167 hour	Isotherm
	146	146	
	@Temperature 350 °C, Time 0.000 sec	@Temperature 662 °F, Time 0.000 hour	Isotherm
	146	146	
	@Temperature 350 °C, Time 10.0 sec	@Temperature 662 °F, Time 0.00278 hour	Isotherm
	146	146	
	@Temperature 350 °C, Time 30.0 sec	@Temperature 662 °F, Time 0.00833 hour	Isotherm
	148	148	
	@Temperature 500 °C, Time 0.000 sec	@Temperature 932 °F, Time 0.000 hour	Isotherm
Tensile Strength, Ultimate	430 - 500 MPa	62400 - 72500 psi	
Tensile Strength, Yield	>= 360 MPa @Strain 0.200 %	>= 52200 psi @Strain 0.200 %	
Elongation at Break	>= 4.0 %	>= 4.0 %	L_O=5.65vS_O
Modulus of Elasticity	140 GPa	20300 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	16.3 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	9.06 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 0.000 - 500 $^{\circ}\text{C}$	@Temperature 32.0 - 932 $^{\circ}\text{F}$	
	16.4 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	9.11 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 0.000 - 250 $^{\circ}\text{C}$	@Temperature 32.0 - 482 $^{\circ}\text{F}$	
	16.7 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	9.28 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 0.000 - 100 $^{\circ}\text{C}$	@Temperature 32.0 - 212 $^{\circ}\text{F}$	
Specific Heat Capacity	0.383 J/g- $^{\circ}\text{C}$	0.0915 BTU/lb- $^{\circ}\text{F}$	
Thermal Conductivity	338 W/m-K	2350 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	1080 $^{\circ}\text{C}$	1980 $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Cobalt, Co	0.080 %	0.080 %	
Phosphorous, P	0.080 %	0.080 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000181 - 0.00000229 ohm-cm	0.00000181 - 0.00000229 ohm-cm	

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