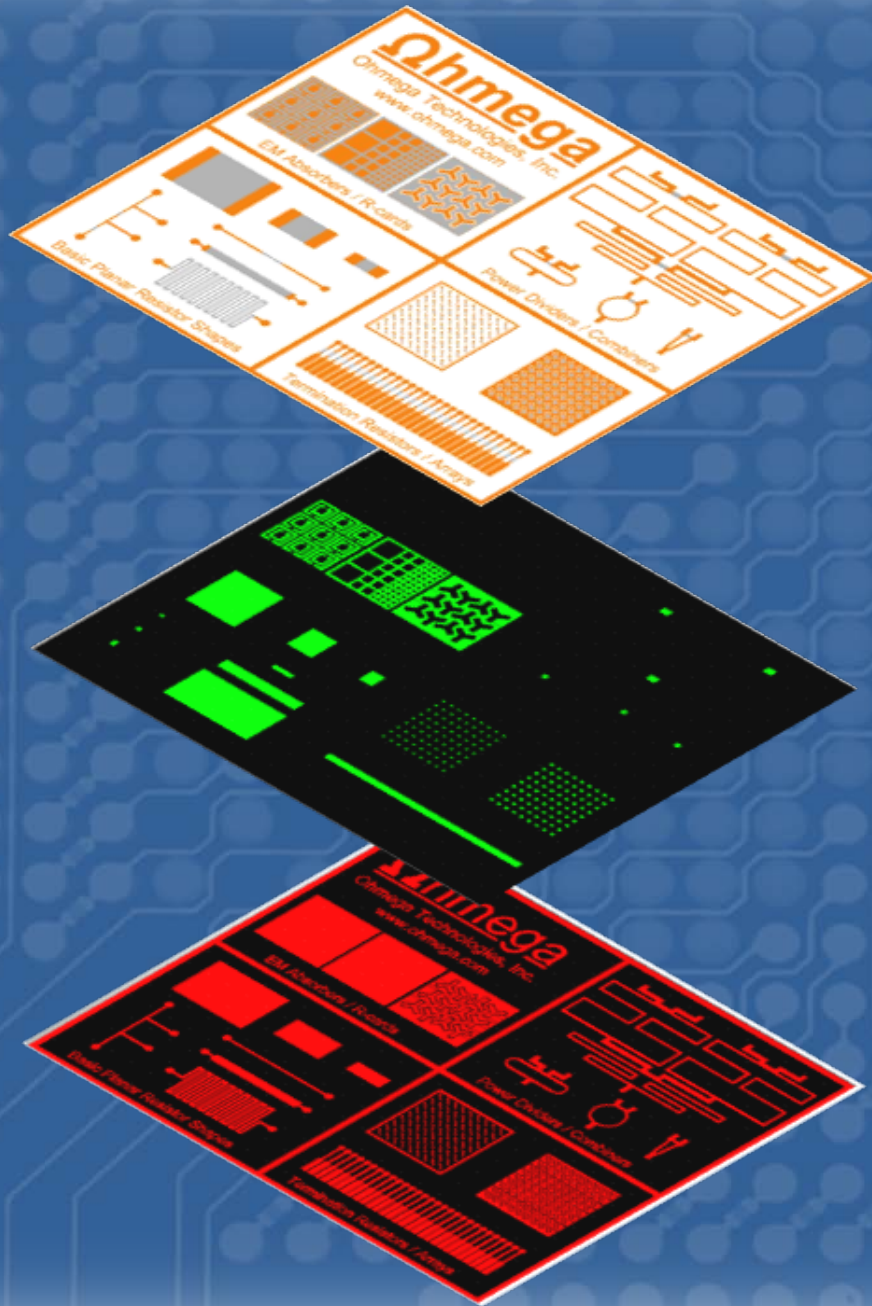


OhmegaPly[®]

Product Selection Guide

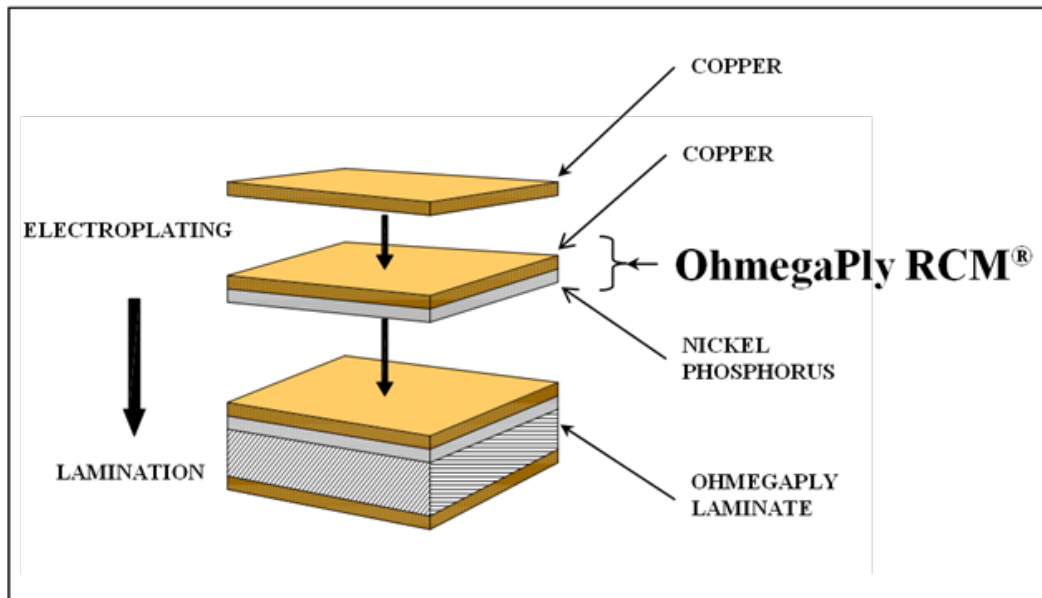


Ohmega Technologies, Inc.

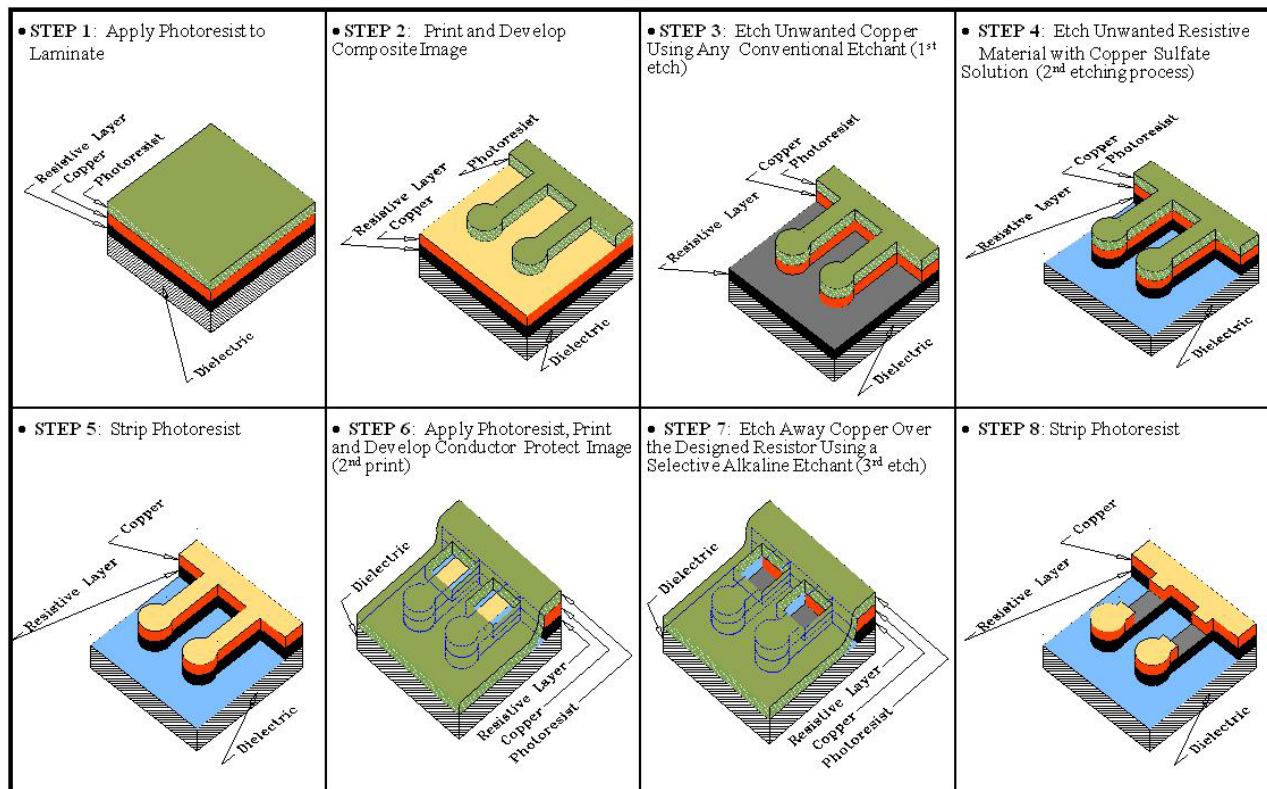
4031 Elenda Street Culver City, CA 90232 Tel: 310-55-4400 www.ohmega.com

OhmegaPly Manufacturing

OhmegaPly[®] is a Nickel Phosphorous (NiP) metal alloy that is electrodeposited on to copper foil. The thin film NiP metal alloy/copper foil combination is called OhmegaPly RCM (Resistor-Conductor Material). The RCM is laminated to a dielectric material, like any other copper foil, and subtractively processed to produce copper circuitry and planar resistors.



OhmegaPly Processing



OhmegaPly Properties

OHMEGAPLY [®] RCM TECHNICAL SPECIFICATIONS								
Sheet Resistivity	10 Ω/□	25 Ω/□	40 Ω/□	50 Ω/□	100Ω/□	250Ω/□	Unit	Remark and Condition
Material Tolerance	+/-5	+/-5	+/-5	+/-5	+/-5	+/-10	%	Sheet Resistivity
Resistance Temperature Characteristic (RTC)	20	50	75	75	100	100	PPM/°C	MIL-STD-202-304 -55°C to 125°C
Maximum Power	0.175	0.100	0.090	0.085	0.070	0.060	W	Values shown for 20 mil x 10 mil (LxW) resistors. Significant improvements can be achieved with changes in resistor and PCB design. Please contact for more information.
ESD *	8000	3500	2500	1900	1100	800	V	Values shown for 20 mil x 10 mil (LxW) resistors. Significant improvements can be achieved with changes in resistor and PCB design. Please contact for more information.
Short Time Overload	0.0	0.0	0.0	0.0	0.0	0.0	Δ R%	MIL-R-10509 Method 4.6.6 2.5 x rated power, 5 sec
Load Life Cycling Test	<0.3 ⁽¹⁾	<5	--	<5	<5	<0.5 ⁽¹⁾	Δ R%	MIL-STD-202-108I 70C, 1.5 hrs On/Off Cycle, 10000 hrs
Current Noise Index	<-16	<-15	<-15	<-15	<-15	<-15	dB	MIL-STD-202-308
Humidity Test	0.5	1.0	1.0	1.0	1.5	2.5	Δ R%	MIL-STD-202-103A 40°C, 95% RH, 240 hrs
Thermal Shock	0.1	0.1	0.5	0.5	0.5	1.5	Δ R%	MIL-STD-202-107B -65°C to 125°C, < 5 min transition, 25 ccl
Hot Oil	--	0.1	0.3	0.3	0.5	0.75	Δ R%	IPC-TM-650 METHOD 2.4.6 260°C, T ₀ = 20°C
Solder Float	0.2	0.5	0.8	0.8	1.0	0.5	Δ R%	MIL-STD-202-210D 260°C, 20 sec
Capacitance	~0.0	~1.0	~1.0	~1.0	~1.0	~1.0	pF	Extracted at 5Hz
Inductance	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	nH	Extracted at 5Hz

* ESD survival levels estimated on ANSI/ESDA/JEDEC JS-001-2012 Human Body Model – Component Level standard. Direct discharge across resistor elements constructed with minimal complexity. Please contact for more details.

⁽¹⁾ Result after 1000 hours

OhmegaPly RCM is RoHS and REACH SVHC Compliant

OhmegaPly RCM Product Matrix

COPPER TYPE	SHEET RESISTIVITY (OHMS PER SQUARE)					
	10	25	40	50	100	250
PT GRADE						
1/2 oz (18 micron)	0.5R10PT/0.5A10PT	0.5A25PT	0.5A40PT	0.5A50PT	0.5A100PT	0.5A250PT
1 oz (35 micron)	1A10PT	1A25PT		1A50PT	1A100PT	1A250PT
TOC GRADE						
1/2 oz (18 micron)		0.5R25TOC		0.5A50TOC	0.5A100TOC	
1 oz (35 micron)		1R25TOC		1A50TOC	1A100TOC	
MTR TOC GRADE						
3/8 oz (12 micron)	12M10TOC	12M25TOC	12M40TOC	12M50TOC	12M100TOC	12M250TOC
1/2 oz (18 micron)	18M10TOC	18M25TOC	18M40TOC	18M50TOC	18M100TOC	18M250TOC

PT grade copper is used for general applications on FR4, Polyimide, Halogen-Free, Lead-Free, and filled dielectrics. Specification for bond strength of ½ ounce copper on Epoxy/Glass is 4.0 lbs/inch.

TOC grade of copper is a lower profile copper used on PTFE substrates for high frequency applications and for fine line etching. Specification for bond strength of ½ ounce copper on Epoxy/Glass is 3.0 lbs/inch.

MTR (Micro Trace Resistor[®]) grade of OhmegaPly on TOC copper is more chemically resistant than standard grades of OhmegaPly. It was developed for use in high density, fine line, and tight tolerance applications.

Sheet Resistivity	Typical Applications
10 Ω/□	Developed for series termination resistors as ORBIT [®] (Ohmega Resistors Built In Trace) and also used for other applications
25 Ω/□	Used primarily for series/parallel termination resistors and power dividers
40 Ω/□	
50 Ω/□	
100 Ω/□	Used primarily as pull-up/pull-down resistors for electronic logic circuits
250 Ω/□	Used primarily for high ohmic applications