knowles

DLI•Johanson MFG•Novacap•Syfer•Voltronics

MULTILAYER CERAMIC CAPACITORS CROSS REFERENCE GUIDE

Chip Size - Quick Reference Chart

DLI	C11AH	C17AH	C22AH	C40AH	C06CF	C11CF	C17CF	C22CF	C40CF	C04UL	C06UL	C08UL	C11UL	C17UL
ATC	100A	100B 100C		100E	600S 600F	700A	700B	700C	700E	600L			800A	800B
AVX	11_M 12_M		2225_A		0603_A	11_A 12_A	13_A 14_A			0402_J		0805_A		
TEMEX	CHA	CHB			R14S	R12S	S42S	2225	CLE	0402	R14S	R15S		
MURATA					GRM18		GRM22			GRM15	GRM18	GRM21		GRM22
JOHANSON					R14			S48		R07	R14	R15		
VISHAY					VJ0603					VJ0402	VJ0603	VJ0805		
PRESIDIO										0402	0603	0805	0505	1010

DLI DIELECTRIC LABORATORIES

2777 Route 20 East, Cazenovia, NY 13035
Ph.: (315)655-8710
KCCSales@knowles.com

MLC CROSS REFERENCE GUIDE

2777 Route 20 East, Cazenovia, NY 13035| Ph.: (315)655-8710 | KCCSales@knowles.com

DLI: C11AH100J-8UN-X0T

C11AH	100	J	8	U	N	X	0	T
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	LEADING	TEST CODE	MARKING	PACKAGING
C11AH= 0.1pF-100pF C17AH= 0.1pF-1000pF C40AH= 1pF-2700pf C11CF= .01pF-100pF C17CF= .01pF-1000pF C22CF= 1pF-2700pF C40CF= 1pF-5100pF C04UL= 0.1pF-10pF C06CF= 0.1pF-47pF C08UL= 0.1pF-100pF C11UL= 0.1pF-100pF C17UL= 0.1pF-1000pF	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT EXAMPLES: 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% X = GMV S = SPECIAL	5 = 50V 1 = 100V 8 = 150V 6 = 200V 9 = 250V 3 = 300V 4 = 500V 7 = 1000V A = 1500V G = 2000V B = 2500V D = 3600V F = 5000V H = 7200V S = SPECIAL	T = Ag TERMINATION, Ni BARRIER LAYER, HEAVY SnPb PLATED SOLDER U = Ag TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDED S= Ag TERMINATION, Ni BARRIER LAYER, GOLD FLASH Z = Ag TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER E = Ag TERMINATION, ENHANCED Ni BARRIER LAYER P** = AgPd TERMINATION Q = POLYMER TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER Y = POLYMER TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER M** = POLYMER TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER W** = Ag TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER H** = Ag TERMINATION, ENHANCED Cu BARRIER LAYER, Sn PLATED SOLDER V** = Ag TERMINATION, Cu BARRIER LAYER, SnPb PLATED SOLDER R**= Ag TERMINATION, Cu BARRIER LAYER, HEAVY SnPb PLATED SOLDER	A = AXIAL RIBBON B = RADIAL RIBBON C = CENTER RIBBON D = CUSTOMER DEFINED E = AXIAL WIRE F = RADIAL WIRE N = NONE	X = COMMERCIAL Y = REDUCED VISIAL A = GROUP A C = GROUP C D = CUSTOMER SPECIFIED	1 = SINGLE SIDE 2 = DOUBLE SIDE 3 = LARGE SINGLE SIDE 4 = LARGE DOUBLE SIDE 5 = VERTICAL EDGE	T = TAPE & REEL V = VERTICAL TAPE B = BULK W = WAFFLE PACK S = SPECIAL

ATC: ATC100A100JW150XB

ATC	100A	100	J	W	150	X	T
ATC Style	SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	TERMINATION	VOLTAGE	MARKING	PACKAGING
	100A = DLI -C11AH 100B = DLI -C17AH 100C = DLI -C17AH 100E = DLI -C40AH 700A = DLI -C11CF 700B = DLI -C17CF 700C = DLI -C22CF 700E = DLI -C40CF 600L = DLI -C04UL 600S = DLI -C06CF 600F = DLI -C06CF 800A = DLI -C11UL 800B = DLI -C17UL	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **R** = DECIMAL POINT EXAMPLES: 100 = 10pF 270= 27pF 2R7 = 2.7pF	B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	W = DLI U TERMINATION CODE P = DLI T TERMINATION CODE T = DLI Z,E TERMINATION CODE WN = DLI V TERMINATION CODE PN = DLI R TERMINATION CODE TN = DLI W,H TERMINATION CODE CN = DLI P TERMINATION CODE	50 = 50V 100 = 100V 150 = 150V 200 = 200V 250 = 250V 300 = 300V 500 = 500V 1000 = 1000V 1500 = 1500V 2500 = 2500V 3600 = 3600V 7200 = 7200V	X = SINGLE SIDE	T = TAPE & REEL TV = VERTICAL TAPE B = BULK C = WAFFLE PACK I = SPECIAL

AVX: AQ11EM100JA1MA

AQ	11_M	E	100	J	A	1	M	A
STYLE	SIZE & DIELECTRIC MATERIAL	VOLTAGE	CAPACITANCE	TOLERANCE	FAILURE RATE	TERMINATION	PACKAGING	SPECIAL CODE
	11_A = DLI -C11CF 12_A = DLI -C11CF 11_M = DLI -C11AH 12_M = DLI -C11AH 13_A = DLI -C17CF 14_A = DLI -C17CF 0402_J = DLI -C04UL 0603_A = DLI -C06CF 0805_A = DLI -C08UL 2225_A = DLI -C22AH SPACE DESIGNATES VOLTAGE CODE	5 = 50V 1 = 100V E = 150V 2 = 200V 9 = 300V 7 = 500V	**FIRST TWO DIGITS** = SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT** = ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT **EXAMPLES:** 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	B = ±0.1pF C = ±0.25pF D = ±0.5pF F= ±1% G = ±2% J = ±5% K = ±10% M = ±20% N = ±30%	A=N/A	1 = DLI P TERMINATION CODE 7 = DLI S TERMINATION CODE J = DLI U TERMINATION CODE T = DLI Z TERMINATION CODE	B = BULK 3A = 13" REEL ME = 7" REEL RE = 13" REEL WE = WAFFLE PACK	A=Standard

MLC CROSS REFERENCE GUIDE

2777 Route 20 East, Cazenovia, NY 13035| Ph.: (315)655-8710 | KCCSales@knowles.com

DLI: C11AH100J-8UN-X0T

C11AH	100	J	8	U	N	X	0	T
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	LEADING	TEST CODE	MARKING	PACKAGING
C11AH= 0.1pF-100pF C17AH= 0.1pF-1000pF C40AH= 1pF-2700pf C11CF= .01pF-100pF C17CF= .01pF-1000pF C22CF= 1pF-2700pF C40CF= 1pF-5100pF C04UL= 0.1pF-10pF C06CF= 0.1pF-47pF C08UL= 0.1pF-100pF C11UL= 0.1pF-100pF C17UL= 0.1pF-1000pF	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT EXAMPLES: 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% X = GMV S = SPECIAL	5 = 50V 1 = 100V 8 = 150V 6 = 200V 9 = 250V 3 = 300V 4 = 500V 7 = 1000V A = 1500V G = 2000V B = 2500V D = 3600V F = 5000V H = 7200V S = SPECIAL	T = Ag TERMINATION, Ni BARRIER LAYER, HEAVY SnPb PLATED SOLDER U = Ag TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDED S= Ag TERMINATION, Ni BARRIER LAYER, GOLD FLASH Z = Ag TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER E = Ag TERMINATION, ENHANCED Ni BARRIER LAYER P** = AgPd TERMINATION Q = POLYMER TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER Y = POLYMER TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER M** = POLYMER TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER W** = Ag TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER H** = Ag TERMINATION, ENHANCED Cu BARRIER LAYER, Sn PLATED SOLDER V** = Ag TERMINATION, Cu BARRIER LAYER, SnPb PLATED SOLDER R**= Ag TERMINATION, Cu BARRIER LAYER, HEAVY SnPb PLATED SOLDER	A = AXIAL RIBBON B = RADIAL RIBBON C = CENTER RIBBON D = CUSTOMER DEFINED E = AXIAL WIRE F = RADIAL WIRE N = NONE	X = COMMERCIAL Y = REDUCED VISIAL A = GROUP A C = GROUP C D = CUSTOMER SPECIFIED	1 = SINGLE SIDE 2 = DOUBLE SIDE 3 = LARGE SINGLE SIDE 4 = LARGE DOUBLE SIDE 5 = VERTICAL EDGE	T = TAPE & REEL V = VERTICAL TAPE B = BULK W = WAFFLE PACK S = SPECIAL

TEMEX: 501CHA100CGLM

501	CH	A	100	C	G	L	M
VOLTAGE	SERIES	SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	TERMINATION	MARKING	PACKAGING
500 = 50V 101 = 100V 201 = 200V 301 = 300V 501 = 500V 102 = 1000V 122 = 1250V 162 = 1600V 202 = 2000V 252 = 2500V 362 = 3600V 702 = 7000V		CHA = DLI -C11AH CHB = DLI -C17AH 0402 = DLI -C04UL R12S = DLI -C11CF R14S = DLI -C06CF/UL R15S = DLI -C08UL S42S = DLI -C17CF 2225 = DLI -C22CF CLE = DLI -C40CF	**FIRST TWO DIGITS** = SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT** = ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT **EXAMPLES:** 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5%	P = DLI P TERMINATION CODE G = DLI S TERMINATION CODE W = DLI T TERMINATION CODE V = DLI U TERMINATION CODE 1 = DLI A TERMINATION CODE 2 = DLI C TERMINATION CODE 3 = DLI B TERMINATION CODE 6 = DLI F TERMINATION CODE 7 = DLI E TERMINATION CODE	L = MARKING REQUESTED BLANK= NO MARKING	B = BULK R = 13" REEL M = TAPE & REEL W = WAFFLE PACK

MURATA: GRM22E5C2H101KB

GRM22	E	5C	2H	101	K	B
SIZE & DIELECTRIC MATERIAL	HEIGHT DIMENSION	TEMPERATURE RANGE	VOLTAGE	CAPACITANCE	TOLERANCE	PACKAGING
GRM15 = DLI -C04UL GRM18 = DLI -C06CF/UL GRM21 = DLI -C08UL GRM22 = DLI -C17CF/UL	E = 2.5mm	5C = 25-125°C	1H = 50V 2A = 100V 2D = 200V YD = 300V 2H = 500V 2J = 630V 3A = 1000V 3D = 2000V	**FIRST TWO DIGITS** = SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT** = ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT **EXAMPLES:** 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% W = ±0.05pF	B = BULK L = 7" PLASTIC D = 7" PAPER J = 13" PAPER K = 13" PLASTIC D = 7" PAPER

MLC CROSS REFERENCE GUIDE

2777 Route 20 East, Cazenovia, NY 13035| Ph.: (315)655-8710 | KCCSales@knowles.com

DLI: C11AH100J-8UN-X0T

C11AH	100	J	8	U	N	X	0	T
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	LEADING	TEST CODE	MARKING	PACKAGING
C11AH= 0.1pF-100pF C17AH= 0.1pF-1000pF C40AH= 1pF-2700pf C11CF= .01pF-100pF C17CF= .01pF-1000pF C22CF= 1pF-2700pF C40CF= 1pF-5100pF C04UL= 0.1pF-10pF C06CF= 0.1pF-47pF C08UL= 0.1pF-100pF C11UL= 0.1pF-100pF C17UL= 0.1pF-1000pF	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT EXAMPLES: 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% X = GMV S = SPECIAL	5 = 50V 1 = 100V 8 = 150V 6 = 200V 9 = 250V 3 = 300V 4 = 500V 7 = 1000V A = 1500V G = 2000V B = 2500V D = 3600V F = 5000V H = 7200V S = SPECIAL	T = Ag TERMINATION, Ni BARRIER LAYER, HEAVY SnPb PLATED SOLDER U = Ag TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDED S= Ag TERMINATION, Ni BARRIER LAYER, GOLD FLASH Z = Ag TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER E = Ag TERMINATION, ENHANCED Ni BARRIER LAYER P** = AgPd TERMINATION Q = POLYMER TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER Y = POLYMER TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER M** = POLYMER TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER W** = Ag TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER H** = Ag TERMINATION, ENHANCED Cu BARRIER LAYER, Sn PLATED SOLDER V** = Ag TERMINATION, Cu BARRIER LAYER, SnPb PLATED SOLDER R**= Ag TERMINATION, Cu BARRIER LAYER, HEAVY SnPb PLATED SOLDER	A = AXIAL RIBBON B = RADIAL RIBBON C = CENTER RIBBON D = CUSTOMER DEFINED E = AXIAL WIRE F = RADIAL WIRE N = NONE	X = COMMERCIAL Y = REDUCED VISIAL A = GROUP A C = GROUP C D = CUSTOMER SPECIFIED	1 = SINGLE SIDE 2 = DOUBLE SIDE 3 = LARGE SINGLE SIDE 4 = LARGE DOUBLE SIDE 5 = VERTICAL EDGE	T = TAPE & REEL V = VERTICAL TAPE B = BULK W = WAFFLE PACK S = SPECIAL

JOHANSON: 201R14C100JV4E

200	R14	N	100	J	V	4	E
VOLTAGE	SIZE & DIELECTRIC MATERIAL	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	MARKING	PACKAGING
100 = 10V 160 = 16V 250 = 25V 500 = 50V 101 = 100V 201 =200V	R07 = DLI -C04UL R14 = DLI -C06CF/UL R15 = DLI -C08UL S48 = DLI -C22CF	N = NP0 W = X7R X = X5R	**FIRST TWO DIGITS** = SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT **EXAMPLES:** 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% W = ±0.05pF	V = DLI Z TERMINATION CODE P = DLI P TERMINATION CODE	4 = NOT MARKED 6 = SINGLE SIDE	E = 7" TAPE T = 7" PAPER U = 13" TAPE R = 13" PAPER W = WAFFLE PACK

VISHAY: VJ0402L0100AXCA

VJ0402L	100	A	X	A	C
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	TERMINATION	VOLTAGE	PACKAGING
VJ0402 = DLI -C04UL VJ0603 = DLI -C06CF/UL VJ0805 = CLI -C08UL	**FIRST TWO DIGITS** = SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT **EXAMPLES:** 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = .05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	X = DLI Z TERMINATION CODE	A = 50V B = 100V P = 250V A = 1500V	C = 7" TAPE P = 13" PAPER

MLC CROSS REFERENCE GUIDE

2777 Route 20 East, Cazenovia, NY 13035| Ph.: (315)655-8710 | KCCSales@knowles.com

DLI: C11AH100J-8UN-X0T

C11AH	100	J	8	U	N	X	0	T
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	LEADING	TEST CODE	MARKING	PACKAGING
C11AH= 0.1pF-100pF C17AH= 0.1pF-1000pF C40AH= 1pF-2700pf C11CF= .01pF-100pF C17CF= .01pF-1000pF C22CF= 1pF-2700pF C40CF= 1pF-5100pF C04UL= 0.1pF-10pF C06CF= 0.1pF-47pF C08UL= 0.1pF-100pF C11UL= 0.1pF-100pF C17UL= 0.1pF-1000pF	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS **R** = DECIMAL POINT EXAMPLES: 620 = 62pF 152 = 1500pF 2R7 = 2.7pF	A = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% X = GMV S = SPECIAL	5 = 50V 1 = 100V 8 = 150V 6 = 200V 9 = 250V 3 = 300V 4 = 500V 7 = 1000V A = 1500V G = 2000V B = 2500V D = 3600V F = 5000V H = 7200V S = SPECIAL	T = Ag TERMINATION, Ni BARRIER LAYER, HEAVY SnPb PLATED SOLDER U = Ag TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDED S= Ag TERMINATION, Ni BARRIER LAYER, GOLD FLASH Z = Ag TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER E = Ag TERMINATION, ENHANCED Ni BARRIER LAYER P** = AgPd TERMINATION Q = POLYMER TERMINATION, Ni BARRIER LAYER, Sn PLATED SOLDER Y = POLYMER TERMINATION, Ni BARRIER LAYER, SnPb PLATED SOLDER M** = POLYMER TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER W** = Ag TERMINATION, Cu BARRIER LAYER, Sn PLATED SOLDER H** = Ag TERMINATION, ENHANCED Cu BARRIER LAYER, Sn PLATED SOLDER V** = Ag TERMINATION, Cu BARRIER LAYER, SnPb PLATED SOLDER R**= Ag TERMINATION, Cu BARRIER LAYER, HEAVY SnPb PLATED SOLDER	A = AXIAL RIBBON B = RADIAL RIBBON C = CENTER RIBBON D = CUSTOMER DEFINED E = AXIAL WIRE F = RADIAL WIRE N = NONE	X = COMMERCIAL Y = REDUCED VISIAL A = GROUP A C = GROUP C D = CUSTOMER SPECIFIED	1 = SINGLE SIDE 2 = DOUBLE SIDE 3 = LARGE SINGLE SIDE 4 = LARGE DOUBLE SIDE 5 = VERTICAL EDGE	T = TAPE & REEL V = VERTICAL TAPE B = BULK W = WAFFLE PACK S = SPECIAL

PRESIDIO: 0805NPQ101K2P3

0805NPQ	100	K	2	P	3
SIZE & DIELECTRIC MATERIAL	CAPACITANCE	TOLERANCE	VOLTAGE	TERMINATION	PACKAGING
0402 = DLI -C04UL 0505 = DLI -C11UL 0603 = DLI -C06UL 0805 = DLI -C08UL 1010 = DLI -C17UL	**FIRST TWO DIGITS =** SIGNIFICANT FIGURES IN CAPACITANCE **THRID DIGIT =** ADDITIONAL NUMBER OF ZEROS EXAMPLES: 620 = 62pF 152 = 1500pF	A = ±0.05pF B = ±0.10pF C = ±0.25pF D = ±0.50pF F = ±1% G = ±2% J = ±5% K = ±10% L = -10% / +20% M = ±20% Z = +80% / -20% P = +100% / -0%	2 = 50V 3 = 100V 4 = 200V 5 = 300V 6 = 500V 9 = 1000V 10 = 1500V 11 = 2000V 12 = 2500V	P= DLI Z TERMINATION CODE	3 = TAPE & REEL