Radial Leaded Aluminum Electrolytic Capacitors

REF Series

FEATURES

- Super Low Impedance, High ripple current capability
- Endurance: 3000 - 6000 hours at 105°C
- RoHS Compliance and Halogen-free

APPLICATIONS

- Power supplies, general industrial, filtering

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

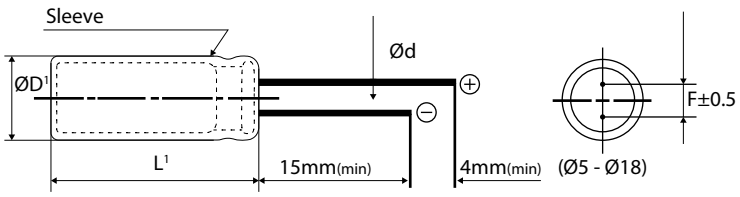
RoHS COMPLIANT

HOW TO ORDER

R	EF	0816	471	M	016	K	-
Product Type Radial Aluminum	**Series Type**	**Case Size** See table below	**Capacitance Code** µF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	**Tolerance** M = ±20%	**Rated DC Voltage** 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc 080 = 80Vdc 100 = 100Vdc 120 = 120Vdc	**Packaging** K = Ammo Pack B = Bulk Pack	**Lead Type** " " empty = Standard long lead "C"= Lead cut only "F"= Lead cut and form "L"= Lead cut and bend (Left) "R"= Lead cut and bend (Right)

CASE DIMENSIONS millimeters (inches)

Code	D'+0.50 (0.020)	L'+2.00 (0.079)	d±0.05 (0.002)	F±0.50 (0.020)	Typical Weight (g)		Code	D'+0.50 (0.020)	L'+2.00 (0.079)	d±0.05 (0.002)	F±0.50 (0.020)	Typical Weight (g)
0511	5.00 (0.020)	11.00 (0.433)	0.50 (0.020)	2.00 (0.079)	0.43		1216	12.50 (0.492)	16.00 (0.630)	0.60 (0.024)	5.00 (0.020)	3.11
0512	5.00 (0.020)	12.00 (0.472)	0.50 (0.020)	2.00 (0.079)	1.05		1220	12.50 (0.492)	20.00 (0.787)	0.60 (0.024)	5.00 (0.020)	3.98
0609	6.30 (0.248)	9.00 (0.354)	0.50 (0.020)	2.50 (0.098)	0.54		1225	12.50 (0.492)	25.00 (0.984)	0.60 (0.024)	5.00 (0.020)	5.01
0611	6.30 (0.248)	11.00 (0.433)	0.50 (0.020)	2.50 (0.098)	0.61		1230	12.50 (0.492)	30.00 (1.181)	0.60 (0.024)	5.00 (0.020)	5.95
0612	6.30 (0.248)	12.00 (0.472)	0.50 (0.020)	2.50 (0.098)	0.69		1235	12.50 (0.492)	35.00 (1.378)	0.60 (0.024)	5.00 (0.020)	6.34
0811	8.00 (0.315)	11.00 (0.433)	0.50 (0.020)	3.50 (0.138)	0.95		1320	13.00 (0.512)	20.00 (0.787)	0.60 (0.024)	5.00 (0.020)	3.97
0812	8.00 (0.315)	12.00 (0.472)	0.50 (0.020)	3.50 (0.138)	1.02		1620	16.00 (0.630)	20.00 (0.787)	0.80 (0.315)	7.50 (0.295)	6.85
0816	8.00 (0.315)	16.00 (0.630)	0.50 (0.020)	3.50 (0.138)	1.34		1625	16.00 (0.630)	25.00 (0.984)	0.80 (0.315)	7.50 (0.295)	8.48
0820	8.00 (0.315)	20.00 (0.787)	0.60 (0.024)	3.50 (0.138)	1.72		1640	16.00 (0.630)	40.00 (1.575)	0.80 (0.315)	7.50 (0.295)	13.85
1009	10.00 (0.394)	9.00 (0.354)	0.60 (0.024)	5.00 (0.020)	1.32		1820	18.00 (0.709)	20.00 (0.787)	0.80 (0.315)	7.50 (0.295)	9.00
1013	10.00 (0.394)	13.00 (0.512)	0.60 (0.024)	5.00 (0.020)	1.65		1825	18.00 (0.709)	25.00 (0.984)	0.80 (0.315)	7.50 (0.295)	9.60
1016	10.00 (0.394)	16.00 (0.630)	0.60 (0.024)	5.00 (0.020)	2.18		1830	18.00 (0.709)	30.00 (1.181)	0.80 (0.315)	7.50 (0.295)	12.00
1020	10.00 (0.394)	20.00 (0.787)	0.60 (0.024)	5.00 (0.020)	2.58		1835	18.00 (0.709)	35.00 (1.378)	0.80 (0.315)	7.50 (0.295)	12.40
1025	10.00 (0.394)	25.00 (0.984)	0.60 (0.024)	5.00 (0.020)	3.11		1840	18.00 (0.709)	40.00 (1.575)	0.80 (0.315)	7.50 (0.295)	16.00



*If different rubber seal is needed, please contact your sales representative.

Radial Leaded Aluminum Electrolytic Capacitors

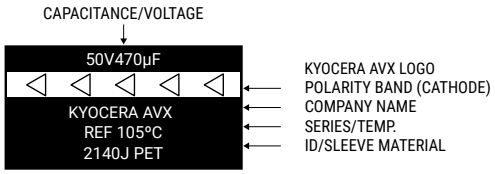
REF Series

TECHNICAL SPECIFICATIONS

Category Temperature Range:	-40°C to +105°C	
Capacitance Range	At 25°C, 120Hz	6.8µF to 6800µF
Capacitance Tolerance:	At 25°C, 120Hz	±20%
Dissipation Factor (%)	Measurement Frequency: 120Hz at 25°C	Please see the ratings and part number reference table below
Leakage Current:	After 2 minutes at rated working voltage at 25°C*	I ≦ 0.01CV or 3µA, whichever is greater

* Note: In the case of an anomalous reading, re-measure the leakage current after following voltage treatment:
Voltage treatment: DC rated voltage to be applied to the capacitors for 120 minutes at 105°C.

MARKING



CAPACITANCE AND RATED VOLTAGE RANGE (FIGURES DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R)									
µF	**Code**	**6.3V**	**10V**	**16V**	**25V**	**35V**	**50V**	**63V**	**80V**	**100V**	**120V**
6.8	6R8									0511 0609	
10	100										0612
22	220						0512			0612	0812
27	270									1009	
33	330					0512		0611		1013	0816 1013
47	470				0511			0612		1013	1016
56	560						0612				1016
68	680									1016	1020
82	820							0812 1013			
100	101		0511 0609	0511	0511 0611	0612 0811	0812	0812 1013		1016	1025
120	121						0816	0816			1320
150	151	0511					1013	1013	1016	1020	1225
180	181						0820				
220	221	0611	0611	0611	0611 0812	0812 1009	1013	1016	1020	1320	1230 1620
270	271						1016				
330	331	0611		0812 1009	0816 1013	1016	1016	1020	1020	1225 1620	1825
470	471	0612	0812	0816 1013	0816	1016	1020	1320	1620	1625	
560	561				1016		1220	1320		1825	
680	681		0816 1013	0820 1016	1020	1220	1220	1620	1825	1640 1835	
820	821				1020		1620	1625		1840	
1000	102	0816	0820 1016	1020	1216	1225	1625	1625 1820	1640 1835		
1200	122	0802 1016		1025		1620					
1500	152	1016		1225	1225	1235		1830			
1800	182							1840			
2200	222	1020	1220	1225	1225						
2700	272			1230 1620	1625						
3300	332	1220	1225	1235 1625							
3900	392			1265							
4700	472	1225	1235								
5600	562		1625								
6800	682	1625									

Released ratings

RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DF Max. (%)	Impedance Max. at 20°C @100kHz (Ω)	100kHz RMS Current (mA) / 105°C	MSL
6.3 Volt							
REF0511151M006*	0511	150	6.3	15	0.290	300	1
REF0611221M006*	0611	220	6.3	15	0.205	377	1
REF0611331M006*	0611	330	6.3	15	0.120	455	1
REF0612471M006*	0612	470	6.3	15	0.100	510	1
REF0816102M006*	0816	1000	6.3	15	0.052	1000	1
REF0820122M006*	0820	1200	6.3	15	0.040	1300	1
REF1016122M006*	1016	1200	6.3	15	0.037	1480	1
REF1016152M006*	1016	1500	6.3	15	0.037	1480	1
REF1020222M006*	1020	2200	6.3	15	0.021	2200	1
REF1220332M006*	1220	3300	6.3	15	0.020	2410	1
REF1225472M006*	1225	4700	6.3	15	0.015	3340	1
REF1625682M006B	1625	6800	6.3	15	0.015	3510	1
10 Volt							
REF0511101M010*	0511	100	10	14	0.290	300	1
REF0609101M010*	0609	100	10	14	0.290	300	1
REF0611221M010*	0611	220	10	14	0.120	455	1
REF0812471M010*	0812	470	10	14	0.071	810	1
REF0816681M010*	0816	680	10	14	0.055	1046	1
REF1013681M010*	1013	680	10	14	0.052	1080	1
REF0820102M010*	0820	1000	10	14	0.040	1300	1
REF1016102M010*	1016	1000	10	14	0.037	1480	1
REF1220222M010*	1220	2200	10	14	0.020	2410	1
REF1225332M010*	1225	3300	10	14	0.020	2820	1
REF1235472M010B	1235	4700	10	14	0.021	3450	1
REF1625562M010B	1625	5600	10	14	0.015	3510	1
16 Volt							
REF0511101M016*	0511	100	16	12	0.210	320	1
REF0611221M016*	0611	220	16	12	0.084	721	1
REF0812331M016*	0812	330	16	12	0.071	810	1
REF1009331M016*	1009	330	16	12	0.092	680	1
REF0816471M016*	0816	470	16	12	0.055	1045	1
REF1013471M016*	1013	470	16	12	0.052	1080	1
REF0820681M016*	0820	680	16	12	0.040	1300	1
REF1016681M016*	1016	680	16	12	0.040	1480	1
REF1020102M016*	1020	1000	16	12	0.023	1870	1
REF1025122M016*	1025	1200	16	12	0.021	2200	1
REF1220152M016*	1220	1500	16	12	0.029	2410	1
REF1225222M016*	1225	2200	16	12	0.021	2200	1
REF1230272M016*	1230	2700	16	12	0.015	3340	1
REF1620272M016B	1620	2700	16	12	0.017	3190	1
REF1235332M016B	1235	3300	16	12	0.014	3450	1
REF1625332M016B	1625	3300	16	12	0.016	3350	1
REF1625392M016B	1625	3900	16	12	0.015	3510	1
25 Volt							
REF0511470M025*	0511	47	25	10	0.290	300	1
REF0511101M025*	0511	100	25	10	0.260	320	1
REF0611101M025*	0611	100	25	10	0.140	455	1
REF0611221M025*	0611	220	25	10	0.150	455	1
REF0812221M025*	0812	220	25	10	0.078	810	1
REF0816331M025*	0816	330	25	10	0.055	1045	1
REF1013331M025*	1013	330	25	10	0.052	1080	1
REF0816471M025*	0816	470	25	10	0.045	1120	1
REF1016561M025*	1016	560	25	10	0.030	1675	1
REF1020681M025*	1020	680	25	10	0.036	1870	1
REF1020821M025*	1020	820	25	10	0.035	1900	1
REF1216102M025*	1216	1000	25	10	0.028	1920	1
REF1225152M025*	1225	1500	25	10	0.030	2750	1
REF1225222M025*	1225	2200	25	10	0.027	2820	1
REF1625272M025B	1625	2700	25	10	0.015	3510	1
35 Volt							
REF0512330M035*	0512	33	35	10	0.570	300	1

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Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DF Max. (%)	Impedance Max. at 20°C @100kHz (Ω)	100kHz RMS Current (mA) / 105°C	MSL
REF0612101M035*	0612	100	35	10	0.450	440	1
REF0811101M035*	0811	100	35	10	0.200	632	1
REF0812221M035*	0812	220	35	10	0.100	810	1
REF1009221M035*	1009	220	35	10	0.120	720	1
REF1016331M035*	1016	330	35	10	0.037	1480	1
REF1016471M035*	1016	470	35	10	0.055	1526	1
REF1220681M035*	1220	680	35	10	0.045	2410	1
REF1225102M035*	1225	1000	35	10	0.025	2820	1
REF1620122M035B	1620	1200	35	10	0.017	3190	1
REF1235152M035B	1235	1500	35	10	0.014	3450	1
50 Volt							
REF0512220M050*	0512	22	50	8	0.540	288	1
REF0612560M050*	0612	56	50	8	0.300	435	1
REF0812101M050*	0812	100	50	8	0.160	774	1
REF0816121M050*	0816	120	50	8	0.130	1000	1
REF1013151M050*	1013	150	50	8	0.110	1029	1
REF0820181M050*	0820	180	50	8	0.085	1240	1
REF1013221M050*	1013	220	50	8	0.130	1029	1
REF1016271M050*	1016	270	50	8	0.090	1020	1
REF1016331M050*	1016	330	50	8	0.045	1150	1
REF1020471M050*	1020	470	50	8	0.036	1500	1
REF1220561M050*	1220	560	50	8	0.035	2150	1
REF1220681M050*	1220	680	50	8	0.040	2100	1
REF1620821M050B	1620	820	50	8	0.022	2780	1
REF1625102M050B	1625	1000	50	8	0.025	3060	1
63 Volt							
REF0611330M063*	0611	33	63	8	1.200	126	1
REF0612470M063*	0612	47	63	8	0.800	150	1
REF0812820M063*	0812	82	63	8	0.480	320	1
REF1013820M063*	1013	82	63	8	0.420	420	1
REF0812101M063*	0812	100	63	8	0.500	280	1
REF1013101M063*	1013	100	63	8	0.300	420	1
REF0816121M063*	0816	120	63	8	0.350	350	1
REF1013151M063*	1013	150	63	8	0.300	400	1
REF1016221M063*	1016	220	63	8	0.160	480	1
REF1020331M063*	1020	330	63	8	0.160	640	1
REF1320471M063B	1320	470	63	8	0.100	880	1
REF1320561M063B	1320	560	63	8	0.086	1180	1
REF1620681M063B	1620	680	63	8	0.085	1250	1
REF1625821M063B	1625	820	63	8	0.057	1570	1
REF1625102M063B	1625	1000	63	8	0.045	1800	1
REF1820102M063B	1820	1000	63	8	0.050	1780	1
REF1830152M063B	1830	1500	63	8	0.036	2150	1
REF1840182M063B	1840	1800	63	8	0.032	2280	1
80 Volt							
REF1016151M080*	1016	150	80	8	0.240	600	1
REF1020221M080*	1020	220	80	8	0.150	680	1
REF1220331M080*	1220	330	80	8	0.120	750	1
REF1620471M080B	1620	470	80	8	0.007	1150	1
REF1825681M080B	1825	680	80	8	0.036	1750	1
REF1640102M080B	1640	1000	80	8	0.029	2200	1
REF1835102M080B	1835	1000	80	8	0.027	2200	1
100 Volt							
REF05116R8M100*	0511	6.8	100	8	1.400	86	1
REF06096R8M100*	0609	6.8	100	8	1.800	80	1
REF0612220M100*	0612	22	100	8	1.000	235	1
REF1009270M100*	1009	27	100	8	0.470	320	1
REF1013330M100*	1013	33	100	8	0.450	320	1
REF1013470M100*	1013	47	100	8	0.320	480	1
REF1016680M100*	1016	68	100	8	0.220	600	1
REF1016101M100*	1016	100	100	8	0.200	750	1
REF1020151M100*	1020	150	100	8	0.170	850	1
REF1320221M100B	1320	220	100	8	0.150	860	1
REF1225331M100*	1225	330	100	8	0.100	1000	1

Radial Leaded Aluminum Electrolytic Capacitors

REF Series

Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	DF Max. (%)	Impedance Max. at 20°C @100kHz (Ω)	100kHz RMS Current (mA) / 105°C	MSL
REF1620331M100B	1620	330	100	8	0.070	1350	1
REF1625471M100B	1625	470	100	8	0.045	1640	1
REF1825561M100B	1825	560	100	8	0.050	1800	1
REF1640681M100B	1640	680	100	8	0.034	2200	1
REF1835681M100B	1835	680	100	8	0.034	2200	1
REF1840821M100B	1840	820	100	8	0.032	2700	1
120 Volt							
REF0612100M120*	0612	10	120	12	5.500	80	1
REF0812220M120*	0812	22	120	12	3.500	130	1
REF0816330M120*	0816	33	120	12	3.000	220	1
REF1013330M120*	1013	33	120	12	3.000	220	1
REF1016470M120*	1016	47	120	12	2.500	270	1
REF1016560M120*	1016	56	120	12	2.200	285	1
REF1020680M120*	1020	68	120	12	1.800	300	1
REF1025101M120*	1025	100	120	12	1.500	380	1
REF1320121M120B	1320	120	120	12	1.300	620	1
REF1225151M120*	1225	150	120	12	1.000	570	1
REF1230221M120*	1230	220	120	12	0.800	750	1
REF1620221M120B	1620	220	120	12	0.600	760	1
REF1825331M120B	1825	330	120	12	0.420	860	1

* Used to denote packing type: “K” for Ammo Pack or “B” for Bulk Pack.
DF = When nominal capacitance exceeds 1000µF, add 0.02 to the value above for each 1000µF increase.
All technical data relates to an ambient temperature of +25C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 2 minutes

RATED RIPPLE CURRENT MULTIPLIERS (FREQUENCY CORRECTION FACTOR FOR RIPPLE CURRENT)

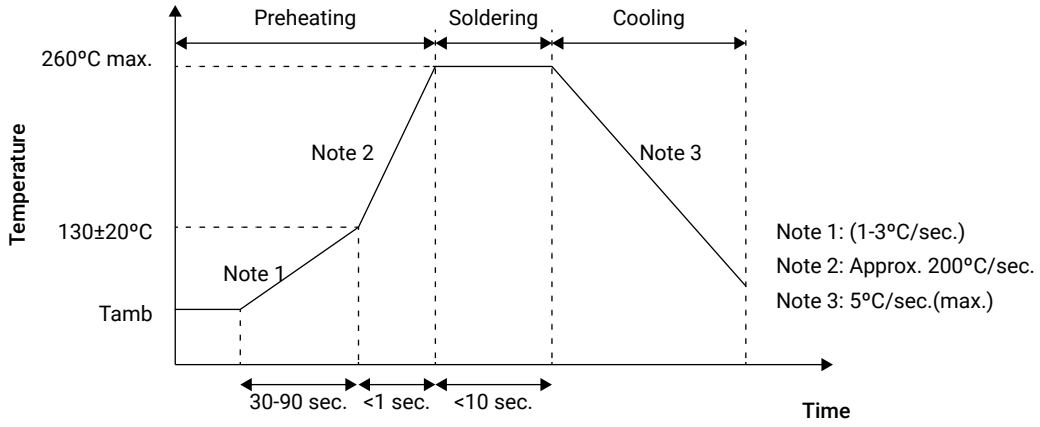
Freq.(Hz) / Cap.(µF)	120	1K	10K	100K
C < 220	0.40	0.75	0.90	1.00
220 ≤ C < 680	0.50	0.85	0.94	1.00
680 ≤ C < 2200	0.60	0.87	0.95	1.00
2200 ≤ C < 4700	0.75	0.90	0.95	1.00
C ≥ 4700	0.85	0.95	0.98	1.00

QUALIFICATION TABLE

Test	REF Series (Temperature Range -40°C to +105°C)						
	Condition	Characteristics					
Low Temperature Characteristic (Max. Impedance Ratio)	120Hz	**Rated Voltage (V)**	6.3	10	16	25-100	120
		Z(-25°C) / Z(20°C)	5	4	3	3	3
		Z(-40°C) / Z(20°C)	10	8	5	4	6
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for a specified period of time at 105°C.	**Visual examination**		no visible damage			
		ΔC/C		≦ ±25% of the initial limit			
		DF:		≦ 200% of the initial specified limit			
		DCL:		≦ Initial specified limit			
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for a specified period of time at 105°C.	**Diameter (mm)**		Load life (hours)			
		ØD≤6.3		3000			
		ØD=8		4000			
		ØD=10		5000			
		ØD≥12.5		6000			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1000 hours.	**Visual examination**		no visible damage			
		ΔC/C		≦ ±25% of the initial limit			
		DF:		≦ 200% of the initial specified limit			
		DCL:		≦ 200% of the initial specified limit			

SOLDERING

1. When soldering with a soldering iron:
   - Soldering conditions (temperature and time) should be within the limits prescribed in the catalogs or the product specifications.
   - If the terminal spacing of a capacitor does not fit the terminal hole spacing of the PC board, reform the terminals in a manner to minimize a mechanical stress into the body of the capacitor.
   - Remove the capacitors from the PC board, after the solder is completely melted, reworking by using a soldering iron minimizes the mechanical stress to the capacitors.
   - Do not touch the capacitor body with the hot tip of the soldering iron.
2. Flow Soldering:
   - Do not dip the body of a capacitor into the solder bath, only dip the terminals in. The soldering must be done on the reverse side of PC board.
   - Do not apply flux to any part of capacitors other than their terminals.
   - Make sure the capacitors do not come into contact with any other components while soldering.
   - Soldering conditions (preheat, solder temperature and dipping time) should be within the limits prescribed in the picture below.



STORAGE

- Store with the temperature range between 5 to 35°C (If between 35 to 85°C, it should be less than three months), and the relative humidity of 75% without direct sunshine and store in the package states if possible.
- It is recommended that you open the bag just before use and use up as early as possible.
- Store the capacitors in places free from water, oil or salt water or in condensation status.
- Never store in any area filled with poisonous gases (including hydrogen sulfide, sulfurous acid, nitrous acid, chlorine and ammonia).
- Store the capacitors in places free from ozone, ultraviolet rays or radiation:

  (Radial Lead Type)

  Before unseal: within 1 year after delivery

  After opening: within 1 month

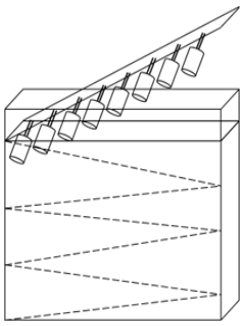
PACKING

Size Code	Bulk Pack					Ammo Pack				
	Bags	Inner Box (LxWxH) 290*216*158		Carton (LxWxH) 455*310*350		Inner Box		Carton		
	Quantity	Bags Number	Quantity / pcs	Inner Box Number	Quantity / pcs	Quantity	Inner Box Size (LxWxH)	Inner Box Quantity	Carton Size (LxWxH)	Whole Pieces
0511	1000	12	12,000	4	48,000	2000	320x230x50	10	485x345x275	20,000
0512	1000	12	12,000	4	48,000	2000	320x230x50	10	485x345x275	20,000
0609	1000	8	8000	4	32,000	2000	340x290x48	10	600x354x265	20,000
0611	1000	8	8000	4	32,000	2000	340x290x48	10	600x354x265	20,000
0612	500	10	5000	4	20,000	2000	340x290x48	10	600x354x265	20,000

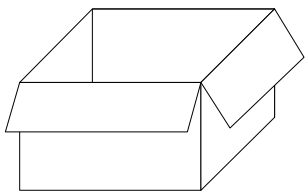
0811	500	10	5000	4	20,000	950	320x230x50	6	485x345x275	5700
0812	500	10	5000	4	20,000	950	320x230x50	6	485x345x275	5700
0816	300	10	3000	4	12,000	950	320x230x55	6	485x345x300	5700
0820	300	10	3000	4	12,000	950	320x230x55	6	485x345x300	5700
1009	250	12	3000	4	12,000	600	320x230x50	6	485x345x275	3600
1013	250	10	2500	4	10,000	600	320x230x50	6	485x345x275	3600
1016	250	10	2500	4	10,000	600	320x230x55	6	485x345x300	3600
1020	200	10	2000	4	8000	600	320x230x55	6	485x345x300	3600
1025	150	10	1500	4	6000	600	320x230x68	8	485x345x300	4800
1216	100	14	1400	4	5600	500	320x290x60	5	330x300x350	2500
1220	100	12	1200	4	4800	500	320x290x60	5	330x300x350	2500
1225	100	10	1000	4	4000	500	320x290x60	5	330x300x350	2500
1230	100	10	1000	4	4000	500	330x230x68	4	330x310x350	2000
1320	100	12	1200	4	4800	-	-	-	-	-
1620	100	5	500	4	2000	-	-	-	-	-
1820	100	5	500	4	2000	-	-	-	-	-

Size Code	Bulk Pack				
	Inner Box		Carton		
	Quantity	Inner Box Size (LxWxH)	Inner Box Quantity	Carton Size (LxWxH)	Whole Pieces
1235	440	340x235x50	5	365x260x315	2200
1625	250	340x235x50	5	365x260x290	1250
1640	200	340x235x50	5	365x260x290	1000
1825	250	340x235x50	5	365x260x290	1250
1830	230	340x235x50	5	365x260x290	1150
1835	200	340x235x50	5	365x260x290	1000
1840	180	340x235x50	5	365x260x290	900

AMMO PACKING



BULK PACKING



LEAD FORMING TAPING SPECIFICATIONS FOR AMMO PACK

Case Diameter	5mm	6.3mm	8mm	10mm	12.5mm
Figure #	Fig. 1	Fig. 1	Fig. 1	Fig. 2	Fig. 2

Fig.1

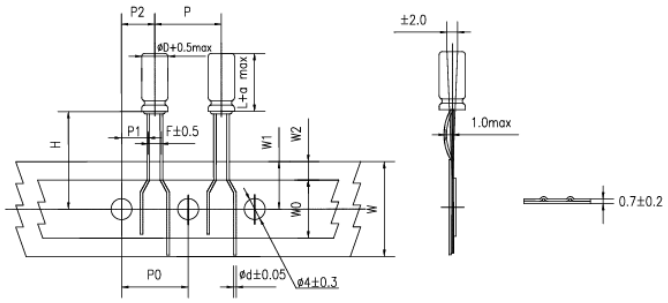
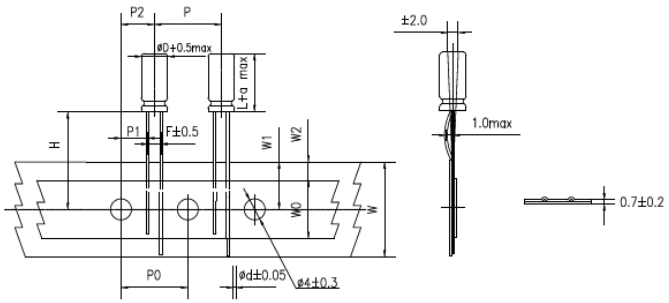


Fig.2

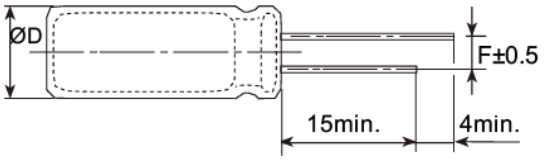


Items	Symbol	Case Size						Tolerance
		0511 0512	0609 0611 0612	0811 0812	0816 0820	1009 1013 1016 1020 1025	1216 1220 1225 1230	
Lead Wire Diameter	d	0.50	0.50	0.50	0.50/0.60	0.60	0.60	±0.05
Pitch of Body	P	12.70	12.70	12.70	12.70	12.70	15.00	±1.00
Feed Hole Pitch	P0	12.70	12.70	12.70	12.70	12.70	15.00	±0.20
Distance from Hole Center to Lead	P1	5.35	5.10	4.60	4.60	3.85	5.00	±0.70
Distance from Feed Hole Center to Body Center	P2	6.35	6.35	6.35	6.35	6.35	7.50	±1.00
Lead-to-lead distance	F	2.00	2.50	3.50	3.50	5.00	5.00	±0.50
Height of Body from Tape Center	H	18.50	18.50	18.50	18.50	18.50	18.50	±0.75
Base Tape Width	W	18.00	18.00	18.00	18.00	18.00	18.00	±0.50
Adhesive Tape Width	W0	6.00	8.00	8.00	8.00	11.00	11.00	min
Hole Position	W1	9.00	9.00	9.00	9.00	9.00	9.00	+0.75-0.50
Hole Down Tape Position	W2	1.50	1.50	1.50	1.50	1.50	1.50	max

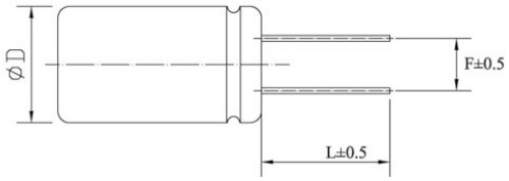
*All dimensions in mm

TERMINATION TYPE

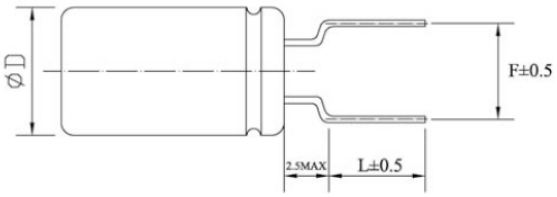
Letter " ": Empty = Standard Long lead.



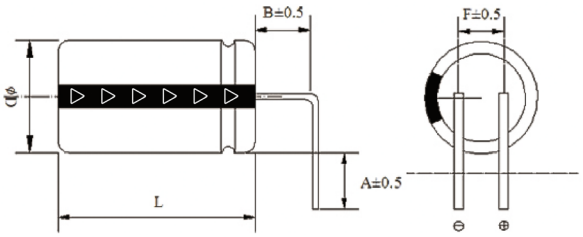
Letter "C": Lead cut only.



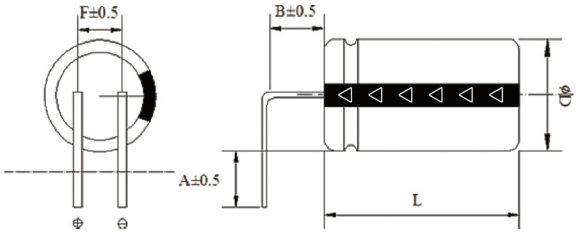
Letter "F": Lead cut and form.



Letter "R": Lead cut and bend (Right).



Letter "L": Lead cut and bend (Left).



Letter	Termination Type	Dø	4ø	5ø	6.3ø	8ø	10ø	12.5ø	13ø	16ø	18ø
	Standard long lead	F	1.50	2.00	2.50	3.50	5.00	5.00	5.00	7.50	7.50
C	Lead cut only	F	1.50	2.00	2.50	3.50	5.00	5.00	5.00	7.50	7.50
		L	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
F	Lead cut and form	F	5.00	5.00	5.00	5.00					
		L	3.50	3.50	3.50	3.50					
R / L	Lead cut and bend	F					5.00	5.00	5.00	7.50	7.50
		A					3.50	3.50	3.50	3.50	3.50
		B					2.50	2.50	2.50	2.50	2.50

*All dimensions in mm.