



**RoHS 3 (10/10)** compliant MLCC dielectric series:

**X7R (W):** R05W, R07W, R14W, R15W, R18W, R29W, R30W, S41W, S43W, S47W, S48W, S49W, X07W, X14W, X15W, X18W, X41W, X43W, X44W, T07W, T14W, T15W, T18W, T41W, T43W, T48W, T49W, H42W, H47W, H51W, H52W, H54W, H66W, E15W,

**X5R (X):** R07X, R14X, R15X, R18X, S41X, S43X, X14X,

**NP0 (N):** R05N, R07N, R14N, R15N, R18N, R29N, R30N, S41N, S43N, S47N, S48N, S49N, X07N, X14N, X15N, X18N, T07N, T14N, T15N, T18N, T41N, T43N, T48N, T49N, E15N, H42N, H47N, H51N, H54N,

**Automotive AEC-Q200:** +AQ

**JOHANSON DIELECTRICS Certifies** component(s) of part number(s) series listed on this document, when stated as “RoHS 3 (10/10)” are in compliance with RoHS Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, including Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council of 31 March 2015 on the Restriction of the use of certain Hazardous Substances in electrical and electronics equipment (RoHS Directives)

**Except those intentionally plated with Tin/Lead (Sn/Pb) “T” “W” termination code**

202	R18	W	102	K	V	4	E
VOLTAGE	SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	MARKING	PACKING
501 = 500 V 631 = 630 V 102 = 1000 V 202 = 2000 V 302 = 3000 V 402 = 4000 V 502 = 5000 V 602 = 6000 V	R15 = 0805 R18 = 1206 R29 = 1808 S41 = 1210 S43 = 1812 S47 = 2220 S48 = 2225 S49 = 1825	N = NP0 W = X7R	1st two digits are significant; third digit denotes number of zeros. 102 = 1000 pF 104 = 0.10 µF	J = ± 5% K = ± 10% M = ± 20%	V = Ni Barrier with 100% Sn Plating (Matte)  F = Polyterm flexible termination <b>T = SnPb</b>	4 = Unmarked 6 = EIA Code	E = Embossed 7” T = Punched 7”  No code = bulk  Tape specs. per EIA RS481

(When requested)

**JOHANSON DIELECTRICS Certifies** the Chemical (Substance) Checklist and the Materials Declaration breakdown is accurate.

**Table-1 Substances, minimum threshold levels**

#	Substances	Threshold Level
1	Cadmium and Cadmium compounds (Cd)	<100ppm or <0.01%
2	Lead and Lead compounds (Pb)	<1000ppm or <0.1%
3	Mercury and Mercury Compounds (Hg)	<1000ppm or <0.1%
4	Hexavalent chromium compounds (Cr6+)	<1000ppm or <0.1%
5	Polybrominated biphenyls (PBBs)	<1000ppm or <0.1%
6	Polybrominated diphenyl ethers (PBDEs) including decabromobiphenyl ether [DecaBDE]	<1000ppm or <0.1%
7	Bis(2-ethylhexyl) phthalate (DEHP)	<1000ppm or <0.1%
8	Butyl benzyl phthalate (BBP)	<1000ppm or <0.1%
9	Dibutyl phthalate (DBP)	<1000ppm or <0.1%
10	Diisobutyl phthalate (DIBP)	<1000ppm or <0.1%

**More environmental information can be found at these links:**

- JOHANSON DIELECTRICS** web page URL:  
<https://www.johansondielectrics.com/responsibility>
- European Commission** web page URL:  
[http://ec.europa.eu/environment/waste/rohs\\_eee/index\\_en.htm](http://ec.europa.eu/environment/waste/rohs_eee/index_en.htm)

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