

# RF Multi-layer Ceramic Capacitor Part Number Cross Reference

This guide provides the necessary information to derive an equivalent Johanson Technology part number from another vendor's part number.

- SIZE: The EIA designated case size should match original.
- CAPACITANCE: The nominal capacitance value should match original.
- TOLERANCE: The capacitance tolerance expressed as either a percentage ( $\pm 5\%$ ) of the nominal value or as an absolute capacitance value ( $\pm 0.1$  pF) should match or be smaller than original.
- VOLTAGE: Rated DC voltage should match or be greater than the original.
- DIELECTRIC: Vendor descriptions vary but the series listed are equivalent.
- TERMINATION: Vendor descriptions vary but are either plated nickel barrier style or Gold. Termination style should match original.
- PACKAGING: Vendor descriptions and specifications (i.e. tape reel size & quantity) vary.
- MARKING: Should match original (usually not critical).

This guide provides the necessary information to derive an equivalent Johanson Technology part number from another vendor's part number. Johanson Technology Inc. supplies the information contained herein based on the vendor data available at the time of publication and for reference only. Vendors frequently change part number designations and device specifications. Critical characteristics should be evaluated on an in circuit basis and be specified in a source control drawing.

## Competitive Matrix

	High-Q L-Series (RoHS Compliant, {< 4.7 pF})		Highest-Q S-Series (RoHS Compliant)			
	0201		0201	0402	0603	0805
JOHANSON	•		Coming 1Q 2005	•	•	•
AVX	•		•	•	•	•
ATC				•	•	•
MURATA	•		•	•	•	•
TAIYO-YUDEN				•		
VISHAY / VITRAMON					•	•



# RF MLC Part Number Cross Reference

## How To ORDER JOHANSON (S-SERIES)

EXAMPLE - 500R07S330JV4E

<b>500</b>	<b>R07</b>	<b>S</b>	<b>330</b>	<b>J</b>	<b>V</b>	<b>4</b>	<b>E</b>
<b>VOLTAGE</b> 250 = 25 V 500 = 50 V 101 = 100 V 151 = 150 V 201 = 200 V 301 = 300 V 501 = 500 V	<b>SIZE (EIA)</b> R07 = 0402 R14 = 0603 R15 = 0805	<b>DIELECTRIC</b> S = High-Q NPO, RoHS compliant	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> A = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>TERMINATION</b> V = 100% Tin over Nickel Barrier G = Gold over Nickel Barrier	<b>MARKING</b> 4 = Unmarked 6 = EIA "J" Code* *Available on 0805 size only.	<b>PACKAGING</b> Sizes 0402 & 0603: T = 7" Paper Y = 5" Paper Sizes 0805: E = 7" Embossed Z = 5" Embossed

## How To ORDER JOHANSON (L-SERIES)

EXAMPLE - 250R05L150JV4E

<b>250</b>	<b>R05</b>	<b>L</b>	<b>150</b>	<b>J</b>	<b>V</b>	<b>4</b>	<b>E</b>
<b>VOLTAGE</b> 250 = 25 V	<b>SIZE (EIA)</b> R05 = 0201	<b>DIELECTRIC</b> L = High-Q NPO, RoHS compliant	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> A = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>TERMINATION</b> V = 100% Tin over Nickel Barrier	<b>MARKING</b> 4 = Unmarked	<b>PACKAGING</b> T = 7" Paper Y = 5" Paper

## ATC: EXAMPLE - ATC600S330JW200T

JOHANSON - 251R14S330JV4E

<b>ATC600</b>	<b>S</b>	<b>330</b>	<b>J</b>	<b>W</b>	<b>200</b>	<b>T</b>
<b>ATC Style</b>	<b>SIZE (EIA)</b> L = 0402 S = 0603 F = 0805	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> B = ± 0.10 pF C = ± 0.25 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>TERMINATION</b> W = Solderable Tin over Nickel	<b>VOLTAGE</b> 500 = 50 V 100 = 100 V 200 = 200 V	<b>PACKAGING</b> T = Tape and Reel (7") Chip Tape Pcs/ Size Pitch Reel 0402 2mm 10K 0603 4mm 4K 0805 4mm 4K

## ATC: EXAMPLE - ATC650S330JW200T

JOHANSON - 251R14S330JV4E (SUPERIOR SUBSTITUTE)

<b>ATC650</b>	<b>S</b>	<b>330</b>	<b>J</b>	<b>W</b>	<b>200</b>	<b>T</b>
<b>ATC Style</b>	<b>SIZE (EIA)</b> L = 0402 S = 0603 F = 0805	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> B = ± 0.10 pF C = ± 0.25 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>TERMINATION</b> W = Solderable Tin over Nickel	<b>VOLTAGE</b> 500 = 50 V 100 = 100 V 200 = 200 V	<b>PACKAGING</b> T = Tape and Reel (7") Chip Tape Pcs/ Size Pitch Reel 0402 2mm 10K 0603 4mm 4K 0805 4mm 4K

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**AVX: EXAMPLE - 0201YJ3R9BBWTR**

**JOHANSON - 250R05L3R9BV4E**

<b>0201</b>	<b>Y</b>	<b>J</b>	<b>330</b>	<b>J</b>	<b>B</b>	<b>W</b>	<b>TR</b>
<b>SIZE (EIA)</b> 0201 0402 0603 0805	<b>VOLTAGE</b> Z = 10 V Y = 16 V 3 = 25 V	<b>DIELECTRIC</b> J = 0±30ppm K = 0±60ppm, (-55° to +125°C)	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>SPECIFICATION</b> B = Accu-P	<b>TERMINATION</b> W = Solder Plate / Ni T = High-Temp Solder Plate/Ni	<b>PACKAGING &amp; MARKING</b> TR = Tape & Reel

Note: Accu-P parts are thin film, while JTI S-Series parts are thick film.

**AVX: EXAMPLE - 06035J330JBWTR**

**JOHANSON - 251R14S330JV4E**

<b>0603</b>	<b>5</b>	<b>J</b>	<b>330</b>	<b>J</b>	<b>B</b>	<b>W</b>	<b>TR</b>
<b>SIZE (EIA)</b> 0201 0402 0603 0805	<b>VOLTAGE</b> Z = 10 V Y = 16 V 3 = 25 V 5 = 50 V 1 = 100 V	<b>DIELECTRIC</b> J = 0±30ppm K = 0±60ppm, (-55° to +125°C)	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>SPECIFICATION</b> A = Accu-F B = Accu-P	<b>TERMINATION</b> W = Solder Plate / Ni T = High-Temp Solder Plate/Ni	<b>PACKAGING &amp; MARKING</b> TR = Tape & Reel

Note: Accu-P/F parts are thin film, while JTI S-Series parts are thick film.

**AVX: EXAMPLE - 06031U330JATME**

**JOHANSON - 251R14S330JV4E**

<b>0603</b>	<b>1</b>	<b>U</b>	<b>330</b>	<b>J</b>	<b>A</b>	<b>T</b>	<b>M</b>	<b>E</b>
<b>SIZE (EIA)</b> 0603 0805 1210	<b>VOLTAGE</b> 5 = 50 V 1 = 100 V 2 = 200 V	<b>DIELECTRIC</b> U = Ultra Low ESR	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>FAILURE RATE</b> A = N/A	<b>TERMINATION</b> T = Solder Plate / Ni	<b>PACKAGING &amp; MARKING</b> M = 7" Reel Embossed/Marked R = 13" Reel Embossed/Marked B = Bulk/Marked	<b>SPECIAL CODE</b> E = Standard



# RF MLC Part Number Cross Reference

## MURATA: EXAMPLE - GJ60335C1E4R7JB01E

## JOHANSON - 250R05S4R7BV4E

<b>GJ</b>	<b>6</b>	<b>03</b>	<b>3</b>	<b>5C</b>	<b>1E</b>	<b>200</b>	<b>J</b>	<b>B01</b>	<b>E</b>
PRODUCT I.D. = GJ	SERIES 6 = Low Dissipation Type	DIMENSION 03 = EIA 0201	THICKNESS 3 = 0.3 mm	TEMP. CHAR. 5C = COG (NP0)	VOLTAGE 1E = 25 V	CAPACITANCE 1R0 = 1 pF 200 = 20 pF	TOLERANCE B = +/- 0.1 pF C = +/- 0.25 pF D = +/- 0.5 pF G = +/- 2% J = +/- 5% K = +/- 10%	BASE METAL OF INTERNAL ELECTRODE B01 = Copper	PACKAGING E = Paper Tape

## MURATA: EXAMPLE - GJ61555C1H200JB01E

## JOHANSON - 500R07S200JV4E

<b>GJ</b>	<b>6</b>	<b>15</b>	<b>5</b>	<b>5C</b>	<b>1H</b>	<b>200</b>	<b>J</b>	<b>B01</b>	<b>E</b>
PRODUCT I.D. = GJ	SERIES 6 = Low Dissipation Type M = High Frequency Type	DIMENSION 15 = EIA 0402	THICKNESS 5 = 0.5 mm	TEMP. CHAR. 5C = COG (NP0)	VOLTAGE 1H = 50 V	CAPACITANCE 1R0 = 1 pF 200 = 20 pF	TOLERANCE B = +/- 0.1 pF C = +/- 0.25 pF D = +/- 0.5 pF G = +/- 2% J = +/- 5% K = +/- 10%	BASE METAL OF INTERNAL ELECTRODE B01 = Copper	PACKAGING E = Paper Tape

## MURATA: EXAMPLE - GQM1885C2A100JB01E

## JOHANSON - 251R14S100JV4E

<b>*GQ</b>	<b>M</b>	<b>18</b>	<b>8</b>	<b>5C</b>	<b>2A</b>	<b>100</b>	<b>J</b>	<b>B01</b>	<b>E</b>
PRODUCT I.D. = GQ	SERIES M = High Frequency Type	DIMENSION 18 = EIA 0603 21 = EIA 0805	THICKNESS 8 = 0.8 mm 9 = 0.85 mm A = 1.0 mm B = 1.25 mm	TEMP. CHAR. 5C = COG (NP0)	VOLTAGE 2A = 100 V 2D = 200 V 2E = 250 V	CAPACITANCE 1R0 = 1 pF 100 = 10 pF	TOLERANCE B = +/- 0.1 pF C = +/- 0.25 pF D = +/- 0.5 pF G = +/- 2% J = +/- 5% K = +/- 10%	BASE METAL OF INTERNAL ELECTRODE B01 = Copper	PACKAGING E = Paper Tape

\* Previously specified as the GRQ706 (0603) and GRQ708 (0805) series.

## MURATA: EXAMPLE - GRH708COG330J200XXXPB (ERA21 SERIES)

## JOHANSON - 251R15S330JV4E

<b>GRH</b>	<b>708</b>	<b>COG</b>	<b>330</b>	<b>J</b>	<b>200</b>	<b>XXX</b>	<b>PB</b>
STYLE GRH = High Freq. Type	SIZE (EIA) 708 = 0805	DIELECTRIC COG = 0±30 ppm/°C	CAPACITANCE 1st two digits are significant; third digit denotes number of zeros, R = decimal 010 = 1.0 pF 1R5 = 1.5 pF 330 = 33 pF 471 = 470 pF	TOLERANCE C = ± 0.25 pF D = ± 0.50 pF J = ± 5%	VOLTAGE 50 = 50 V 100 = 100 V 200 = 200 V	SPECIAL Murata Control No.	PACKAGING PT = Tape PB = Bulk

# RF MLC Part Number Cross Reference

**TAIYO YUDEN: EXAMPLE - EVK105CH4R3BW**

**JOHANSON - 500R07S4R3BV4E**

<b>E</b>	<b>V</b>	<b>K</b>	<b>105</b>	<b>CH</b>	<b>4R3</b>	<b>B</b>	<b>W</b> - <b>F</b>	
<b>VOLTAGE</b> E = 16 V	<b>SERIES</b> Hi Freq. Caps	<b>TERMINATION</b> K = Solder Plated	<b>CASE SIZE</b> 105 = 0402	<b>DIELECTRIC</b> CH = NPO  RH = -220±60 (ppm/°C)	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 010 = 1.0 pF 4R3 = 4.3 pF	<b>TOLERANCE</b> Cap. = 0.3-2.0pF: B = ± 0.10 pF  Cap. > 2.0 pF J = ± 5%	<b>THICKNESS</b> W = 0.5mm	<b>PACKAGING</b> F = Tape&Reel B = Bulk Pack

The "RH" series temperature characteristic is -220±60 ppm/°C versus JTI High-Q NPO = 0±30ppm/°C. This difference should always be called to the attention of the customer when quoting or discussing a substitute.

**VISHAY/VITRAMON: EXAMPLE - VJ0805Q330JXCAT**

**JOHANSON: 251R15S330JV4E**

<b>VJ</b>	<b>0805</b>	<b>Q</b>	<b>330</b>	<b>J</b>	<b>X</b>	<b>C</b>	<b>A</b>	<b>T</b>
<b>STYLE</b>	<b>SIZE (EIA)</b> 0603 0805 1206 1210	<b>DIELECTRIC</b> Q = High-Q	<b>CAPACITANCE</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal 1R0 = 1.0 pF 330 = 33 pF 471 = 470 pF	<b>TOLERANCE</b> C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2% J = ± 5% K = ± 10%	<b>TERMINATION</b> X = Nickel / 100% Tin Plate	<b>VOLTAGE</b> A = 50 V B = 100 V C = 200 V	<b>MARKING</b> A = Unmarked M = Marked	<b>TAPE</b> T= 7" Plastic C=7" Paper R= 11" Plastic P=11" Paper B= Bulk Pack

