

PERFORMANCE CHARACTERISTICS
GENERAL
Working Voltage:

C0G – 50, 100 & 200 Volts
X7R – 50, 100 & 200 Volts

Temperature Characteristics:

C0G – 0 $\pm$ 30 PPM/°C from -55°C to +125°C
X7R – $\pm$ 15% from -55°C to +125°C

Capacitance Tolerance:

C0G – $\pm$ 0.5 pF, $\pm$ 1%, $\pm$ 2%, $\pm$ 5%, $\pm$ 10%, $\pm$ 20%
($\pm$ 0.5 pF is tightest available tolerance)
X7R – $\pm$ 10%, $\pm$ 20%, -0 +100%, -20% +80%

Construction:

Monolithic block of ceramic dielectric with interdigitated internal electrodes, encapsulated in a molded case, and having axial or radial leads. Meets flame test requirements of UL Standard 94V-0.

Terminal Strength:

EIA-198 Method 303 Condition A (2.2 kg)

ELECTRICAL
Capacitance:

Within specified tolerance when measured with 1 volt rms at 1 kHz (1000 pF or less at 1 MHz for C0G).

Dissipation Factor:

25°C at 1 kHz (1000 pF or less at 1 MHz for C0G).
C0G – .15% maximum
X7R – 2.5% maximum

Insulation Resistance:

After 2 minutes electrification at 25°C and rated voltage
C0G – 100K megohms or 1000 megohm - μ F, whichever is less.
X7R – 100K megohms or 1000 megohm - μ F, whichever is less.

Dielectric Withstanding Voltage:

250% of rated voltage for 5 seconds with current limited to 50 mA at 25°C.

Life Test:

2000 hours at 200% of rated voltage at 125°C. Post-Test limits at 25°C are:

Capacitance Change:

C0G – less than 3% or 0.25 pF, whichever is higher
X7R – $\pm$ 20% of initial value

Dissipation Factor:

C0G – .25% maximum
X7R – 3.0% maximum

Insulation Resistance:

C0G – 10K megohms or 100 megohm - μ F, whichever is less

X7R – 10K megohms or 100 megohm - μ F, whichever is less

Dielectric Withstanding Voltage:

250% of rated voltage for 5 seconds with current limited to 50 mA.

ENVIRONMENTAL
Moisture Resistance:

MIL-STD-202, Method 106, or EIA-198, Method 204, Condition A, except 20 cycles.

Insulation Resistance:

C0G – 10K megohms or 100 megohm - μ F, whichever is less

X7R – 10K megohms or 100 megohm - μ F, whichever is less

Dielectric Withstanding Voltage:

250% of rated voltage for 5 seconds with current limited to 50 mA.

Immersion Cycling:

MIL-STD-202, Method 104, Condition B. Post-Test limits at 25°C are:

Insulation Resistance:

C0G – 10K megohms or 100 megohm - μ F, whichever is less

X7R – 10K megohms or 100 megohm - μ F, whichever is less

Solderability:

MIL-STD-202, Method 208, Sn62 solder, 245°C for 5 $\pm$ 1/2 seconds.

Resistance to Soldering Heat:

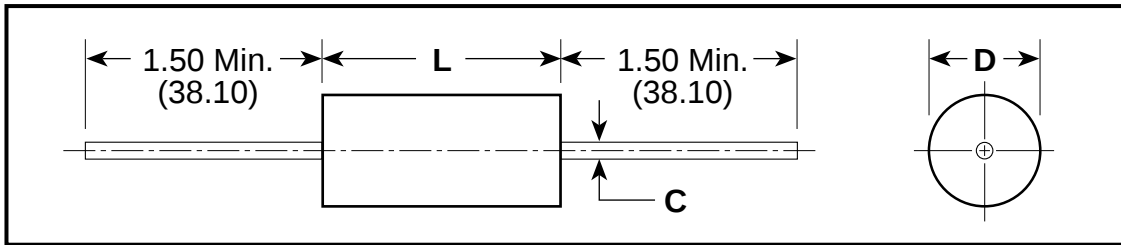
MIL-STD-202, Method 210, Condition B (260°C, 10 secs).
Depth of immersion — to a minimum of .050" from the capacitor body.

Lead Material:

Axial: Solder-coated copper clad steel

Radial: Solder-coated copper standard; 100% tin plated optional

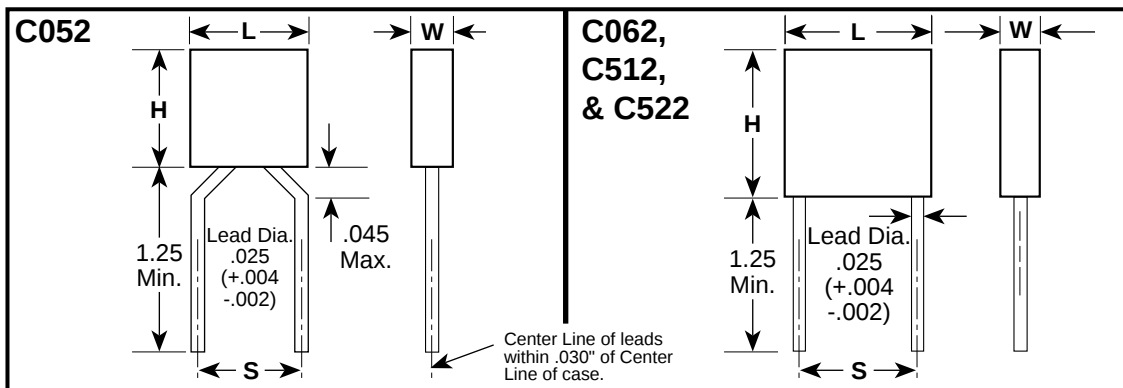
CAPACITOR OUTLINE DRAWINGS — (AXIAL LEADS)



DIMENSIONS—INCHES & (MILLIMETERS)

CASE SIZE	MILITARY EQUIVALENT STYLES	L	D	C
C114	CC75, CCR75 CK12, CKR11	.160 ± .010 (4.06 ± .25)	.090 ± .010 (2.29 ± .25)	.020, +.000, -.003 (.51, +.00, -.08)
C124	CC76, CCR76 CK13, CKR12	.250 ± .010 (6.35 ± .25)	.090 ± .010 (2.29 ± .25)	.020, +.000, -.003 (.51, +.00, -.08)
C192	CC77, CCR77 CK14, CKR14	.390 ± .010 (9.91 ± .25)	.140 ± .010 (3.56 ± .25)	.025, +.004, -.001 (.64, +.10, -.025)
C202	CC78, CCR78 CK15, CKR15	.500 ± .020 (12.70 ± .51)	.250 ± .015 (6.35 ± .38)	.025, +.004, -.001 (.64, +.10, -.025)
C222	CC79, CCR79 CK16, CKR16	.690 ± .030 (17.53 ± .76)	.350 ± .020 (8.89 ± .51)	.025, +.004, -.001 (.64, +.10, -.025)

CAPACITOR OUTLINE DRAWINGS — (RADIAL LEADS)



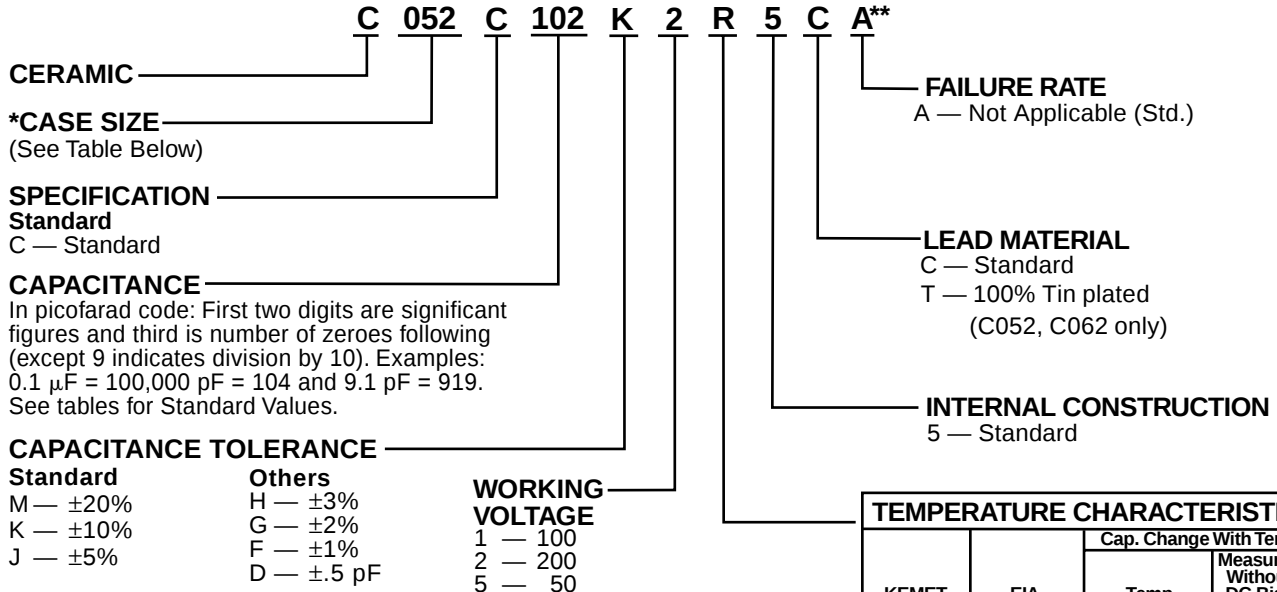
DIMENSIONS—INCHES & (MILLIMETERS)

CASE SIZE	MILITARY EQUIVALENT STYLES	H HEIGHT	L LENGTH	W WIDTH	S LEAD SPACING
C052	CC05, CCR05 CK05, CKR05	.190 ± .010 (4.83 ± .25)	.190 ± .010 (4.83 ± .25)	.090 ± .010 (2.29 ± .25)	.200 ± .015 (5.08 ± .38)
C062	CC06, CCR06 CK06, CKR06	.290 ± .010 (7.37 ± .25)	.290 ± .010 (7.37 ± .25)	.090 ± .010 (2.29 ± .25)	.200 ± .015 (5.08 ± .38)
C512	CC07, CCR07	.480 ± .020 (12.19 ± .51)	.480 ± .020 (12.19 ± .51)	.140 ± .010 (3.56 ± .25)	.400 ± .020 (10.16 ± .51)
C522	CC08, CCR08	.480 ± .020 (12.19 ± .51)	.480 ± .020 (12.19 ± .51)	.240 ± .010 (6.10 ± .25)	.400 ± .020 (10.16 ± .51)



CERAMIC MOLDED/AXIAL & RADIAL - STANDARD

ORDERING INFORMATION



Standard tolerances for each Series are shown in the repetitive parts lists.

*CASE SIZES	
RADIAL	AXIAL
C052	C114
C062	C124
C512	C192
C522	C202
	C222

TEMPERATURE CHARACTERISTIC			
KEMET Designator	EIA Equivalent	Cap. Change With Temp.	
		Temp. Range, °C	Measured Without DC Bias Voltage
G (Ultra Stable)	C0G (NPO)	-55 to +125	± 30 ppm/°C
R (Stable)	X7R	-55 to +125	$\pm 15\%$

****Part Number Example: C052C102K2R5CA (14 digits – no spaces)**

AXIAL CAPACITOR MARKING

STANDARD C114C, C124C, C192C, C202C & C222C

KC0G	———— KEMET, Temperature Characteristic
101J	———— Capacitance, Capacitance Tolerance
200V	———— Voltage
0512	———— Date Code

RADIAL CAPACITOR MARKING

C052C & C062C STANDARD MARKING

	FRONT	BACK	
Style	C062	100V	Voltage
Temperature Characteristic	X7R	K	KEMET
Capacitance, Capacitance Tolerance	104K	0511	Date Code

C512 & C522 STANDARD MARKING

KEMET	———— KEMET
C512X7R	———— SIZE and Temperature Characteristic
105K 50V	———— Capacitance, Capacitance Tolerance, Voltage
0532	———— Date Code

CERAMIC MOLDED/AXIAL - STANDARD

ULTRA-STABLE TEMPERATURE CHARACTERISTIC—C0G (NP0)



RATINGS & PART NUMBER REFERENCE

CAPACITANCE pF	KEMET PART NUMBER
200 VOLT — C114 STANDARD C0G	
1.0	C114C109(1)2G5CA
1.5	C114C159(1)2G5CA
2.2	C114C229(1)2G5CA
2.7	C114C279(1)2G5CA
3.3	C114C339(1)2G5CA
3.9	C114C399(1)2G5CA
4.7	C114C479(1)2G5CA
5.6	C114C569(1)2G5CA
6.8	C114C689(1)2G5CA
8.2	C114C829(1)2G5CA
10.0	C114C100(2)2G5CA
12.0	C114C120(2)2G5CA
15.0	C114C150(2)2G5CA
18.0	C114C180(2)2G5CA
22.0	C114C220(2)2G5CA
27.0	C114C270(3)2G5CA
33.0	C114C330(3)2G5CA
39.0	C114C390(3)2G5CA
47.0	C114C470(3)2G5CA
56.0	C114C560(4)2G5CA
68.0	C114C680(4)2G5CA
82.0	C114C820(4)2G5CA
100.0	C114C101(4)2G5CA
120.0	C114C121(4)2G5CA
150.0	C114C151(4)2G5CA
180.0	C114C181(4)2G5CA
220.0	C114C221(4)2G5CA
270.0	C114C271(4)2G5CA
330.0	C114C331(4)2G5CA
100 VOLT — C114 STANDARD C0G	
82.0	C114C820(4)1G5CA
100.0	C114C101(4)1G5CA
120.0	C114C121(4)1G5CA
150.0	C114C151(4)1G5CA
180.0	C114C181(4)1G5CA
220.0	C114C221(4)1G5CA
270.0	C114C271(4)1G5CA
330.0	C114C331(4)1G5CA
390.0	C114C391(4)1G5CA
470.0	C114C471(4)1G5CA
560.0	C114C561(4)1G5CA
680.0	C114C681(4)1G5CA

CAPACITANCE pF	KEMET PART NUMBER
200 VOLT — C124 STANDARD C0G	
390.0	C124C391(4)2G5CA
470.0	C124C471(4)2G5CA
560.0	C124C561(4)2G5CA
100 VOLT — C124 STANDARD C0G	
820.0	C124C821(4)1G5CA
1,000.0	C124C102(4)1G5CA
200 VOLT — C192 STANDARD C0G	
680.0	C192C681(4)2G5CA
820.0	C192C821(4)2G5CA
1,000.0	C192C102(4)2G5CA
1,200.0	C192C122(4)2G5CA
1,500.0	C192C152(4)2G5CA
1,800.0	C192C182(4)2G5CA
2,200.0	C192C222(4)2G5CA
2,700.0	C192C272(4)2G5CA
3,300.0	C192C332(4)2G5CA
3,900.0	C192C392(4)2G5CA
4,700.0	C192C472(4)2G5CA
100 VOLT — C192 STANDARD C0G	
1,200.0	C192C122(4)1G5CA
1,500.0	C192C152(4)1G5CA
1,800.0	C192C182(4)1G5CA
2,200.0	C192C222(4)1G5CA
2,700.0	C192C272(4)1G5CA
3,300.0	C192C332(4)1G5CA
3,900.0	C192C392(4)1G5CA
4,700.0	C192C472(4)1G5CA
5,600.0	C192C562(4)1G5CA
6,800.0	C192C682(4)1G5CA
8,200.0	C192C822(4)1G5CA

CAPACITANCE pF	KEMET PART NUMBER
200 VOLT — C202 STANDARD C0G	
5,600.0	C202C562(4)2G5CA
6,800.0	C202C682(4)2G5CA
8,200.0	C202C822(4)2G5CA
10,000.0	C202C103(4)2G5CA
12,000.0	C202C123(4)2G5CA
15,000.0	C202C153(4)2G5CA
18,000.0	C202C183(4)2G5CA
22,000.0	C202C223(4)2G5CA
100 VOLT — C202 STANDARD C0G	
10,000.0	C202C103(4)1G5CA
12,000.0	C202C123(4)1G5CA
15,000.0	C202C153(4)1G5CA
18,000.0	C202C183(4)1G5CA
22,000.0	C202C223(4)1G5CA
27,000.0	C202C273(4)1G5CA
33,000.0	C202C333(4)1G5CA
200 VOLT — C222 STANDARD C0G	
27,000.0	C222C273(4)2G5CA
33,000.0	C222C333(4)2G5CA
39,000.0	C222C393(4)2G5CA
47,000.0	C222C473(4)2G5CA
100 VOLT — C222 STANDARD C0G	
39,000.0	C222C393(4)1G5CA
47,000.0	C222C473(4)1G5CA
56,000.0	C222C563(4)1G5CA
68,000.0	C222C683(4)1G5CA
82,000.0	C222C823(4)1G5CA
100,000.0	C222C104(4)1G5CA

NOTE 1: Insert proper symbol for capacitance tolerance as follows:

- (1) 1.0 pF to 8.2 pF: D— ±5 pF
- (2) 10.0 pF to 22 pF: J— ±5%, K— ±10%
- (3) 27.0 pF to 47 pF: G— ±2%, J— ±5%, K— ±10%
- (4) 56.0 pF and up: F— ±1%, G— ±2%, J— ±5%, K— ±10%

NOTE 1: Insert proper symbol for capacitance tolerance as follows:

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- (3) 27.0 pF to 47 pF: G— ±2%, J— ±5%, K— ±10%
- (4) 56.0 pF and up: F— ±1%, G— ±2%, J— ±5%, K— ±10%



CERAMIC MOLDED/RADIAL – STANDARD

ULTRA-STABLE TEMPERATURE CHARACTERISTIC—C0G (NP0)

RATINGS & PART NUMBER REFERENCE

CAPACITANCE pF	KEMET PART NUMBER
200 VOLT — C052 SIZE C0G	
1.0	C052C109(1)2G5CA
1.5	C052C159(1)2G5CA
2.2	C052C229(1)2G5CA
2.7	C052C279(1)2G5CA
3.3	C052C339(1)2G5CA
3.9	C052C399(1)2G5CA
4.7	C052C479(1)2G5CA
5.6	C052C569(1)2G5CA
6.8	C052C689(1)2G5CA
8.2	C052C829(1)2G5CA
10.0	C052C100(2)2G5CA
12.0	C052C120(2)2G5CA
15.0	C052C150(2)2G5CA
18.0	C052C180(2)2G5CA
22.0	C052C220(2)2G5CA
27.0	C052C270(3)2G5CA
33.0	C052C330(3)2G5CA
39.0	C052C390(3)2G5CA
47.0	C052C470(3)2G5CA
56.0	C052C560(4)2G5CA
68.0	C052C680(4)2G5CA
82.0	C052C820(4)2G5CA
100.0	C052C101(4)2G5CA
120.0	C052C121(4)2G5CA
150.0	C052C151(4)2G5CA
180.0	C052C181(4)2G5CA
220.0	C052C221(4)2G5CA
270.0	C052C271(4)2G5CA
330.0	C052C331(4)2G5CA
390.0	C052C391(4)2G5CA
470.0	C052C471(4)2G5CA
560.0	C052C561(4)2G5CA
680.0	C052C681(4)2G5CA
820.0	C052C821(4)2G5CA
1,000.0	C052C102(4)2G5CA
1,200.0	C052C122(4)2G5CA
1,500.0	C052C152(4)2G5CA
1,800.0	C052C182(4)2G5CA
2,200.0	C052C222(4)2G5CA
2,700.0	C052C272(4)2G5CA
100 VOLT — C052 SIZE C0G	
390.0	C052C391(4)1G5CA
470.0	C052C471(4)1G5CA
560.0	C052C561(4)1G5CA
680.0	C052C681(4)1G5CA
820.0	C052C821(4)1G5CA
1,000.0	C052C102(4)1G5CA
1,200.0	C052C122(4)1G5CA
1,500.0	C052C152(4)1G5CA
1,800.0	C052C182(4)1G5CA
2,200.0	C052C222(4)1G5CA
2,700.0	C052C272(4)1G5CA
3,300.0	C052C332(4)1G5CA
3,900.0	C052C392(4)1G5CA
4,700.0	C052C472(4)1G5CA

CAPACITANCE pF	KEMET PART NUMBER
200 VOLT — C062 SIZE C0G	
3,300.0	C062C332(4)2G5CA
3,900.0	C062C392(4)2G5CA
4,700.0	C062C472(4)2G5CA
5,600.0	C062C562(4)2G5CA
6,800.0	C062C682(4)2G5CA
8,200.0	C062C822(4)2G5CA
10,000.0	C062C103(4)2G5CA
100 VOLT — C062 SIZE C0G	
5,600.0	C062C562(4)1G5CA
6,800.0	C062C682(4)1G5CA
8,200.0	C062C822(4)1G5CA
10,000.0	C062C103(4)1G5CA
12,000.0	C062C123(4)1G5CA
15,000.0	C062C153(4)1G5CA
18,000.0	C062C183(4)1G5CA
22,000.0	C062C223(4)1G5CA
200 VOLT — C512 SIZE C0G	
12,000.0	C512C123(4)2G5CA
15,000.0	C512C153(4)2G5CA
18,000.0	C512C183(4)2G5CA
22,000.0	C512C223(4)2G5CA
27,000.0	C512C273(4)2G5CA
33,000.0	C512C333(4)2G5CA
39,000.0	C512C393(4)2G5CA
47,000.0	C512C473(4)2G5CA
56,000.0	C512C563(4)2G5CA
68,000.0	C512C683(4)2G5CA
100 VOLT — C512 SIZE C0G	
27,000.0	C512C273(4)1G5CA
33,000.0	C512C333(4)1G5CA
39,000.0	C512C393(4)1G5CA
47,000.0	C512C473(4)1G5CA
56,000.0	C512C563(4)1G5CA
68,000.0	C512C683(4)1G5CA
82,000.0	C512C823(4)1G5CA
100,000.0	C512C104(4)1G5CA
200 VOLT — C522 SIZE C0G	
82,000.0	C522C823(4)2G5CA
100,000.0	C522C104(4)2G5CA
100 VOLT — C522 SIZE C0G	
120,000.0	C522C124(4)1G5CA
150,000.0	C522C154(4)1G5CA
180,000.0	C522C184(4)1G5CA

NOTE 1: Insert proper symbol for capacitance tolerance as follows:

- (1) 1.0 pF to 8.2 pF: D— ± 5 pF
- (2) 10.0 pF to 22 pF: J— $\pm 5\%$, K— $\pm 10\%$
- (3) 27.0 pF to 47 pF: G— $\pm 2\%$, J— $\pm 5\%$, K— $\pm 10\%$
- (4) 56.0 pF and up: F— $\pm 1\%$, G— $\pm 2\%$, J— $\pm 5\%$, K— $\pm 10\%$

NOTE 1: Insert proper symbol for capacitance tolerance as follows:

- (1) 1.0 pF to 8.2 pF: D— ± 5 pF
- (2) 10.0 pF to 22 pF: J— $\pm 5\%$, K— $\pm 10\%$
- (3) 27.0 pF to 47 pF: G— $\pm 2\%$, J— $\pm 5\%$, K— $\pm 10\%$
- (4) 56.0 pF and up: F— $\pm 1\%$, G— $\pm 2\%$, J— $\pm 5\%$, K— $\pm 10\%$

CERAMIC MOLDED/AXIAL – STANDARD

STABLE TEMPERATURE CHARACTERISTIC—X7R



RATINGS & PART NUMBER REFERENCE

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
100 VOLT — C114 SIZE		
10	10	C114C100K1R5CA
10	20	C114C100M1R5CA
12	10	C114C120K1R5CA
15	10	C114C150K1R5CA
15	20	C114C150M1R5CA
18	10	C114C180K1R5CA
22	20	C114C220K1R5CA
22	10	C114C220M1R5CA
27	10	C114C270K1R5CA
33	10	C114C330K1R5CA
33	20	C114C330M1R5CA
39	10	C114C390K1R5CA
47	10	C114C470K1R5CA
47	20	C114C470M1R5CA
56	10	C114C560K1R5CA
68	10	C114C680K1R5CA
68	20	C114C680M1R5CA
82	10	C114C820K1R5CA
100	10	C114C101K1R5CA
100	20	C114C101M1R5CA
120	10	C114C121K1R5CA
150	10	C114C151K1R5CA
150	20	C114C151M1R5CA
180	10	C114C181K1R5CA
220	10	C114C221K1R5CA
220	20	C114C221M1R5CA
270	10	C114C271K1R5CA
330	10	C114C331K1R5CA
330	20	C114C331M1R5CA
390	10	C114C391K1R5CA
470	10	C114C471K1R5CA
470	20	C114C471M1R5CA
560	10	C114C561K1R5CA
680	10	C114C681K1R5CA
680	20	C114C681M1R5CA
820	10	C114C821K1R5CA
1,000	10	C114C102K1R5CA
1,000	20	C114C102M1R5CA
1,200	10	C114C122K1R5CA
1,500	10	C114C152K1R5CA
1,500	20	C114C152M1R5CA
1,800	10	C114C182K1R5CA
2,200	10	C114C222K1R5CA
2,200	20	C114C222M1R5CA
2,700	10	C114C272K1R5CA
3,300	10	C114C332K1R5CA
3,300	20	C114C332M1R5CA
3,900	10	C114C392K1R5CA
4,700	10	C114C472K1R5CA
4,700	20	C114C472M1R5CA
50 VOLT — C114 SIZE		
5,600	10	C114C562K5R5CA
6,800	10	C114C682K5R5CA
6,800	20	C114C682M5R5CA
8,200	10	C114C822K5R5CA
10,000	10	C114C103K5R5CA
10,000	20	C114C103M5R5CA

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
100 VOLT — C124 SIZE		
5,600	10	C124C562K1R5CA
6,800	10	C124C682K1R5CA
6,800	20	C124C682M1R5CA
8,200	10	C124C822K1R5CA
10,000	10	C124C103K1R5CA
10,000	20	C124C103M1R5CA
50 VOLT — C124 SIZE		
12,000	10	C124C123K5R5CA
15,000	10	C124C153K5R5CA
15,000	20	C124C153M5R5CA
18,000	10	C124C183K5R5CA
22,000	10	C124C223K5R5CA
22,000	20	C124C223M5R5CA
27,000	10	C124C273K5R5CA
33,000	10	C124C333K5R5CA
33,000	20	C124C333M5R5CA
39,000	10	C124C393K5R5CA
47,000	10	C124C473K5R5CA
47,000	20	C124C473M5R5CA
100 VOLT — C192 SIZE		
12,000	10	C192C123K1R5CA
15,000	10	C192C153K1R5CA
15,000	20	C192C153M1R5CA
18,000	10	C192C183K1R5CA
22,000	10	C192C223K1R5CA
22,000	20	C192C223M1R5CA
27,000	10	C192C273K1R5CA
33,000	10	C192C333K1R5CA
33,000	20	C192C333M1R5CA
39,000	10	C192C393K1R5CA
47,000	10	C192C473K1R5CA
47,000	20	C192C473M1R5CA
56,000	10	C192C563K1R5CA
68,000	10	C192C683K1R5CA
68,000	20	C192C683M1R5CA
82,000	10	C192C823K1R5CA
100,000	10	C192C104K1R5CA
100,000	20	C192C104M1R5CA
50 VOLT — C192 SIZE		
56,000	10	C192C563K5R5CA
68,000	10	C192C683K5R5CA
68,000	20	C192C683M5R5CA
82,000	10	C192C823K5R5CA
100,000	10	C192C104K5R5CA
100,000	20	C192C104M5R5CA
120,000	10	C192C124K5R5CA
150,000	10	C192C154K5R5CA
150,000	20	C192C154M5R5CA
180,000	10	C192C184K5R5CA
220,000	10	C192C224K5R5CA
220,000	20	C192C224M5R5CA
270,000	10	C192C274K5R5CA

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
100 VOLT — C202 SIZE		
56,000	10	C202C563K1R5CA
68,000	10	C202C683K1R5CA
68,000	20	C202C683M1R5CA
82,000	10	C202C823K1R5CA
100,000	10	C202C104K1R5CA
100,000	20	C202C104M1R5CA
120,000	10	C202C124K1R5CA
150,000	10	C202C154K1R5CA
150,000	20	C202C154M1R5CA
180,000	10	C202C184K1R5CA
220,000	10	C202C224K1R5CA
220,000	20	C202C224M1R5CA
270,000	10	C202C274K1R5CA
330,000	10	C202C334K1R5CA
330,000	20	C202C334M1R5CA
50 VOLT — C202 SIZE		
470,000	10	C202C474K5R5CA
470,000	20	C202C474M5R5CA
680,000	10	C202C684K5R5CA
680,000	20	C202C684M5R5CA
1,000,000	10	C202C105K5R5CA
1,000,000	20	C202C105M5R5CA
100 VOLT — C222 SIZE		
470,000	10	C222C474K1R5CA
470,000	20	C222C474M1R5CA
680,000	10	C222C684K1R5CA
680,000	20	C222C684M1R5CA
1,000,000	10	C222C105K1R5CA
1,000,000	20	C222C105M1R5CA
50 VOLT — C222 SIZE		
2,200,000	10	C222C225K5R5CA
2,200,000	20	C222C225M5R5CA
3,300,000	10	C222C335K5R5CA
3,300,000	20	C222C335M5R5CA



CERAMIC MOLDED/RADIAL – STANDARD

STABLE TEMPERATURE CHARACTERISTIC—X7R

RATINGS & PART NUMBER REFERENCE

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
200 VOLT — C052 SIZE		
10	10	C052C100K2R5CA
10	20	C052C100M2R5CA
12	10	C052C120K2R5CA
15	10	C052C150K2R5CA
15	20	C052C150M2R5CA
18	10	C052C180K2R5CA
22	10	C052C220K2R5CA
22	20	C052C220M2R5CA
27	10	C052C270K2R5CA
33	10	C052C330K2R5CA
33	20	C052C330M2R5CA
39	10	C052C390K2R5CA
47	10	C052C470K2R5CA
47	20	C052C470M2R5CA
56	10	C052C560K2R5CA
68	10	C052C680K2R5CA
68	20	C052C680M2R5CA
82	10	C052C820K2R5CA
100	10	C052C101K2R5CA
100	20	C052C101M2R5CA
120	10	C052C121K2R5CA
150	10	C052C151K2R5CA
150	20	C052C151M2R5CA
180	10	C052C181K2R5CA
220	10	C052C221K2R5CA
220	20	C052C221M2R5CA
270	10	C052C271K2R5CA
330	10	C052C331K2R5CA
330	20	C052C331M2R5CA
390	10	C052C391K2R5CA
470	10	C052C471K2R5CA
470	20	C052C471M2R5CA
560	10	C052C561K2R5CA
680	10	C052C681K2R5CA
680	20	C052C681M2R5CA
820	10	C052C821K2R5CA
1,000	10	C052C102K2R5CA
1,000	20	C052C102M2R5CA

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
100 VOLT — C052 SIZE		
1,200	10	C052C122K1R5CA
1,500	10	C052C152K1R5CA
1,500	20	C052C152M1R5CA
1,800	10	C052C182K1R5CA
2,200	10	C052C222K1R5CA
2,200	20	C052C222M1R5CA
2,700	10	C052C272K1R5CA
3,300	10	C052C332K1R5CA
3,300	20	C052C332M1R5CA
3,900	10	C052C392K1R5CA
4,700	10	C052C472K1R5CA
4,700	20	C052C472M1R5CA
5,600	10	C052C562K1R5CA
6,800	10	C052C682K1R5CA
6,800	20	C052C682M1R5CA
8,200	10	C052C822K1R5CA
10,000	10	C052C103K1R5CA
10,000	20	C052C103M1R5CA
50 VOLT — C052 SIZE		
12,000	10	C052C123K5R5CA
15,000	10	C052C153K5R5CA
15,000	20	C052C153M5R5CA
18,000	10	C052C183K5R5CA
22,000	10	C052C223K5R5CA
22,000	20	C052C223M5R5CA
27,000	10	C052C273K5R5CA
33,000	10	C052C333K5R5CA
33,000	20	C052C333M5R5CA
39,000	10	C052C393K5R5CA
47,000	10	C052C473K5R5CA
47,000	20	C052C473M5R5CA
56,000	10	C052C563K5R5CA
68,000	10	C052C683K5R5CA
68,000	20	C052C683M5R5CA
82,000	10	C052C823K5R5CA
100,000	10	C052C104K5R5CA
100,000	20	C052C104M5R5CA
200 VOLT — C062 SIZE		
1,200	10	C062C122K2R5CA
1,500	10	C062C152K2R5CA
1,500	20	C062C152M2R5CA
1,800	10	C062C182K2R5CA
2,200	10	C062C222K2R5CA
2,200	20	C062C222M2R5CA
2,700	10	C062C272K2R5CA
3,300	10	C062C332K2R5CA
3,300	20	C062C332M2R5CA
3,900	10	C062C392K2R5CA
4,700	10	C062C472K2R5CA
4,700	20	C062C472M2R5CA
5,600	10	C062C562K2R5CA
6,800	10	C062C682K2R5CA
6,800	20	C062C682M2R5CA
8,200	10	C062C822K2R5CA
10,000	10	C062C103K2R5CA
10,000	20	C062C103M2R5CA

CAPACITANCE pF	TOL. %	KEMET PART NUMBER
100 VOLT — C062 SIZE		
12,000	10	C062C123K1R5CA
15,000	10	C062C153K1R5CA
15,000	20	C062C153M1R5CA
18,000	10	C062C183K1R5CA
22,000	10	C062C223K1R5CA
22,000	20	C062C223M1R5CA
27,000	10	C062C273K1R5CA
33,000	10	C062C333K1R5CA
33,000	20	C062C333M1R5CA
39,000	10	C062C393K1R5CA
47,000	10	C062C473K1R5CA
47,000	20	C062C473M1R5CA
56,000	10	C062C563K1R5CA
68,000	10	C062C683K1R5CA
68,000	20	C062C683M1R5CA
82,000	10	C062C823K1R5CA
100,000	10	C062C104K1R5CA
100,000	20	C062C104M1R5CA
50 VOLT — C062 SIZE		
120,000	10	C062C124K5R5CA
150,000	10	C062C154K5R5CA
150,000	20	C062C154M5R5CA
180,000	10	C062C184K5R5CA
220,000	10	C062C224K5R5CA
220,000	20	C062C224M5R5CA
270,000	10	C062C274K5R5CA
330,000	10	C062C334K5R5CA
330,000	20	C062C334M5R5CA
390,000	10	C062C394K5R5CA
470,000	10	C062C474K5R5CA
470,000	20	C062C474M5R5CA
560,000	10	C062C564K5R5CA
680,000	10	C062C684K5R5CA
680,000	20	C062C684M5R5CA
820,000	10	C062C824K5R5CA
1,000,000	10	C062C105K5R5CA
1,000,000	20	C062C105M5R5CA
50 VOLT — C512 SIZE		
1,000,000	10	C512C105K5X5CA
1,000,000	20	C512C105M5X5CA
1,500,000	10	C512C155K5X5CA
1,500,000	20	C512C155M5X5CA
2,000,000	10	C512C205K5X5CA
2,000,000	20	C512C205M5X5CA
2,200,000	10	C512C225K5X5CA
2,200,000	20	C512C225M5X5CA
100 VOLT — C522 SIZE		
1,000,000	10	C522C105K1X5CA
1,000,000	20	C522C105M1X5CA
50 VOLT — C522 SIZE		
2,700,000	10	C522C275K5X5CA
2,700,000	20	C522C275M5X5CA
3,300,000	10	C522C335K5X5CA
3,300,000	20	C522C335M5X5CA

Ceramic Axial
Lead Tape and Reel Packaging

KEMET offers standard reeling of Molded and Conformally Coated Axial Leaded Ceramic Capacitors for automatic insertion or lead forming machines per EIA specification RS-296. KEMET'S internal specification four-digit suffix, 7200, is placed at the end of the part number to designate tape and reel packaging, ie: C410C104Z5U5CA7200.

Paper (50 lb.) test minimum is inserted between the layers of capacitors wound on reels for component pitch $\leq 0.400"$. Capacitor lead length may extend only a maximum of $.0625"$ (1.59mm) beyond the tapes' edges. Capacitors are centered in a row between the two tapes and will deviate only ± 0.031 (0.79mm) from the row center. A minimum of 36" (91.5 cm) leader tape is provided at each end of the reel capacitors. Universal splicing clips are used to connect the tape. Standard reel quantities are shown on page 41.

Figure 1

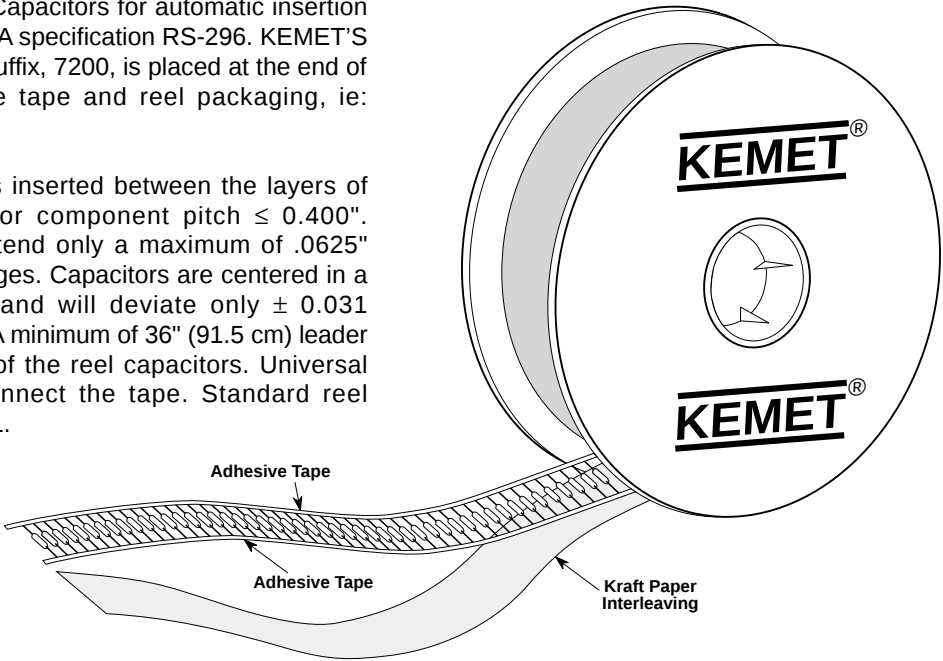


Figure 2

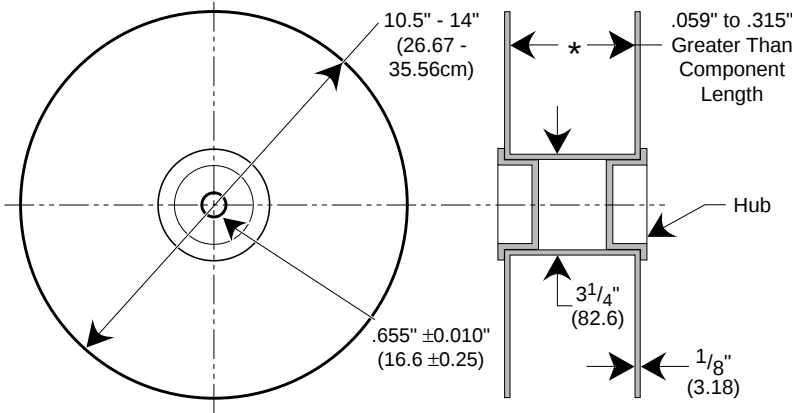


Figure 3

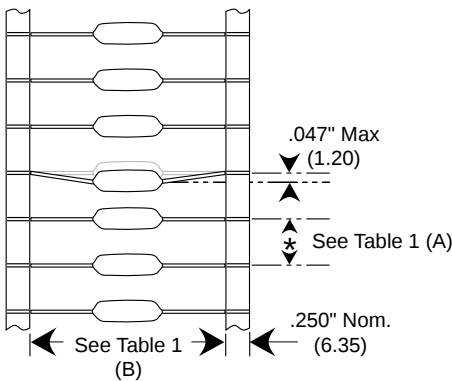


Table 1 Dimensions in Inches & (Millimeters)

Component Body Diameter	Component Pitch "A"	Inside Tape Spacing "B" $\pm 1.5\text{mm}$ (0.059")	
	0.020" or ($\pm 0.5\text{mm}$)	I	III*
0" (0mm) to 0.197" (5mm) 0.197" (5.01mm) to 0.394: (10mm)	0.197" or (5mm) 0.394" or (10mm)	2.062" (52.4mm)	2.874" (73mm)

* Not Available for Conformally Coated Parts.



CERAMIC LEADED PACKAGING INFORMATION

Ceramic Radial Lead Tape and Reel Packaging

KEMET offers standard reeling of Molded and Conformally Coated Radial Leaded Ceramic Capacitors for automatic insertion per EIA specification RS-468. Parts are taped to a tagboard carrier strip, and wound on a reel as shown in Figure 1. Kraft paper interleaving is inserted between the layers of capacitors on the reel. Ammopack is also available, with the same lead tape configuration and package quantities.

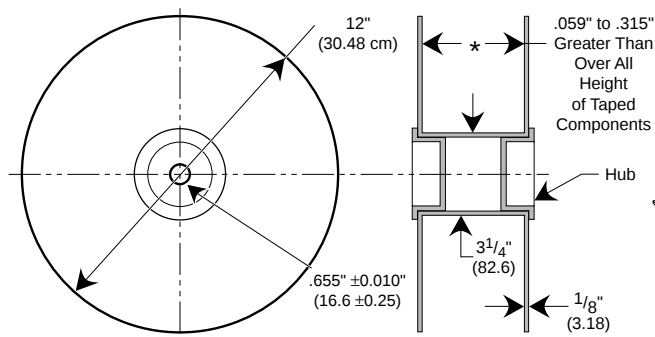


Figure 3: Standard Reel

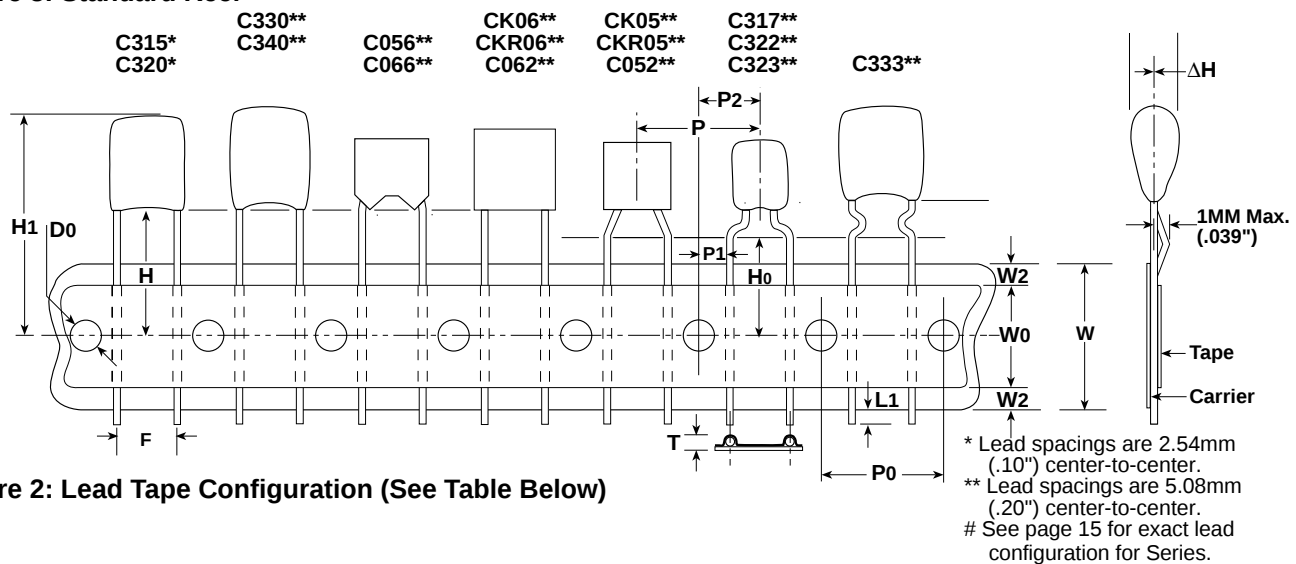
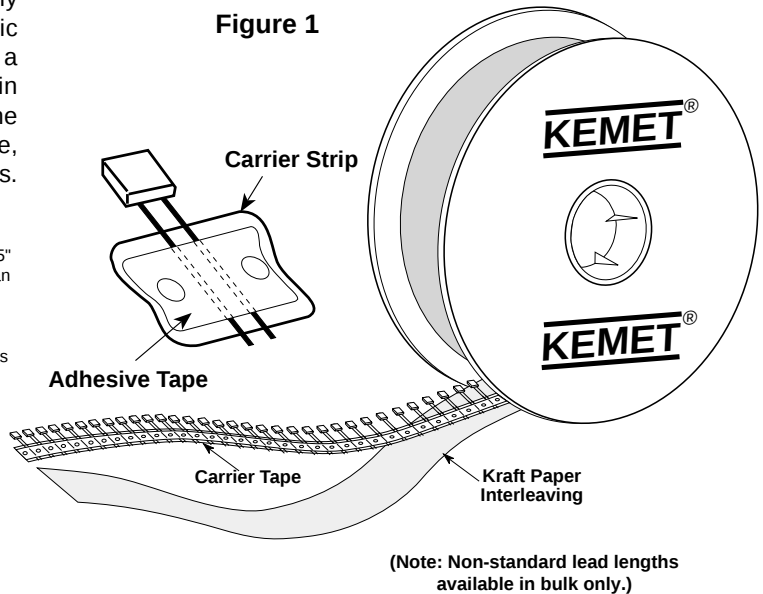


Figure 2: Lead Tape Configuration (See Table Below)

Ceramic Radial Tape and Reel Dimensions in Millimeters & (Inches)

Dimension	Symbol	Nominal mm (inch)	Tolerance mm (inch)	Dimension	Symbol	Nominal mm (inch)	Tolerance mm (inch)
Sprocket Hole Diameter	D0	4.0 (.157)	± 0.2 (.008)	Height to Seating Plane (formed leads) (2)	H0	7301 7303 16.0 (.630) 18.0 (.709)	7301 7303 ±0.5 (.020) Minimum
Sprocket Hole Pitch	P0	12.7 (.500)	± 0.3 (.012)	Component Alignment	Δh	4.0 (.157)	±0.2 (.008)
Component Pitch	P	12.7 (.500)	± 0.3 (.012)	Lead Protrusion	L1	1.0 (.039)	Maximum
Lead Spacing (1)	F	5.08 (.20) 2.54 (.10)	+0.6 -0.2 (+.024 -.008)	Composite Tape Thickness	t	0.7 (.051)	±0.2 (.008)
Sprocket Hole Center to Lead Center (1)	P1	3.81 (.150) 5.08 (.200)	± 0.7 (.028)	Overall Tape and Lead Thickness	T	1.5 (.059)	Maximum
Sprocket Hole Center to Component Center	P2	6.35 (.250)	± 1.3 (.051)	Carrier Tape Width	W	18.0 (.709)	+1.0 - 0.5 (+.039 -.020)
Height to Seating Plane (straight leads) (2)	H	7301 7303 16.0 (.630) 18.0 (.709)	7301 7303 ±0.5 (.020) Minimum	Hold-Down Tape Width	W0	5.0 (.197)	Minimum
Component Height Above Tape Center	H1	32.2 (1.27)	Maximum	Hold-Down Tape Location	W2	3.0 (.118)	Maximum

(1) Measured at the egress from the carrier tape, on the component side.

(2) Determined by a 4 digit suffix placed at the end of the part number, as follows:

7301 = Recommended for parts with formed leads.

7303 = Recommended for parts with straight leads.

Example: C322C104K5R5CA7301

Example: C320C104K5R5CA7303

* Lead spacings are 2.54mm (.10") center-to-center.
** Lead spacings are 5.08mm (.20") center-to-center.
See page 15 for exact lead configuration for Series.

CERAMIC LEADED
PACKAGING INFORMATION



CERAMIC PACKAGING						
KEMET Series	Military Style	Military Specification	Standard (1) Bulk Quantity	Ammo Pack Quantity Maximum	Maximum Reel Quantity	Reel Size
C114C-K-G	CK12, CC75	MIL-C-11015/ MIL-PRF-20	200/Box		5000	12"
C124C-K-G	CK13, CC76		200/Box		5000	12"
C192C-K-G	CK14, CC77		100/Box		3000	12"
C202C-K	CK15		25/Box		500	12"
C222C-K	CK16		10/Tray		300	12"
C052C-K-G	CK05, CC05		100/Bag	2000	2000	12"
C062C-K-G	CK06, CC06		100/Bag	1500	1500	12"
C114G	CCR75	MIL-PRF-20	200/Box		5000	12"
C124G	CCR76		200/Box		5000	12"
C192G	CCR77		100/Box		3000	12"
C202G	CC78-CCR78		25/Box		500	12"
C222G	CC79-CCR79		10/Tray		300	12"
C052/56G	CCR05		100/Bag		1700	12"
C062/66G	CCR06		100/Bag		1500	12"
C512G	CC07-CCR07		Footnote (2)		N/A	N/A
C522G	CC08-CCR08		Footnote (2)		N/A	N/A
C114T	CKR11	MIL-PRF-39014	200/Box		5000	12"
C124T	CKR12		200/Box		5000	12"
C192T	CKR14		100/Box		3000	12"
C202T	CKR15		25/Box		500	12"
C222T	CKR16		10/Tray		300	12"
C052/56T	CKR05		100/Bag		1700	12"
C062/66T	CKR06		100/Bag		1500	12"
C31X			500/Bag	2500	2500	12"
C32X			500/Bag	2500	2500	12"
C33X			250/Bag	1500	1500	12"
C340			100/Bag	1000	1000	12"
C350			50/Bag	N/A	N/A	N/A
C410			300/Box	4000	5000	12"
C412			200/Box	4000	5000	12"
C420			300/Box	4000	5000	12"
C430			200/Box	2000	2500	12"
C440			200/Box	2000	2500	12"
C512	N/A	N/A	Footnote (2)		N/A	N/A
C522	N/A	N/A	Footnote (2)		N/A	N/A
C617			500/Bag			
C622/C623			500/Bag			
C627/C628			500/Bag			
C630/C631			250/Bag			
C637/C638			250/Bag			
C640/C641			100/Bag			
C642/C643			100/Bag			
C647/C648			100/Bag			
C657/C658			50/Bag			
C667/C668			50/Bag			

NOTE: (1) Standard packaging refers to number of pieces per bag, tray or vial.

(2) Quantity varies. For further details, please consult the factory.

Tape and Reel Packaging