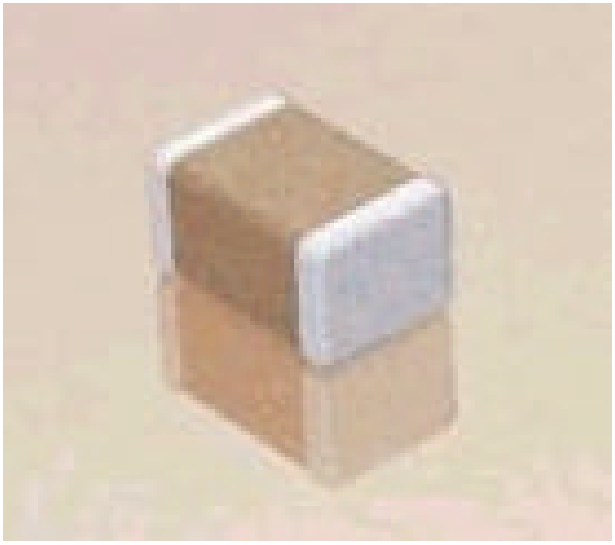
Multilayer Ceramic Chip Capacitor

A KYOCERA GROUP COMPANY



PART NUMBER CROSS REFERENCE GUIDE

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MLCC CROSS REFERENCE

Chip Case Size / Style Cross Reference Chart

AVX	0201	0402	0603	0805	1005	1206	1210	1805	1808	1812	1825	2220	2225
ATC		ATC0402	ATC0603	ATC0805		ATC1206	ATC1210			ATC1812			ATC2225
Cal-Chip		GMC-04	GMC-10	GMC-21		GMC-31	GMC-32			GMC-43		GMC-56	GMC-57
Johanson		R07	R14	R15		R18	S41		R29	S43	S49	S47	S48
KEMET		C0402	C0603	C0805	C1005	C1206	C1210			C1812	C1825	C2220	C2225
Koa		0402	0603	0805		1206	1210			1812	1825		
Kyocera	**CM03**	**CM05**	**CM105**	**CM21**		**CM316**	**CM32**		**CM42**	**CM43**		**CM55**	
Murata OLD		GRM36	GRM39	GRM40		GRM42-6	GRM42-2			GRM43-2		GRM44-1	
Murata	GRM03	GRM15	GRM18	GRM21		GRM31	GRM32		GRM42	GRM43		GRM55	
NIC	NMC0201	NMC0402	NMC0603	NMC0805		NMC1206	NMC1210			NMC1812			NMC2225
Novacap		0402	0603	0805	1005	1206	1210		1808	1812	1825		2225
Panasonic	Z	0	1	2		3	4						
Philips			0603	0805		1206	1210			1812		2220	
Rohm		MCH15	MCH18	MCH21		MCH31	MCH32			MCH43		MCH53	
EPCOS		B379XX	B379XX	B379XX		B379XX	B379XX						
Samsung			CL10	CL21		CL31	CL32						
TDK	C0603	C1005	C1608	C2012		C3216	C3225			C4532		C5650	
Taiyo Yuden		UMK105	UMK107	UMK212		UMK316	UMK325			UMK432		UMK550	
Tecate		0402	0603	0805		1206	1210			1812	1825		2225
UCC				20		30	40			50		60	
Vitramon		VJ0402	VJ0603	VJ0805	VJ0905		VJ1210	VJ1805	VJ1808	VJ1812			VJ2224

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MLCC CROSS REFERENCE

AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

ATC - 0805X7R104KL2ST

0805	X7R	104	K	L	2	S	T
Case Size	**Dielectric**	**Capacitance**	**Tolerance**	**Terminations**	**Voltage**	**Marking**	**Packaging**
0402	NP0	2 Sig. Fig +	B = ±.1pF	L = Ni Barrier	A = 10V	A = No Marking	T = 7" Reel
0603	X7R	No. of Zeros	C = ±.25pF		7 = 16V	S = EIA Marking	R = 13" Reel
0805	Z5U	Use "R" for	D = ±.50pF		1 = 25V		B = Bulk
1206		Decimal point	F = ±1%		2 = 50V		
1210			G = ±2%		3 = 100V		
1812			J = ±5%		4 = 200V		
2225			K = ±10%		5 = 500V		
			M = ±20%		6 = 1000V		
			Z = +80%, -20%				
			P = GMV, +100%, -0%				

CAL CHIP - GMC21X7R104K50NEM

GMC21	X7R	104	K	50	N	E	M
Series/Size	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Termination**	**Packaging**	**Marking**
GMC04 = 0402	CG	2 Sig. Fig +	B = ±.1pF	16 = 16V	N = Nickel Barrier	T = Paper Tape	M = Marked
GMC10 = 0603	X7R	No. of Zeros	C = ±.25pF	25 = 25V		E = Plastic Tape	(0805 and 1206 Only)
GMC21 = 0805	Z5U	Use "R" for	D = ±.50pF	50 = 50V			
GMC31 = 1206	Y5V	Decimal point	F = ±1%	100 = 100V			
GMC32 = 1210			G = ±2%	200 = 200V			
GMC43 = 1812			H = ±3%				
GMC56 = 2220			J = ±5%				
GMC57 = 2225			K = ±10%				
			M = ±20%				
			Z = +80%, -20%				
			P = GMV, +100%, -0%				

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

EPCOS(SIEMENS/MATSUSHITA) - B37941K5104K-82

B37941	K	5	104	K	-	82
Style/Dielectric	**Termination**	**Voltage**	**Capacitance**	**Tolerance**	**Decimals**	**Packaging**

Size	NP0	X7R	X8R	Z5U
0402	B37920	B37921		B37922
0603	B37930	B37931		B37932
0805	B37940	B37941	B37541	B37942
1206	B37971	B37872	B37472	B37873
1210	B37949	B37950	B37550	B37951
1812		B37953		B37954
2220		B37956		B37957

K = Ni/Sn J = Ag/Pd	9 = 16V 0 = 25V 5 = 50V 1 = 100V 2 = 200V 3 = 500V	2 Sig. Fig + No. of Zeros Use "R" for Decimal point	B = ±.1pF C = ±.25pF D = ±.50pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% Z = +80%, -20% P = GMV, +100%, -0%	Used only for low cap below 10pF	60 = 7" Reel Paper 62 = 7" Reel Plastic 70 = 13" Reel Paper 72 = 13" Reel Plastic 01 = Bulk Cassette

JOHANSON - 500R15W104KV6E

500	R15	W	104	K	V	6	E
Voltage	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Termination**	**Marking**	**Packaging**
100 = 10V	R07 = 0402	N = NP0/C0G	2 Sig. Fig +	B = ±.1pF	V = Ni Barrier	4 = No Mark	E = 7" Reel Plastic
160 = 16V	R14 = 0603	W = X7R	No. of Zeros	C = ±.25pF		6 = Marking	T = 7" Reel Paper
250 = 25V	R15 = 0805	X = X5R	Use "R" for	D = ±.50pF			R = 13" Reel Paper
500 = 50V	R18 = 1206	Z = Z5U	Decimal point	F = ±1%			U = 13" Reel Plastic
101 = 100V	S41 = 1210	Y = Y5V		G = ±2%			None = Bulk
201 = 200V	R29 = 1808			J = ±5%			
251 = 250V	S43 = 1812			K = ±10%			
501 = 500V	S47 = 2220			M = ±20%			
102 = 1000V	S48 = 2225			Z = +80%, -20%			
	S49 = 1825			P = GMV, +100%, -0%			
	S54 = 3640						

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

KEMET - C0805C104K5RAC

C	0805	C	104	K	5	R	A	C
Style	**Case Size**	**Specification**	**Capacitance**	**Tolerance**	**Voltage**	**Dielectric**	**Failure Rate**	**Terminations**
	0402	C - Standard	2 Sig. Fig +	B = ±.1pF	9 = 6.3V	G = NP0/C0G	A = Standard	C = Ni w/ Tin Plate
	0603	A - GR900	No. of Zeros	C = ±.25pF	8 = 10V	R = X7R	M - 1.0 (Military)	H = Ni w/ Solder
	0805	P - Mil-C-55681	Use "9" or	D = ±.50pF	4 = 16V	P = X5R	P - 0.1 (Military)	T = Silver
	1005	CDR01-CDR06	"8" as Decimal	F = ±1%	3 = 25V	U = Z5U	R - 0.01 (Military)	G = Gold Plated
	1206	N - Mil -C-55681	point	G = ±2%	5 = 50V	X = BX (Mil)	S - 0.0001 (Military)	
	1210	CDR31-CDR35		J = ±5%	1 = 100V	V = Y5V		
	1812	Z - Mil-C-123		K = ±10%	2 = 200V			
	1825	E - Mil Equivalent		M = ±20%				
	2220	(Group A Only)		Z = +80%, -20%				
	2225			P = +100%, -0%				

KOA - 0805X7RHTE104K

0805	X7R	H	TE	104	K
Style	**Dielectric**	**Voltage**	**Packaging**	**Capacitance**	**Tolerance**
0402	NP0	C = 16V	TE = 7" Reel Plastic	2 Sig. Fig +	B = ±.1pF
0603	X7R	E = 25V	T = 7" Reel Paper	No. of Zeros	C = ±.25pF
0805	Z5U	H = 50V	D = 13" Reel Paper	Use "R" for	D = ±.50pF
1206	Y5V	I = 100V	B = 13" Reel Plastic	Decimal point	F = ±1%
1210		J = 200V			G = ±2%
1812					J = ±5%
1825					K = ±10%
					M = ±20%
					Z = +80%, -20%
					P = +100%, -0%

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

KYOCERA(AVX) - CM21X7R104K50AT

CM	21	X7R	104	K	50	A	T
Series	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Terminations**	**Packaging**
	03 = 0201	CG	2 Sig. Fig +	B = ±.1pF	04 = 4V	A = Ni Barrier	T = 7" Reel (4mm Pitch)
	05 = 0402	X5R	No. of Zeros	C = ±.25pF	06 = 6.3V		L = 13" Reel (4mm Pitch)
	105 = 0603	X7R	Use "R" for	D = ±.50pF	10 = 10V		H = 7" Reel (2mm Pitch)
	21 = 0805	X8R	Decimal point	F = ±1%	16 = 16V		N = 13" Reel (4mm Pitch)
	316 = 1206	Z5U		G = ±2%	25 = 25V		B = Bulk (Vinyl Bags)
	32 = 1210	Y5V		J = ±5%	50 = 50V		C = Bulk Cassette
	42 = 1808	Y5U		K = ±10%	100 = 100V		
	43 = 1812			M = ±20%	200 = 200V		
	55 = 2220			Z = +80%, -20%	250 = 250V		
				P = +100%, -0%	500 = 500v		
					650 = 650V		
					1000 = 1000V		

NIC - NMC0805X7R104K50TRPLP

NMC	0805	X7R	104	K	50	TR	PL	P
Series	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Packaging**	**Tape Type**	**Reel Type**
	0201	NP0	2 Sig. Fig +	B = ±.1pF	10 = 10V	B = Bulk	_ = Paper	_ = Paper
	0402	X7R	No. of Zeros	C = ±.25pF	16 = 16V	TR = Reel	PL = Plastic	P = Plastic
	0603	Z5U	Use "R" for	D = ±.50pF	25 = 25V			
	0805	Y5V	Decimal point	F = ±1%	50 = 50V			
	1206			G = ±2%	100 = 100V			
	1210			J = ±5%				
	1812			K = ±10%				
	2225			M = ±20%				
				Z = +80%, -20%				
				P = +100%, -0%				

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201 0402 0603 0805 1005 1206 1210 1805 1808 1812 1825 2220 2225	4 = 4V 6 = 6.3V Z = 10V Y = 16V 3 = 25V D = 35V 5 = 50V 1 = 100V 2 = 200V V = 250V 7 = 500V C = 600V A = 1000V	A = NP0/C0G C = X7R D = X5R E = Z5U G = Y5V	2 Sig. Fig + No. of Zeros Use “R” for Decimal point	B = ±.1pF C = ±.25pF D = ±.50pF F = ±1%(≥25pF) G = ±2%(≥13pF) J = ±5% K = ±10% M = ±20% Z = +80%, -20% P = GMV, +100%, -0%	A = N/A	T = 100% Tin 7 = Gold Plated 1 = Pd/Ag	2 = 7” Reel 4 = 13” Reel 7 = Bulk Cassette 9 = Bulk	A = Standard T = .66mm (.026”) S = .56mm (.022”) R = .46mm (.018”)

MURATA (NEW GLOBAL) - GRM218R71H104KA01K

GRM	21	-	R7	1H	104	K	A01	K
Series	**Case Size**	**Thickness**	**Dielectric**	**Voltage**	**Capacitance**	**Tolerance**	**Electrode**	**Packaging**
Ni Barrier	03 = 0201 15 = 0402 18 = 0603 21 = 0805 31 = 1206 32 = 1210 42 = 1808 43 = 1812 55 = 2220		5C = C0G R6 = X5R R7 = X7R E4 = Z5U F5 = Y5V	0J = 6.3V 1A = 10V 1C = 16V 1E = 25V 1H = 50V 2A = 100V 2D = 200V 2E = 250V YD = 300V 2H = 500V 2J = 650V 3A = 1000V	2 Sig. Fig + No. of Zeros Use “R” for Decimal point	B = ±.1pF C = ±.25pF D = ±.50pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% Z = +80%, -20% P = +100%, -0%	Specifies inner electrode Material (BME or Precious)	D = 7” Reel Paper L = 7” Reel Plastic J = 13” Reel Paper K = 13” Reel Plastic B = Bulk C = Bulk Cassette T = Bulk Tray

MURATA (OLD) - GRM40X7R104K050AL

GRM	40	- - -	X7R	104	K	050	A	L
Series	**Case Size**	**Thickness**	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Marking**	**Packaging**
	36 = 0402 39 = 0603 40 = 0805 42-6 = 1206 42-2 = 1210 43-2 = 1812 44-1 = 2220	Thickness, if specified. None, otherwise	C0G X5R X7R Z5U Y5V	2 Sig. Fig + No. of Zeros Use “R” for Decimal point	B = ±.1pF C = ±.25pF D = ±.50pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% Z = +80%, -20% P = +100%, -0%	004 = 4V 006 = 6.3V 010 = 10V 016 = 16V 025 = 25V 050 = 50V 100 = 100V 200 = 200V 250 = 250V 500 = 500v 650 = 650V	A = Unmarked	D = 7” Reel Paper L = 7” Reel Plastic J = 13” Reel Paper K = 13” Reel Plastic B = Bulk C = Bulk Cassette Q = 7” Paper 2mm Pitch

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MLCC CROSS REFERENCE

AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

NOVACAP - 0805B104K500P_*

0805	B	104	K	500	P	-	*
Case Size	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Termination**	**Thickness**	**Packaging**
0402	N = NP0/C0G	2 Sig. Fig +	B = ±.1pF	2 Sig. Fig +	P = Pd/Ag	Per Specified	T = Reel
0603	B = X7R	No. of Zeros	C = ±.25pF	No. of Zeros	S = Silver		* = Bulk
0805	X = BX	Use "R" for	D = ±.50pF		N = Ni Barrier		
1005	Z = Z5U	Decimal point	F = ±1%				
1206	Y = Y5V		G = ±2%				
1210			J = ±5%				
1808			K = ±10%				
1812			M = ±20%				
1825			Z = +80%, -20%				
2220			P = +100%, -0%				

PANASONIC - ECJ2YB1H104K

ECJ	2	Y	B	1H	104	K
Series	**Case Size**	**Packaging**	**Dielectric**	**Voltage**	**Capacitance**	**Tolerance**
	Z = 0201	X = Bulk	C* = NP0	0J = 6.3V	2 Sig. Fig +	C = ±.25pF
	0 = 0402	E = Paper 2mm	B = X7R, X5R	1A = 10V	No. of Zeros	D = ±.50pF
	1 = 0603	V = Paper 4mm	F = Y5V	1C = 16V	Use "R" for	F = ±1%
	2 = 0805	F, Y = Plastic 4mm		1E = 25V	Decimal point	J = ±5%
	3 = 1206	W = Large Reels 2mm		1H = 50V		K = ±10%
	4 = 1210	Z = Large Reels 4mm		2A = 100V		M = ±20%
		C = Bulk Cassette		2D = 200V		Z = +80%, -20%

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MLCC CROSS REFERENCE

AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

PHYCOMP (PHILIPS) - 08052R104K9BB2EA

0805	2R	104	K	9	B	B	2	EA
Case Size	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Termination**	**Packaging**	**Marking**	**Series**
0603	CG = NP0/C0G	2 Sig. Fig +	B = ±.1pF	6 = 10V	B = Ni/Sn	2 = 7" Reel Paper	2 = 2 Character	EA = Compact
0805	2R = X7R	No. of Zeros	C = ±.25pF	7 = 16V	C = Ni/Solder	B = 7" Reel Plastic	Marking	MA = Microwave
1206	2E = Z5U	Use "R" for	D = ±.50pF	8 = 25V		3 = 13" Reel Paper	0 = No Marking	
1210	2F = Y5V	Decimal point	F = ±1%	9 = 50V		F = 13" Reel Plastic		
1812			G = ±2%	0 = 100V		P = Bulk Cassette		
2220			J = ±5%	B = 200V				
			K = ±10%	D = 500V				
			M = ±20%					
			Z = +80%, -20%					
			P = +100%, -0%					

ROHM - MCH215C104KPN

MCH	21	5	C	104	K	P	N
Series	**Case Size**	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Packaging**	**Marking/Thickness**
MCH = Ni/Solder	15 = 0402	4 = 10V	A =C0G	2 Sig. Fig +	B = ±.1pF	K = 7" Reel Paper	N = Marked
MNA = Arrays	18 = 0603	3 = 16V	C =X7R	No. of Zeros	C = ±.25pF	P = 7" Reel Plastic	Special Thickness
	21 = 0805	2 = 25V	F =Y5V	Use "R" for	D = ±.50pF	L = 13" Reel Paper	
	31 = 1206	5 = 50V		Decimal point	F = ±1%	Q = 13" Reel Plastic	
	32 = 1210				G = ±2%	B = Bulk Bags	
	43 = 1812				J = ±5%	C = Bulk Cassette	
					K = ±10%		
					M = ±20%		
					Z = +80%, -20%		
					P = +100%, -0%		

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

SAMSUNG - CL21B104KBNE

CL	21	B	104	K	B	N	E
Series	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Voltage**	**Termination**	**Packaging**
	01 = 0603	C = NP0	2 Sig. Fig +	C = ±.25pF	O = 16V	P = Pd/Ag	C = Paper
	21 = 0805	B = X7R	No. of Zeros	D = ±.50pF	A = 25V	S = Silver	E = Plastic
	31 = 1206	E = Z5U	Use "R" for	F = ±1%	B = 50V	N = Ni Barrier	P = Bulk Cassette
	32 = 1210	Y = Y5V	Decimal point	G = ±2%	C = 100V		B = Bulk
				J = ±5%			
				K = ±10%			
				M = ±20%			
				P = GMV			
				Z = +80%, -20%			

TECATE - CMC050104KX0805TM

CMC	050	104	K	X	0805	T	M
Series	**Voltage**	**Capacitance**	**Tolerance**	**Dielectric**	**Case Size**	**Packaging**	**Marking**
	010 = 10V	2 Sig. Fig +	B = ±.1pF	N =NP0	0402	T = Reel	M = Marking
	016 = 16V	No. of Zeros	C = ±.25pF	X5 = X5R	0603	W = Waffle	(If Required)
	025 = 25V	Use "R" for	D = ±.50pF	X =X7R	0805		
	050 = 50V	Decimal point	F = ±1%	Z = Z5U	1206		
	100 = 100V		G = ±2%	Y =Y5V	1210		
			J = ±5%		1812		
			K = ±10%		1825		
			M = ±20%		2225		
			Z = +80%, -20%				
			P = +100%, -0%				

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

TDK - C2012X7R1H104KT

C2012	X7R	1H	104	K	T
Case Size	**Dielectric**	**Voltage**	**Capacitance**	**Tolerance**	**Packaging**
C0603 = 0201	CG	0J = 6.3V	2 Sig. Fig +	C = ±.25pF	T = Reel
C1005 = 0402	X7R	1A = 10V	No. of Zeros	D = ±.50pF	B = Bulk
C1608 = 0603	Z5U	1C = 16V	Use "R" for	F = ±1%	
C2012 = 0805	Y5U	1E = 25V	Decimal point	G = ±2%	
C3216 = 1206		1H = 50V		J = ±5%	
C3225 = 1210				K = ±10%	
C4532 = 1812				M = ±20%	
C5650 = 2220				P = GMV	
				Z = +80%, -20%	

TAIYO YUDEN - UMK212BJ104KT

U	M	K	212	BJ	104	K		T
Voltage	**Type**	**Termination**	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Special**	**Packaging**
A = 4V	M = Multilayer	K = Ni Barrier	105 = 0402	BJ = X7R	2 Sig. Fig +	C = ±.25pF	Various	T = Reel
J = 6.3V	V = Hi Q		107 = 0603	BJ = X5R	No. of Zeros	D = ±.50pF		B = Bulk
L = 10V			212 = 0805	F = Y5V	Use "R" for	F = ±1%		
E = 16V			316 = 1206	CK = C0G	Decimal point	G = ±2%		
T = 25V			325 = 1210	CJ = C0G		J = ±5%		
U = 50V			432 = 1812	CH = C0G		K = ±10%		
			550 = 2220	CG = C0G		M = ±20%		
						P = GMV		
						Z = +80%, -20%		

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AVX - 08055C104KAT2A

0805	5	C	104	K	A	T	2	A
Size	**Voltage**	**Dielectric**	**Capacitance**	**Tolerance**	**Failure Rate**	**Terminations**	**Packaging**	**Special**
0201	4 = 4V	A = NP0/C0G	2 Sig. Fig +	B = ±.1pF	A = N/A	T = 100% Tin	2 = 7" Reel	A = Standard
0402	6 = 6.3V	C = X7R	No. of Zeros	C = ±.25pF		7 = Gold Plated	4 = 13" Reel	T = .66mm (.026")
0603	Z = 10V	D = X5R	Use "R" for	D = ±.50pF		1 = Pd/Ag	7 = Bulk Cassette	S = .56mm (.022")
0805	Y = 16V	E = Z5U	Decimal point	F = ±1%(≥25pF)			9 = Bulk	R = .46mm (.018")
1005	3 = 25V	G = Y5V		G = ±2%(≥13pF)				
1206	D = 35V			J = ±5%				
1210	5 = 50V			K = ±10%				
1805	1 = 100V			M = ±20%				
1808	2 = 200V			Z = +80%, -20%				
1812	V = 250V			P = GMV, +100%, -0%				
1825	7 = 500V							
2220	C = 600V							
2225	A = 1000V							

UCC United Chemi Con - TCCS20E1E104MT

TCC	S	20	E	1H	104	K	T
Series	**Termination**	**Case Size**	**Dielectric**	**Voltage**	**Capacitance**	**Tolerance**	**Packaging**
TCC = Standard	R = Silver	20 = 0805	E = Y5U	1D = 20V	2 Sig. Fig +	B = ±.1pF	T = 7" Reel
THC = Hi Cap	S = Ni Solder	30 = 1206		1E = 25V	No. of Zeros	C = ±.25pF	
		40 = 1210		1H = 50V	Use "R" for	D = ±.50pF	
		50 = 1812		2A = 100V	Decimal point	F = ±1%	
		60 = 2220		2D = 200V		G = ±2%	
		70 = 3025				J = ±5%	
						K = ±10%	
						M = ±20%	
						Z = +80%, -20%	
						P = +100%, -0%	

VITRAMON - VJ0805Y104KXAMT

VJ	0805	Y	104	K	X	A	M	T
Series	**Case Size**	**Dielectric**	**Capacitance**	**Tolerance**	**Termination**	**Voltage**	**Marking**	**Packaging**
	0402	X = BX	2 Sig. Fig +	B = ±.1pF	X = Silver,	J = 16V	M = Marking	C = 7" Reel Paper
	0603	A,N = NP0/C0G	No. of Zeros	C = ±.25pF	Ni Barrier,	X = 25V	A = No Marking	T = 7" Reel Plastic
	0805	Y = X7R	Use "R" for	D = ±.50pF	Tin plated	A = 50V		P = 13" Reel Paper
	1005	U = Z5U	Decimal point	F = ±1%		B = 100V		R = 13" Reel Plastic
	1210	H = X8R		G = ±2%		C = 200V		B = Bulk
	1805			J = ±5%				
	1808			K = ±10%				
	1812			M = ±20%				
	2225			Z = +80%, -20%				
				P = +100%, -0%				