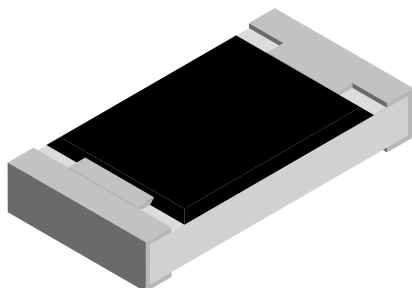




Thick Film Resistor/Capacitor Chip, Surface Mount



FEATURES

- Single component reduces board space and component counts
- X7R dielectric characteristic
- Wrap around termination
- Thick film resistor/capacitor element
- Inner electrode protection
- Flow and reflow solderable
- Automatic placement capability, standard size
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE INCH	SIZE METRIC	RESISTOR CHARACTERISTICS				CAPACITOR CHARACTERISTICS				
			POWER RATING $P_{70^{\circ}\text{C}}$ W	TEMP. COEFF. \pm ppm/ $^{\circ}\text{C}$	RESISTANCE TOLERANCE \pm %	RESISTANCE RANGE Ω	DIELECTRIC	TEMPERATURE COEFFICIENT %	CAP. TOL. \pm %	CAP. VOLTAGE V_{DC}	CAP. RANGE
CRCC1206	1206	3216	0.125	200	5	10 to 1M	X7R	± 15	20	50	10 pF to 270 pF

Notes

RESISTOR

- Operating temperature range: -55°C to $+125^{\circ}\text{C}$
- Technology: Thick film
- Packaging: See appropriate catalog or web page.
- Power rating depends on the maximum temperature at the solder point, the component placement density and the substrate material.

CAPACITOR

- Operating temperature range: X7R -55°C to $+125^{\circ}\text{C}$
- Maximum dissipation factor: 2.5 %

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR	X7R CAPACITOR
Rated dissipation at 70°C	W	0.125	-
Capacitor voltage rating	V	-	50
Dielectric withstanding voltage (5 s, 50 mA charge)	V_{DC}	-	125
Category temperature range	$^{\circ}\text{C}$	$-55 / +125$	$-55 / +125$
Insulation resistance	Ω	$> 10^{10}$	$> 10^{10}$
Weight/1000 pieces	g	0.65	2

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CRCC1206472J220MTF (preferred part numbering format)

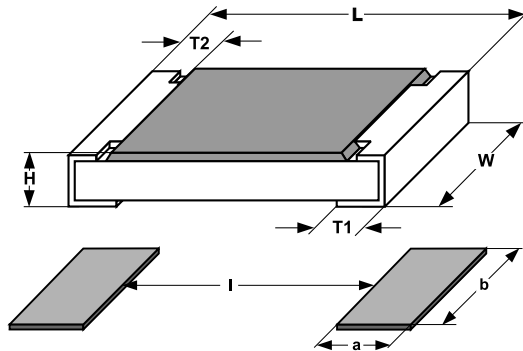
GLOBAL MODEL	RESISTANCE VALUE	RES. TOLERANCE	CAPACITANCE VALUE (pF)	CAP. TOLERANCE	PACKAGING
CRCC1206	2 digit significant figure, followed by a multiplier 100 = 10 Ω 683 = 68 k Ω 105 = 1.0 M Ω	F = ± 1 % G = ± 2 % J = ± 5 %	2 digit significant figure, followed by a multiplier 100 = 10 pF 560 = 56 pF 271 = 270 pF	K = ± 10 % M = ± 20 %	EA = Lead (Pb)-free, T/R (4000 pieces) TF = Tin/Lead, T/R (4000 pieces)

Historical Part Number Example: CRCC1206472J220MR02 (will continue to be accepted)

CRCC1206	472	J	220	M	R02
MODEL	RESISTANCE VALUE	RES. TOLERANCE	CAPACITANCE VALUE	CAP. TOLERANCE	PACKAGING

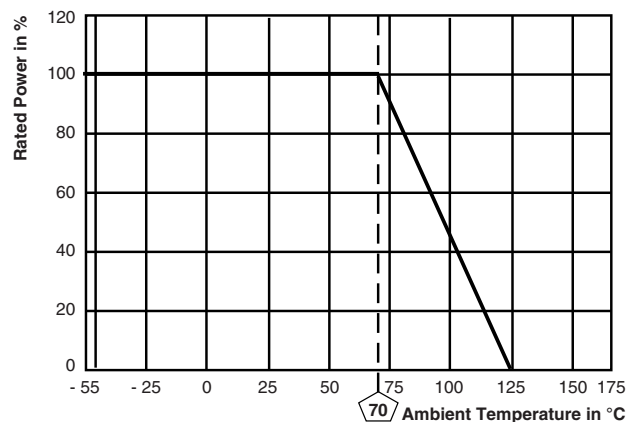
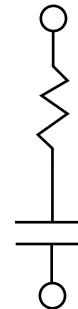
Note

- For additional information on packaging, refer to the Surface Mount Network Packaging document (www.vishay.com/doc?31540).

**DIMENSIONS**

SIZE		DIMENSIONS in millimeters				
INCH	METRIC	L	W	H	T1	T2
1206	3216	3.2 ± 0.15	1.6 ± 0.15	0.55 ± 0.15	0.5 ± 0.25	0.5 ± 0.25

SIZE		SOLDER PAD DIMENSIONS in millimeters					
		REFLOW SOLDERING			WAVE SOLDERING		
INCH	METRIC	a	b	l	a	b	l
1206	3216	0.9	1.7	2.0	1.1	1.7	2.2

DERATING**SCHEMATIC**

PERFORMANCE			
TEST	CONDITIONS OF TEST	TEST RESULTS (TYPICAL TEST LOTS)	
		R	C
Endurance test at 70 °C MIL-Std-202 method 108	1000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"	± (5 % + 2 Ω)	± 20 %
Dielectric withstanding voltage MIL-Std-202 method 301	125 V _{DC} , 5 s, 50 mA charge	No physical damage	
Thermal shock MIL-Std-202 method 107	100 cycles, -55 °C to +125 °C	± (5 % + 2 Ω)	± 20 %
Moisture MIL-Std-202 method 106	Omit steps 7A and B	± (5 % + 2 Ω)	± 20 %
Resistance to soldering heat EIA 575	10 s at 260 °C solder bath temperature	± (5 % + 2 Ω)	± 20 %
High temperature exposure EIA 575	125 °C for 100 h	± (5 % + 2 Ω)	± 20 %
Low temperature operation EIA 575	1 h at -55 °C then 45 min at 50 V	± (5 % + 2 Ω)	± 20 %
Solderability and leaching EIA 575 3.12	Condition C	95 % coverage	

APPLICABLE SPECIFICATIONS

- IPC standards
- EIA 575



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.