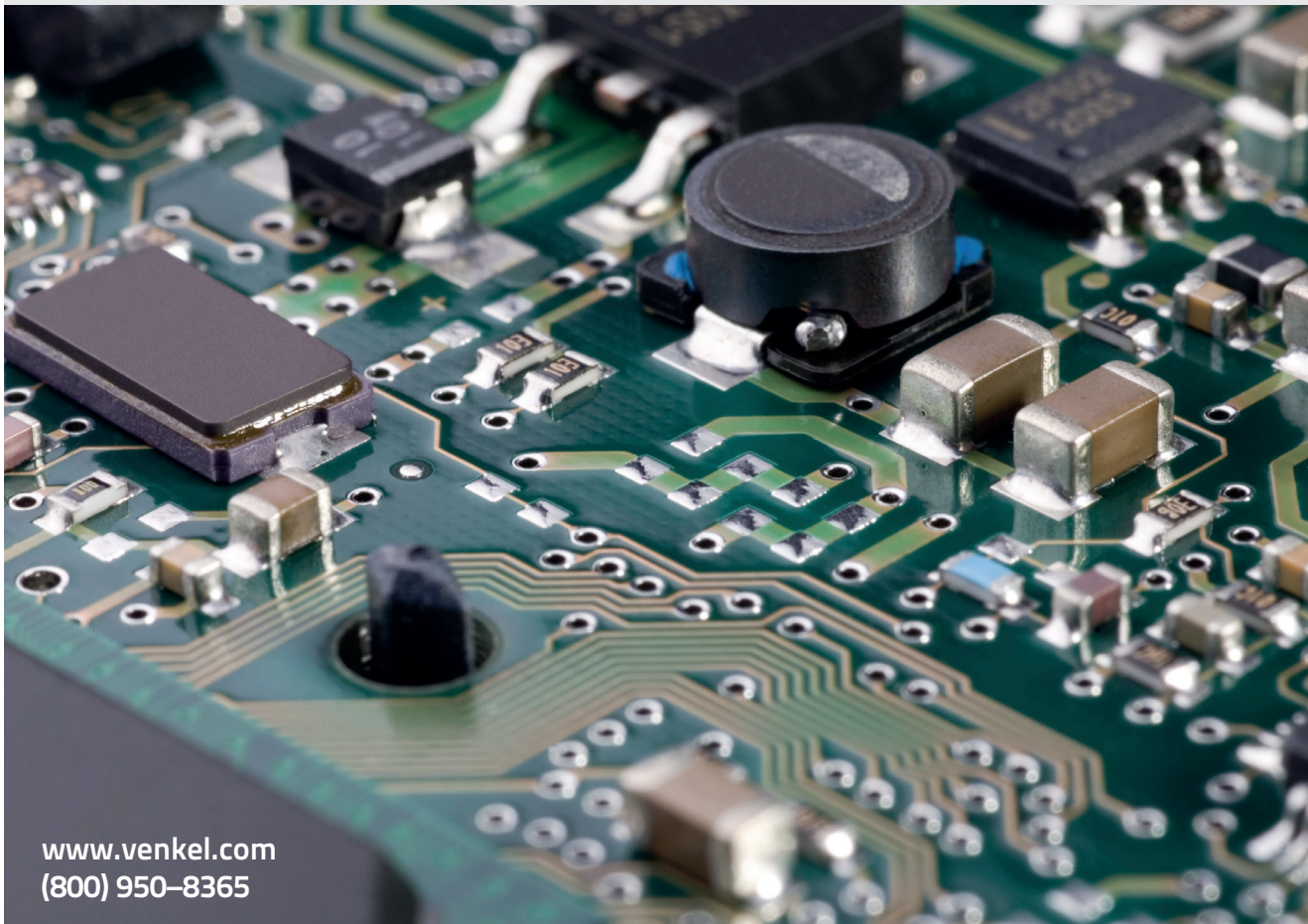
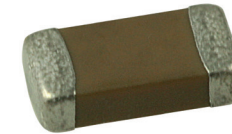




VENKEL LTD.

GENERAL PURPOSE CERAMIC CAPACITORS



C SERIES

Ceramic Capacitors are made up of a monolithic structure which provides excellent long term reliability, and come in a wide variety of case sizes and dielectrics.

PRODUCT CROSSES TO:

Manufacturer	Series
AVX	Ceramic Capacitors
Cal-Chip	GMC
Johanson Dielectronics	201
Kemet	C
Murata	GRM
Nic	NMC
Novacap	0805
Panasonic	ECJ
Samsung	CL
Taiyo Yuden	M
TDK	C
Vishay / Vitramon	VJ
Walsin	0805
Yageo	CC

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AVX

AVX PART NUMBER: 08052C103KAT2A CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

AVX Part Number Structure

0805	5	C	103	K	A	T	2	A
SIZE (EIA)	VOLTAGE	DIELECTRIC	CAPACITANCE	TOLERANCE	FAILURE RATE	TERMINATION	PACKAGING & MARKING	SPECIAL CODE
0603	6 = 6.3V	A = COG/NPO	1st two digits are significant;	B = ± 0.1 pF	A = N/A	T = 100%	1 = 7" Reel Embossed/Unmarked	A = Standard
0805	Z = 10V	C = X7R	third digit denotes number	C = ± 0.25 pF		matte Tin	2 = 7" Reel Paper/Unmarked	
1206	Y = 16V		of zeros,	D = ± 0.50 pF		(Sn) over	3 = 13" Reel Embossed/Unmarked	
1210	3 = 25V		R = decimal	F = $\pm 1\%$		Nickel	4 = 13" Reel Paper/Unmarked	
1808	5 = 50V		1R0 = 1.0pF	G = $\pm 2\%$		1 =	M = 7" Reel Embossed/Marked	
1812	1 = 100V		120 = 12pF	J = $\pm 5\%$		Palladium	N = 7" Reel Paper/Marked	
1825			471 = 470pF	K = $\pm 10\%$		Silver	R = 13" Reel Embossed/Marked	
2220			102 = 1,000pF	M = $\pm 20\%$			S = 13" Reel Paper/Marked	
2225			273 = 0.027 μ F	N = $\pm 30\%$			9 = Bulk/Unmarked	
			474 = 0.47 μ F				B = Bulk/Marked	
			105 = 1.0 μ F					

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	dium Silver	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	G = Gold over	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Nickel	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$	Pb = 90% Tin	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	(Sn)/10%	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Lead (Pb)	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.	Termination	

*For exact cross and confirmation of ESR, please consult our catalog.



CAL-CHIP

CAL-CHIP PART NUMBER: GMC21X7R104K50NT-LF CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

CAL-CHIP Part Number Structure

GMC 21 X7R 104 K 50 N T LF

SERIES	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING	OPTIONAL IDENTIFIER
	01 = 01005	CG = COG	1st two digits are significant;	B = ± 0.10pF	4R0 = 4V	N = 100% matte	T = Tape and	LF = Optional Identifier to
	02 = 0201	X7R = X7R	third digit denotes number	C = ± 0.25pF	6R3 = 6.3V	Tin (Sn) over Nickel	Reel	designate the part is Lead
	04 = 0402	X5R = X5R	of zeros.	D = ± 0.50pF	10 = 10V			Free
	10 = 0603	Y5V = Y5V	R = decimal	F = ± 1%	16 = 16V			
	21 = 0805	Z5U = Z5U	1R0 = 1.0pF	G = ± 2%	25 = 25V			
	31 = 1206		120 = 12pF	J = ± 5%	50 = 50V			
	32 = 1210		471 = 470pF	K = ± 10%	100 = 100V			
	43 = 1812		102 = 1,000pF	M = ± 20%				
	45 = 1825		273 = 0.027µF	Z = +80/-20%				
	55 = 2220		474 = 0.47µF					
	57 = 2225		105 = 1.0µF					

Venkel Part Number Structure

C 0805 X7R 500 104 K N E

CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = ± 1%	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = ± 2%	P = Palladium Silver	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = ± 5%	G = Gold over	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = ± 10% M = ± 20%	Nickel	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = ± 30%	Pb = 90% Tin	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	(Sn)/ 10%	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Lead (Pb)	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values	Termination	
					below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



JOHANSON DIELECTRICS

JOHANSON DIELECTRICS PART NUMBER: 201R15W103KV4T CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Johanson Dielectrics Part Number Structure

500	R15	W	104	K	V	4	T
VOLTAGE	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	FAILURE RATE	MARKING	PACKAGING
100 = 10V	R14 = 0603	N = COG/NPO	1st two digits are significant;	*C = ± 0.25 pF	V = 100% matte Tin	4 = Unmarked	E = 7" Embossed
160 = 16V	R15 = 0805	W = X7R	third digit denotes number	*D = ± 0.50 pF	(Sn) over Nickel	6 = EIA "J" Code*	T = 7" Paper
250 = 25V	R18 = 1206		of zeros.	F = $\pm 1\%$	P = Palladium Silver	*Not available on 0603 sizes	U = 13" Embossed
500 = 50V	R29 = 1808		R = decimal	G = $\pm 2\%$			R = 13" Paper
101 = 100V	S43 = 1812		1R0 = 1.0pF	J = $\pm 5\%$			None = Bulk Pack
	S41 = 1210		120 = 12pF	K = $\pm 10\%$			
	S49 = 1825		471 = 470pF	M = $\pm 20\%$			
	S48 = 2225		102 = 1,000pF	N = $\pm 30\%$			
			273 = 0.027 μ F	* For values			
			474 = 0.47 μ F	less than			
			105 = 1.0 μ F	10pF only			

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	P = Palladium Silver	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	G = Gold over	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Nickel	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$	Pb = 90% Tin	Tape (13" Reel)
	2220		630 = 63 VDCW	"R" denotes	Z = +80 - 20%	(Sn)/ 10%	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Lead (Pb)	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values	Termination	
					below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



KEMET

KEMET PART NUMBER: C0805C104K5RACTU CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Kemet Part Number Structure

C **0805** **C** **104** **K** **5** **R** **A** **C** **TU**

CERAMIC	SIZE (EIA)	SERIES	CAPACITANCE	TOLERANCE	VOLTAGE	DIELECTRIC	FAILURE RATE	TERMINATION	PACKAGING
	0201	C = Standard	1st two digits are significant;	B = ± 0.10 pF	7 = 4V	P = X5R	A = Standard	C = 100%	TU = 7" Reel Unmarked
	0402		third digit denotes number	C = ± 0.25 pF	9 = 6.3V	G = COG/NP0		matte	TM = 7" Reel Marked
	0603		of zeros.	D = ± 0.50 pF	8 = 10V	R = X7R		Tin (Sn) over	Blank = Bulk
	0805		R = decimal	F = $\pm 1\%$	4 = 16V	U = Z5U		Nickel	
	1206		1R0 = 1.0pF	G = $\pm 2\%$	3 = 25V	V = Y5V			
	1210		120 = 12pF	J = $\pm 5\%$	5 = 50V				
	1808		471 = 470pF	K = $\pm 10\%$	1 = 100V				
	1812		102 = 1,000pF	M = $\pm 20\%$					
	1825		273 = 0.027 μ F	Z = +80/-20%					
	2220		474 = 0.47 μ F						
	2225		105 = 1.0 μ F						

Venkel Part Number Structure

C **0805** **X7R** **500** **104** **K** **N** **E**

CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$	(Sn)/10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



MURATA PART NUMBER: GRM21BR71H104KA01L CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Murata Part Number Structure

GR	M	21	B		R7	1H	104		K	A01	L
PRODUCT ID	SERIES	SIZE (EIA)	THICKNESS		DIELECTRIC	VOLTAGE	CAPACITANCE		TOLERANCE	SPECIAL CODE	PACKAGING
	M = 100% matte Tin (Sn) over Nickel Termination G = Palladium Silver Termination	03 = 0201 15 = 0402 18 = 0603 21 = 0805 31 = 1206 32 = 1210 42 = 1808 43 = 1812 58 = 2220	2 = 0.2mm 3 = 0.3mm 5 = 0.5mm 6 = 0.6mm 7 = 0.7mm 8 = 0.8mm 9 = 0.85mm A = 1.0mm B = 1.25mm C = 1.6mm D = 2.0mm	E = 2.5mm F = 3.2mm M = 1.15mm N = 1.35mm Q = 1.5mm R = 1.8mm S = 2.8mm X = Factory	5C = COG/NPO R6 = X5R R7 = X7R F5 = Y5V E4 = Z5U	0G = 4V 0J = 6.3V 1A = 10V 1C = 16V 1E = 25V 1H = 50V 2A = 100V	1st two digits are significant; third digit denotes number of zeros. R = decimal 1R0 = 1.0pF 120 = 12pF 471 = 470pF 102 = 1,000pF 273 = 0.027μF 474 = 0.47μF 105 = 1.0μF		B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% Z = +80/-20%	L = 7" Plastic D = 7" Paper K = 13" Plastic J = 13" Paper E = 7" Special F = 13" Special B = Bulk	

Venkel Part Number Structure

C		0805	X7R	500		104	K		N		E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE		CAPACITANCE	TOLERANCE CODE		TERMINATION		PACKAGING	
	01005 0201 0402 0603 0805 1206 1210 1812 2220 2221	COG X7R X5R Y5V Z5U	1st two digits are significant followed by number of zeroes. 4R0 = 4.0VDCW 6R3 = 6.3 VDCW 100 = 10 VDCW 160 = 16 VDCW 250 = 25 VDCW 500 = 50 VDCW 630 = 63 VDCW 101 = 100 VDCW		1st two digits are significant, followed by number of zeroes. Example: 101 = 100pF 'R' denotes decimal: 6R8 = 6.8 pF	*B = ± 0.1 pF *C = ± 0.25 pF *D = ± 0.5 pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% N = ± 30% Z = +80 - 20% P = +100 - 0% * For capacitance values below 10 pF only.		N = 100% matte Tin(Sn) over Nickel P = Palladium Silver G = Gold over Nickel Pb = 90% Tin (Sn)/ 10% Lead (Pb) Termination		D = Paper Tape (10" Reel) E = Embossed Tape (7" Reel) P = Paper Tape (7" Reel) U = Embossed Tape (13" Reel) R = Paper Tape (13" Reel)	

*For exact cross and confirmation of ESR, please consult our catalog.



NIC

NIC PART NUMBER: NMC0805X7R104K50TRPF CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

NIC Part Number Structure

NMC 0805 X7R 104 K 50 TRP F

STYLE	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	PACKAGING	MARKING
	0201	COG/NPO	1st two digits are significant;	B = ± 0.10 pF	4 = 4V	TRP = Paper Tape / Plastic Reel	M = Marked
	0402	X7R	third digit denotes number	C = ± 0.25 pF	6.3 = 6.3V	TRPLP = Plastic Tape / Plastic Reel	None =
	0603	X5R	of zeros.	D = ± 0.50 pF	10 = 10V		Unmarked
	0805	Z5U	R = decimal	F = ± 1%	16 = 16V		
	1206	Y5V	1R0 = 1.0pF	G = ± 2%	25 = 25V		
	1210		120 = 12pF	J = ± 5%	50 = 50V		
	1808		471 = 470pF	K = ± 10%	100 = 100V		
	1812		102 = 1,000pF	M = ± 20%			
	1825		273 = 0.027µF	Z = +80/-20%			
	2225		474 = 0.47µF				
			105 = 1.0µF				

Venkel Part Number Structure

C 0805 X7R 500 104 K N E

CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = ± 1%	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = ± 2%	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = ± 5%	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = ± 10% M = ± 20%	Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = ± 30%	(Sn)/ 10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values		
					below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



NOVACAP

NIC PART NUMBER: 0805B104K500NT CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Novacap Part Number Structure

0805 B 104 K 500 N T

SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING	MARKING
0201	N = COG/NPO	1st two digits are significant;	B = ± 0.10 pF	100 = 100V	N = 100% matte Tin (Sn) over Nickel	T = 7" Paper	M = Marked
0402	B = X7R	third digit denotes number	C = ± 0.25 pF	160 = 16V	P = Palladium Silver	N = Bulk	None = Unmarked
0603	W = X5R	of zeros.	D = ± 0.50 pF	250 = 25V	Y = Tin & Lead		
0805	Z = Z5U	R = decimal	F = $\pm 1\%$	500 = 50V	(90% Tin (Sn) & 10% Lead (Pb))		
1206	Y = Y5V	1R0 = 1.0pF	G = $\pm 2\%$	101 = 100V			
1210		120 = 12pF	J = $\pm 5\%$				
1808		471 = 470pF	K = $\pm 10\%$				
1812		102 = 1,000pF	M = $\pm 20\%$				
1825		273 = 0.027 μ F	Z = +80/-20%				
2220		474 = 0.47 μ F					
2225		105 = 1.0 μ F					

Venkel Part Number Structure

C 0805 X7R 500 104 K N E

CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Pb = 90% Tin	Tape (13" Reel)
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$	(Sn)/10%	R = Paper Tape
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	(13" Reel)
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



PANASONIC

PANASONIC PART NUMBER: ECJ2VB1H104K CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Panasonic Part Number Structure

ECJ	2	V	B	1H	104	K
STYLE	SIZE (EIA)	PACKAGING	DIELECTRIC	VOLTAGE	CAPACITANCE	TOLERANCE
	Z = 0201	E = 7" Paper Tape 2mm	C = COG/NPO	0G = 4V	1st two digits are significant;	B = ± 0.10 pF
	0 = 0402	V = 7" Paper Tape 4mm	B = X7R/X5R	0J = 6.3V	third digit denotes number of zeros.	C = ± 0.25 pF
	1 = 0603	F = 7" Embossed Tape	F = Y5V	1A = 10V	R = decimal	D = ± 0.50 pF
	2 = 0805	Y = 7" Embossed Tape		1C = 16V	1R0 = 1.0pF	F = $\pm 1\%$
	G = 0805	W = 13" 2mm		1E = 25V	120 = 12pF	G = $\pm 2\%$
	3 = 1206	Z = 13" 4mm		1H = 50V	471 = 470pF	J = $\pm 5\%$
	D = 1206	C = Bulk Case			102 = 1,000pF	K = $\pm 10\%$
	M = 1206				273 = 0.027 μ F	M = $\pm 20\%$
	4 = 1210				474 = 0.47 μ F	Z = +80/-20%
	5 = 1812				105 = 1.0 μ F	

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$	(Sn)/10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



SAMSUNG PART NUMBER: CL21B104KBFNNNC CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Samsung Part Number Structure

CL	21	B	104	K	B	F		N	N	N	C
SERIES	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	THICKNESS		TERMINATION	PRODUCTS	SPECIAL	PACKAGING
	03=0201	C=COG/NPO	1st two digits	B = ± 0.10 pF	R = 4V	3 = 0.30mm	P = 1.15mm	N = 100%	N = Normal	N = Reserved	B = Bulk
	05=0402	B=X7R	are significant;	C = ± 0.25 pF	Q = 6.3V	5 = 0.50mm	Q = 1.25mm	matte Tin (Sn)		for Future	P = Bulk Case
	10=0603	A=X5R	third digit	D = ± 0.50 pF	P = 10V	8 = 0.80mm	S = 1.35mm	over Nickel		Use	C = Cardboard
	21=0805	E=Y5V	denotes num-	F = ± 1%	O = 16V	9 = 0.90mm	U = 1.80mm				Tape, 7" Reel
	31=1206	F=Z5U	ber of zeros.	G = ± 2%	A = 25V	A = 0.85mm	V = 2.50mm				O = Cardboard
	32=1210		R = decimal	J = ± 5%	B = 50V	C = 0.85mm	Y = 1.25mm				Tape, 13" Reel
	43=1812		1R0 = 1.0pF	K = ± 10%	C = 100V	D = 1.00mm					D = Cardboard
	55=2220		120 = 12pF	M = ± 20%	D = 200V	E = 1.10mm					Tape, 13" Reel
			471 = 470pF	Z = +80/-20%		F = 1.25mm					E = Embossed
			102 = 1,000pF			H = 1.60mm					Tape, 7" Reel
			273 = 0.027µF			I = 2.00mm					F = Embossed
			474 = 0.47µF			J = 2.50mm					Tape, 13" Reel
			105 = 1.0µF			L = 3.20mm					S = E = Em-
						M = 1.15mm					bossed Tape,
											10" Reel

Venkel Part Number Structure

C	0805	X7R	500	104	K		N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE		TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF		N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF		matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF		over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = ± 1%		P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = ± 2%		G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = ± 5%		Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = ± 10% M = ± 20%		Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = ± 30%		(Sn)/ 10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%		Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%		Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.			

*For exact cross and confirmation of ESR, please consult our catalog.



TDK

TDK PART NUMBER: C2012X7R1H104K CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

TDK Part Number Structure

C	0805	X7R	1H	104	K
SERIES	SIZE (EIA)	DIELECTRIC	VOLTAGE	CAPACITANCE	TOLERANCE
	0402 = 01005	COG/NPO	0G = 4V	1st two digits are significant;	B = ± 0.10 pF
	0603 = 0201	X7R	0J = 6.3V	third digit denotes number of zeros.	C = ± 0.25 pF
	1005 = 0402	X5R	1A = 10V	R = decimal	D = ± 0.50 pF
	1608 = 0603	Y5V	1C = 16V	1R0 = 1.0pF	F = ± 1%
	2012 = 0805	Z5U	1E = 25V	120 = 12pF	G = ± 2%
	3216 = 1206		1H = 50V	471 = 470pF	J = ± 5%
	3225 = 1210		2A = 100V	102 = 1,000pF	K = ± 10%
	4532 = 1812			273 = 0.027µF	M = ± 20%
	5750 = 2220			474 = 0.47µF	Z = +80/-20%
				105 = 1.0µF	

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = ± 1%	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = ± 2%	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = ± 5%	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = ± 10% M = ± 20%	Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = ± 30%	(Sn)/10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values		
					below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



TAIYO YUDEN

TAIYO YUDEN NUMBER: UMK212B7104KQ-T CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Taiyo Yuden Part Number Structure

U	M	K	212	B7	104	K	Q	T
VOLTAGE	SERIES	TERMINATION	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	THICKNESS	PACKAGING
A = 4V		K = 100%	042 = 01005	CG = COG/NPO	1st two digits are significant;	B = ± 0.10 pF	C = 0.2mm	T = Tape (4mm pitch)
J = 6.3V		matte Tin	063 = 0201	B7 = X7R	third digit denotes number of zeros.	C = ± 0.25 pF	P = 0.3mm	F = Tape (2mm pitch)
L = 10V		(Sn) over	105 = 0402	BJ = X5R	R = decimal	D = ± 0.50 pF	V = 0.5mm	W = Tape (1mm pitch)
E = 16V		Nickel	107 = 0603	F = Y5V	1R0 = 1.0pF	F = ± 1%	K = 0.45mm	P = Tape (4mm pitch, 1000pcs)
T = 25V			212 = 0805		120 = 12pF	G = ± 2%	A = 0.8mm	
G = 35V			316 = 1206		471 = 470pF	J = ± 5%	D = 0.85mm	
U = 50V			325 = 1210		102 = 1,000pF	K = ± 10%	G = 1.25mm	
			432 = 1812		273 = 0.027µF	M = ± 20%	L = 1.6mm	
			550 = 2220		474 = 0.47µF	Z = +80/-20%	N = 1.9mm	
					105 = 1.0µF		Y = 2.0mm	
							M = 2.5mm	

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100%	D = Paper Tape
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	matte Tin(Sn)	(10" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	over Nickel	E = Embossed
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = ± 1%	P = Palladium Silver	Tape (7" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = ± 2%	G = Gold over	P = Paper Tape
	1206		160 = 16 VDCW	of zeroes.	J = ± 5%	Nickel	(7" Reel)
	1210		250 = 25 VDCW	Example:	K = ± 10% M = ± 20%	Pb = 90% Tin	U = Embossed
	1812		500 = 50 VDCW	101 = 100pF	N = ± 30%	(Sn)/10%	Tape (13" Reel)
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%	Lead (Pb)	R = Paper Tape
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%	Termination	(13" Reel)
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



VISHAY / VITRAMON

VISHAY / VITRAMON PART NUMBER: VJ0805Y104KXAA CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Vishay / Vitramon Part Number Structure

VJ	0805	Y	104	K	X	A	A	T
SERIES	SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	VOLTAGE	MARKING	PACKAGING
	0402	A = COG/NPO	1st two digits are significant;	B = ± 0.10 pF	X = 100% matte Tin (Sn)	S = 4V	M = Marked	R = 13" Plastic
	0603	Y = X7R	third digit denotes number of zeros.	C = ± 0.25 pF	over Nickel	Y = 6.3V	A = Unmarked	C = 7" Paper
	0805	U = Z5U	R = decimal	D = ± 0.50 pF	N = Non-Magnetic	Q = 10V		P = 13" Paper
	1206	G = X5R	1R0 = 1.0pF	F = $\pm 1\%$		J = 16V		B = Bulk Pack
	1210		120 = 12pF	G = $\pm 2\%$		X = 25V		
	1812		471 = 470pF	J = $\pm 5\%$		A = 50V		
	1825		102 = 1,000pF	K = $\pm 10\%$		B = 100V		
	2220		273 = 0.027 μ F	M = $\pm 20\%$				
	2225		474 = 0.47 μ F	Z = +80/-20%				
			105 = 1.0 μ F					

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100% matte Tin(Sn)	D = Paper Tape (10" Reel)
	0201	X7R	followed by number of zeroes.	digits are	*C = ± 0.25 pF	over Nickel	E = Embossed Tape (7" Reel)
	0402	X5R	4R0 = 4.0VDCW	significant,	*D = ± 0.5 pF	P = Palladium Silver	P = Paper Tape (7" Reel)
	0603	Y5V	6R3 = 6.3 VDCW	followed	F = $\pm 1\%$	G = Gold over Nickel	U = Embossed Tape (13" Reel)
	0805	Z5U	100 = 10 VDCW	by number	G = $\pm 2\%$	Pb = 90% Tin (Sn)/ 10%	R = Paper Tape (13" Reel)
	1206		160 = 16 VDCW	of zeroes.	J = $\pm 5\%$	Lead (Pb)	
	1210		250 = 25 VDCW	Example:	K = $\pm 10\%$ M = $\pm 20\%$	Termination	
	1812		500 = 50 VDCW	101 = 100pF	N = $\pm 30\%$		
	2220		630 = 63 VDCW	*R" denotes	Z = +80 - 20%		
	2221		101 = 100 VDCW	decimal:	P = +100 - 0%		
				6R8 = 6.8 pF	* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



WALSIN

WALSIN NUMBER: 0805B104K160CT CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Walsin Part Number Structure

0805 B 104 K 500 C T

SIZE (EIA)	DIELECTRIC	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING
0201	N = COG/NPO	1st two digits are significant;	B = ± 0.10 pF	4R0 = 4V	C = 100% matte Tin (Sn)	T = 7" Reel
0402	B = X7R	third digit denotes number of zeros.	C = ± 0.25 pF	6R3 = 6.3V	over Nickel	R = 7" Reel (2mm pitch)
0603	X = X5R	R = decimal	D = ± 0.50 pF	100 = 10V		G = 13" Reel
0805	F = Y5V	1R0 = 1.0pF	F = ± 1%	160 = 16V		
1206		120 = 12pF	G = ± 2%	250 = 25V		
1210		471 = 470pF	J = ± 5%	500 = 50V		
1812		102 = 1,000pF	K = ± 10%	101 = 100V		
2220		273 = 0.027µF	M = ± 20%			
		474 = 0.47µF	Z = +80/-20%			
		105 = 1.0µF				

Venkel Part Number Structure

C 0805 X7R 500 104 K N E

CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005	COG	1st two digits are significant	1st two	*B = ± 0.1 pF	N = 100% matte Tin(Sn)	D = Paper Tape (10" Reel)
	0201	X7R	followed by number of zeroes.	digits are significant,	*C = ± 0.25 pF	over Nickel	E = Embossed Tape (7" Reel)
	0402	X5R	4R0 = 4.0VDCW	followed	*D = ± 0.5 pF	P = Palladium Silver	P = Paper Tape (7" Reel)
	0603	Y5V	6R3 = 6.3 VDCW	by number	F = ± 1%	G = Gold over Nickel	U = Embossed Tape (13" Reel)
	0805	Z5U	100 = 10 VDCW	of zeroes.	G = ± 2%	Pb = 90% Tin (Sn)/ 10% Lead (Pb)	R = Paper Tape (13" Reel)
	1206		160 = 16 VDCW	Example:	J = ± 5%	Termination	
	1210		250 = 25 VDCW	101 = 100pF	K = ± 10% M = ± 20%		
	1812		500 = 50 VDCW	*R" denotes decimal:	N = ± 30%		
	2220		630 = 63 VDCW	6R8 = 6.8 pF	Z = +80 - 20%		
	2221		101 = 100 VDCW		P = +100 - 0%		
					* For capacitance values below 10 pF only.		

*For exact cross and confirmation of ESR, please consult our catalog.



YAGEO

YAGEO PART NUMBER: CC0805KRX7R9BB104 CROSSES TO VENKEL PART NUMBER: C0805X7R500-104KNE

Yageo Part Number Structure

CC	0805	K	R	X7R	9	B	B	104
SERIES	SIZE (EIA)	TOLERANCE	PACKAGING	DIELECTRIC	VOLTAGE	TERMINATION	PROCESS CODE	CAPACITANCE
CC = MLCC	0201 0402 0603 0805 1206 1210 1808 1812	B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% Z = +80/-20%	R = 7" Paper K = 7" Plastic P = 13" Paper F = 13" Plastic C = Bulk Case	COG/NPO X7R X5R Y5V	5 = 6.3V 6 = 10V 7 = 16V 8 = 25V 9 = 50V 0 = 100V	B = 100% matte Tin (Sn) over Nickel	N = NPO B = Class 2 Products	1st two digits are significant; third digit denotes number of zeros. R = decimal 1R0 = 1.0pF 120 = 12pF 471 = 470pF 102 = 1,000pF 273 = 0.027µF 474 = 0.47µF 105 = 1.0µF

Venkel Part Number Structure

C	0805	X7R	500	104	K	N	E
CERAMIC CAPACITOR	SIZE	DIELECTRIC	RATED VOLTAGE	CAPACITANCE	TOLERANCE CODE	TERMINATION	PACKAGING
	01005 0201 0402 0603 0805 1206 1210 1812 2220 2221	COG X7R X5R Y5V Z5U	1st two digits are significant followed by number of zeroes. 4R0 = 4.0VDCW 6R3 = 6.3 VDCW 100 = 10 VDCW 160 = 16 VDCW 250 = 25 VDCW 500 = 50 VDCW 630 = 63 VDCW 101 = 100 VDCW	1st two digits are significant, followed by number of zeroes. Example: 101 = 100pF "R" denotes decimal: 6R8 = 6.8 pF	*B = ± 0.1 pF *C = ± 0.25 pF *D = ± 0.5 pF F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20% N = ± 30% Z = +80 - 20% P = +100 - 0% * For capacitance values below 10 pF only.	N = 100% matte Tin(Sn) over Nickel P = Palladium Silver G = Gold over Nickel Pb = 90% Tin (Sn)/ 10% Lead (Pb) Termination	D = Paper Tape (10" Reel) E = Embossed Tape (7" Reel) P = Paper Tape (7" Reel) U = Embossed Tape (13" Reel) R = Paper Tape (13" Reel)

*For exact cross and confirmation of ESR, please consult our catalog.



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