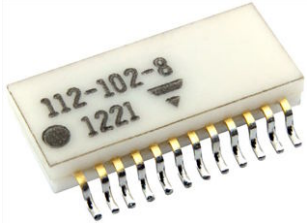
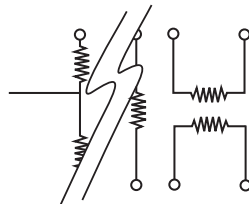


## Sandwich, 25 mil Pitch, Dual In-Line Thin Film Resistor, Surface Mount Network



A dual-in-line monolithic ceramic sandwich in a variety of pin sizes (14 to 24) that allow higher resistance integration than traditional chip and wire molded construction. In addition, tighter resistance tolerances can be obtained over traditional molded networks due to the elimination of molding temperature and stress.

### SCHEMATIC



Custom schematics available  
Please consult factory

### FEATURES

- Lead (Pb)-free gold plated terminals standard
- Gold-to-gold terminations. External leads are attached directly to gold pads on the ceramic substrate by thermo-compression bonding (no internal solder)
- Tighter tolerances than molded standards (0.01 %)
- Ceramic package with no cavity
- Flexibility of lead variations to save PC board space
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS\***  
COMPLIANT

### Note

\* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

### TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	5
	ABSOLUTE	RATIO
TOL.	0.1	0.02

STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Tantalum nitride or passivated nichrome <sup>(1)</sup>	-
Pin/Lead Number	14 to 24	-
Resistance Range	100 Ω to 500 kΩ total	-
TCR: Absolute	± 25 ppm/°C to ± 50 ppm/°C	- 55 °C to + 125 °C
TCR: Tracking	± 5 ppm/°C (typical)	- 55 °C to + 125 °C
Tolerance: Absolute	± 0.05 % to ± 1.0 %	+ 25 °C
Tolerance: Ratio	± 0.02 % to ± 0.1 %	+ 25 °C
Power Rating: Resistor	100 mW	Per element at + 70 °C
Power Rating: Package	500 mW	Maximum at + 70 °C
Stability: Absolute	ΔR ± 0.1 %	2000 h at + 70 °C
Stability: Ratio	ΔR ± 0.03 %	2000 h at + 70 °C
Voltage Coefficient	0.1 ppm/V	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	- 55 °C to + 125 °C	-
Storage Temperature Range	- 55 °C to + 150 °C	-
Noise	< - 30 dB	-
Thermal EMF	0.08 μV/°C	-
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at + 25 °C
Shelf Life Stability: Ratio	ΔR ± 0.002 %	1 year at + 25 °C

### Note

<sup>(1)</sup> Passivated nichrome is not standard film type for CSOM series, consult factory if required

<b>DIMENSIONS AND IMPRINTING</b> in inches and millimeters			
	<b>DIMENSION</b>	<b>INCHES</b>	<b>MILLIMETERS</b>
	A	0.025	0.64
	B (Typ.)	0.010	0.25
	C	0.017 - 0.005 + 0.0010	0.432
	D (Max.)	0.157	3.99
	E	0.239	6.07
	F (Min.)	0.005	0.13
	G (Typ.)	0.006	0.15
	H (Max.)	0.070	1.72
	L (14 Pins)	0.193 ± 0.01	4.90
	L (16 Pins)	0.193 ± 0.01	4.90
	L (18 Pins)	0.341 ± 0.01	8.66
	L (20 Pins)	0.341 ± 0.01	8.66
	L (22 Pins)	0.341 ± 0.01	8.66
L (24 Pins)	0.341 ± 0.01	8.66	

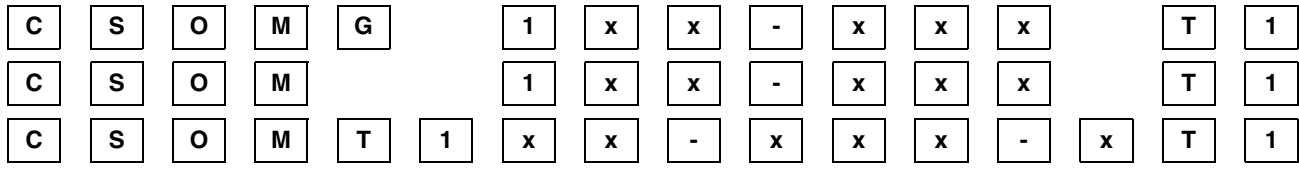
<b>MECHANICAL SPECIFICATIONS</b>	
<b>Resistive Element</b>	Tantalum nitride or passivated nichrome
<b>Body</b>	Ceramic
<b>Lead Coplanarity</b>	± 0.004
<b>Substrate Material</b>	Alumina
<b>Marking Resistance to Solvents</b>	Per MIL-PRF-83401
<b>Terminals</b>	Copper alloy
<b>Plating</b>	Nickel/gold
<b>Model CSOMG - Lead (Pb)-free Standard</b>	Gold plated
<b>Model CSOM - Tin/Lead Solder Coated Option</b>	Sn63
<b>Model CSOMT - Lead (Pb)-free Solder Coated Option</b>	96.5 % Sn, 3.0 % Ag, 0.5 % Cu

<b>ORDERING INFORMATION CHECK LIST</b>	
Special requirements should be identified in advance, but as a minimum, you should have the following information ready.	
<b>ELECTRICAL</b>	<b>MECHANICAL</b>
<ol style="list-style-type: none"> <li>Resistors, by value and tolerance</li> <li>Reference resistor(s) and matching of which resistors to which reference resistors</li> <li>Reference by ratio</li> <li>Absolute temperature coefficient of resistivity</li> <li>Temperature tracking of subordinate resistors to reference resistor(s)</li> <li>Maximum operating voltage</li> <li>Resistor power ratings</li> <li>Operating temperature range</li> </ol>	<ol style="list-style-type: none"> <li>Maximum allowable seated height (from PC board to top of network)</li> <li>Special marking concerns</li> <li>Schematic pin out of package</li> <li>Specify if solder coated leads are required</li> </ol>



**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: CSOMG1xx-xxxT1



GLOBAL MODEL  
(4 or 5 digits)

**CSOMG**  
(Lead (Pb)-free)  
(e4)

**CSOM**  
(Tin lead)

**CSOMT**  
(Lead (Pb)-free)  
(e1)

CUSTOM PART NUMBER  
(7 or 9 digits)

**1xx-xxx**  
**1xx-xxx-x**

PACKAGING

TAPE AND REEL  
**T0** = 100 min., 100 mult  
**T1** = 1000 min., 1000 mult  
**T3** = 300 min., 300 mult  
**T5** = 500 min., 500 mult  
**TF** = Full reel  
**TS** = 100 min., 1 mult

**UF** = TUBED



## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.