

Radial Leaded Aluminum Electrolytic Capacitors

REC Series



FEATURES

- High reliability
- Endurance: 6000 - 12,000 hours at 105°C
- RoHS Compliance and Halogen-free



APPLICATIONS

- Communications equipment
- Industrial equipment

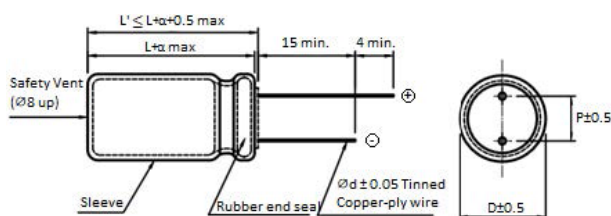
HOW TO ORDER

R	EC	0811	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	Packaging K = Ammo Pack B = Bulk Pack	Lead Type " " empty = Standard long lead "C"= Lead cut only "D"= Lead cut and crimp "F"= Lead cut and form "H"= Lead cut, crimp and form "B"= Forming only "L"= Lead cut and bend (Left) "Z"= Lead cut and bend (Right)
					100 = 100Vdc 160 = 160Vdc 200 = 200Vdc 250 = 250Vdc 350 = 350Vdc 400 = 400Vdc 450 = 450Vdc 500 = 500Vdc		

CASE DIMENSIONS AND MARKING millimeters (inches)

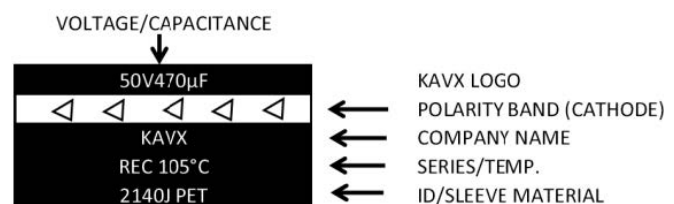
Code	D±0.50(0.020)	L	d±0.05(0.002)	P±0.50(0.020)	α	Typical Weight (g)
0512	5.00 (0.020)	12.00 (0.472)	0.50 (0.020)	2.00 (0.079)	1.00 (0.039)	0.43
0611	6.30 (0.248)	11.00 (0.433)	0.50 (0.020)	2.50 (0.098)	1.00 (0.039)	0.60
0612	6.30 (0.248)	12.00 (0.472)	0.50 (0.020)	2.50 (0.098)	1.00 (0.039)	0.60
0811	8.00 (0.315)	11.50 (0.453)	0.50 (0.020)	3.50 (0.138)	1.50 (0.059)	0.98
0812	8.00 (0.315)	12.00 (0.472)	0.50 (0.020)	3.50 (0.138)	1.00 (0.039)	0.98
0815	8.00 (0.315)	15.00 (0.591)	0.50 (0.020)	3.50 (0.138)	1.00 (0.039)	1.24
0816	8.00 (0.315)	16.00 (0.630)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	1.33
0820	8.00 (0.315)	20.00 (0.787)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	1.66
0825	8.00 (0.315)	25.00 (0.984)	0.50 (0.020)	3.50 (0.138)	2.00 (0.079)	2.25
1012	10.00 (0.394)	12.50 (0.492)	0.60 (0.024)	5.00 (0.020)	1.50 (0.059)	1.52
1013	10.00 (0.394)	13.00 (0.512)	0.60 (0.024)	5.00 (0.020)	1.00 (0.039)	1.52
1016	10.00 (0.394)	16.00 (0.630)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	1.80
1020	10.00 (0.394)	20.00 (0.787)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	2.71
1023	10.00 (0.394)	23.00 (0.905)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	3.12
1025	10.00 (0.394)	25.00 (0.984)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	3.39
1030	10.00 (0.394)	30.00 (1.181)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	4.07
1035	10.00 (0.394)	35.00 (1.378)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	4.71
1040	10.00 (0.394)	40.00 (1.575)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	5.42
1216	12.50 (0.492)	16.00 (0.630)	0.60 (0.024)	5.00 (0.020)	1.50 (0.059)	4.08
1220	12.50 (0.492)	20.00 (0.787)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	4.50
1225	12.50 (0.492)	25.00 (0.984)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	5.00
1230	12.50 (0.492)	30.00 (1.181)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	5.64
1235	12.50 (0.492)	35.00 (1.378)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	7.20
1240	12.50 (0.492)	40.00 (1.575)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	8.80
1250	12.50 (0.492)	50.00 (1.969)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	10.70

Code	D+0.50(0.020)	L	d±0.05(0.002)	P±0.50(0.020)	α	Typical Weight (g)
1321	13.00 (0.512)	21.00 (0.827)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	4.59
1325	13.00 (0.512)	25.00 (0.984)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	5.00
1330	13.00 (0.512)	30.00 (1.181)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	5.64
1335	13.00 (0.512)	35.00 (1.378)	0.60 (0.024)	5.00 (0.020)	2.00 (0.079)	7.20
1425	14.50 (0.571)	25.00 (0.984)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	6.35
1620	16.00 (0.630)	20.00 (0.787)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	4.95
1622	16.00 (0.630)	22.00 (0.866)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	6.20
1625	16.00 (0.630)	25.00 (0.984)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	8.08
1626	16.00 (0.630)	26.00 (1.024)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	8.70
1630	16.00 (0.630)	30.00 (1.181)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	9.30
1632	16.00 (0.630)	32.00 (1.260)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	9.60
1635	16.00 (0.630)	35.00 (1.378)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	12.38
1636	16.00 (0.630)	35.50 (1.398)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	12.40
1640	16.00 (0.630)	40.00 (1.575)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	13.90
1820	18.00 (0.709)	20.00 (0.787)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	7.89
1822	18.00 (0.709)	22.00 (0.866)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	8.58
1825	18.00 (0.709)	25.00 (0.984)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	9.60
1826	18.00 (0.709)	26.00 (1.024)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	9.94
1830	18.00 (0.709)	30.00 (1.181)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	11.32
1832	18.00 (0.709)	32.00 (1.260)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	12.00
1835	18.00 (0.709)	35.00 (1.378)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	12.40
1836	18.00 (0.709)	35.50 (1.398)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	12.40
1840	18.00 (0.709)	40.00 (1.575)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	16.00
1845	18.00 (0.709)	45.00 (1.772)	0.80 (0.315)	7.50 (0.295)	2.00 (0.079)	19.60



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

MARKING



Radial Leaded Aluminum Electrolytic Capacitors

REC Series



TECHNICAL SPECIFICATIONS

Category Temperature Range:	-40°C to +105°C (6.3-450V), -25°C to +105°C (500V)	
Rated Voltage Range:	6.3V – 500V	
Capacitance Range:	at 25°C, 120Hz	6.8μF – 3300μF
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	6.3V – 100V
		160V – 500V
		≤0.01CV (μA) or 3mA, whichever is greater
		≤0.04CV + 100μA

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	160V	200V	250V	350V	400V	450V	500V
6.8	6R8														1016	1016	
10	100														1016	1020	1220
12	120														1016	1020	
15	150														1020	1020	1225 1620
18	180																1230 1620
22	220						0512					1016	1016		1025	1035	1235 1625 1820
27	270						0512		0612								1240 1625
33	330											1016	1020	1220	1030 1225	1620	1630 1825
39	390																1636
47	470						0612			1016	1020	1020	1025		1622	1625	1640 1830
56	560									0820 1016	0825				1230		1836
68	680										1020		1325		1626	1825	1840
82	820											1220	1620		1826	1832	
100	101		0512		0611 0612	0612 0812	0812	0812 0816		1020 1216	1220	1225	1620		1830	1835	
120	121							0816		1025		1230	1425		1832	1840	
150	151		0512				0820					1822			1840		
180	181							0820	1025			1625	1825	1840			
220	221		0512	0612	0612	0812 0816	1016	1016 1020	1030	1225		1825					
270	271			0612			1013	1216	1040			1630	1835				
330	331				0812	0820 1012	1016 1020	1020 1023 1025			1250	1832	1845				
390	391				0816		1025			1235 1820	1635	1835					
470	471			0811 0812	0815 0816 1012 1013	0820 1016 1020	1020 1220 1321	1325		1632	1835	1840					
560	561					1016 1020 1216		1040 1330			1840						
680	681			0815	0820 1016	1020					1845						
820	821					1025		1335 1626									
1000	102		0815 1013	0820 1016	1016 1020	1220	1625	1625	1835								
1200	122				1025												
1500	152		1016	1020	1025 1321	1230 1622											
1800	182					1335		1840									
2200	222	1020	1025	1025 1321	1225 1622												
3300	332			1330 1622	1820												

Released ratings

Radial Leaded Aluminum Electrolytic Capacitors

REC Series



RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	100kHz RMS Current (mA) / 125°C	Lifetime (h)	MSL
6.3 Volt								
REC1020222M006*	1020	2200	6.3	139	24	1910	10,000	1
10 Volt								
REC0512101M010*	0512	100	10	10	19	370	7000	1
REC0512151M010*	0512	150	10	15	19	460	7000	1
REC0512221M010*	0512	220	10	22	19	465	7000	1
REC0815102M010*	0815	1000	10	100	19	1690	10,000	1
REC1013102M010*	1013	1000	10	100	19	1705	9000	1
REC1016152M010*	1016	1500	10	150	19	1990	10,000	1
REC1025222M010*	1025	2200	10	220	21	2910	10,000	1
16 Volt								
REC0612221M016*	0612	220	16	35	16	620	7000	1
REC0612271M016*	0612	270	16	43	16	690	7000	1
REC0811471M016*	0811	470	16	75	16	1210	9000	1
REC0812471M016*	0812	470	16	75	16	1210	9000	1
REC0815681M016*	0815	680	16	109	16	1610	10,000	1
REC0820102M016*	0820	1000	16	160	16	1990	10,000	1
REC1016102M016*	1016	1000	16	160	16	1990	10,000	1
REC1020152M016*	1020	1500	16	240	16	2520	10,000	1
REC1025222M016*	1025	2200	16	352	18	2910	10,000	1
REC1321222M016*	1321	2200	16	352	18	2610	10,000	1
REC1330332M016*	1330	3300	16	528	20	3490	10,000	1
REC1622332M016B	1622	3300	16	528	20	3250	10,000	1
25 Volt								
REC0611101M025*	0611	100	25	25	14	620	7000	1
REC0612101M025*	0612	100	25	25	14	620	7000	1
REC0612221M025*	0612	220	25	55	14	700	7000	1
REC0812331M025*	0812	330	25	83	14	1210	9000	1
REC0816391M025*	0816	390	25	98	14	1610	10,000	1
REC0815471M025*	0815	470	25	118	14	1650	10,000	1
REC0816471M025*	0816	470	25	118	14	1650	10,000	1
REC1012471M025*	1012	470	25	118	14	1690	9000	1
REC1013471M025*	1013	470	25	118	14	1690	9000	1
REC0820681M025*	0820	680	25	170	14	1970	10,000	1
REC1016681M025*	1016	680	25	170	14	1990	10,000	1
REC1016102M025*	1016	1000	25	250	14	2000	10,000	1
REC1020102M025*	1020	1000	25	250	14	2520	10,000	1
REC1025122M025*	1025	1200	25	300	14	2910	10,000	1
REC1025152M025*	1025	1500	25	375	14	2910	10,000	1
REC1321152M025*	1321	1500	25	375	14	2610	10,000	1
REC1225222M025*	1225	2200	25	550	16	3190	10,000	1
REC1622222M025B	1622	2200	25	550	16	3250	10,000	1
REC1820332M025B	1820	3300	25	825	18	2850	10,000	1
35 Volt								
REC0612101M035*	0612	100	35	35	12	690	7000	1
REC0812101M035*	0812	100	35	35	12	940	9000	1
REC0812221M035*	0812	220	35	77	12	1280	9000	1
REC0816221M035*	0816	220	35	77	12	1610	10,000	1
REC1013271M035*	1013	270	35	95	12	1690	9000	1
REC0820331M035*	0820	330	35	116	12	1970	10,000	1
REC1012331M035*	1012	330	35	116	12	1690	9000	1
REC0820471M035*	0820	470	35	165	12	1600	10,000	1
REC1016471M035*	1016	470	35	165	12	1990	10,000	1
REC1020471M035*	1020	470	35	165	12	2500	10,000	1
REC1016561M035*	1016	560	35	196	12	1990	10,000	1
REC1020561M035*	1020	560	35	196	12	2520	10,000	1
REC1216561M035*	1216	560	35	196	12	2400	10,000	1
REC1020681M035*	1020	680	35	238	12	2550	10,000	1
REC1025821M035*	1025	820	35	287	12	2920	10,000	1
REC1220102M035*	1220	1000	35	350	12	2650	10,000	1
REC1230152M035*	1230	1500	35	525	12	3660	10,000	1
REC1622152M035B	1622	1500	35	525	12	3250	10,000	1
REC1335182M035*	1335	1800	35	630	12	3620	10,000	1
50 Volt								
REC0512220M050*	0512	22	50	11	10	270	7000	1
REC0512270M050*	0512	27	50	14	10	300	7000	1
REC0612470M050*	0612	47	50	24	10	440	7000	1
REC0812101M050*	0812	100	50	50	10	940	9000	1

Radial Leaded Aluminum Electrolytic Capacitors

REC Series

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	100kHz RMS Current (mA) / 125°C	Lifetime (h)	MSL
REC0820151M050*	0820	150	50	75	10	1600	10,000	1
REC1016221M050*	1016	220	50	110	10	1645	10,000	1
REC1016331M050*	1016	330	50	165	10	1750	10,000	1
REC1020331M050*	1020	330	50	165	10	2065	10,000	1
REC1025391M050*	1025	390	50	195	10	2250	10,000	1
REC1020471M050*	1020	470	50	235	10	2085	10,000	1
REC1220471M050*	1220	470	50	235	10	2210	10,000	1
REC1321471M050*	1321	470	50	235	10	2210	10,000	1
REC1625102M050B	1625	1000	50	500	10	3000	10,000	1
63 Volt								
REC0812101M063*	0812	100	63	63	9	830	8000	1
REC0816101M063*	0816	100	63	63	9	990	9000	1
REC0816121M063*	0816	120	63	76	9	990	9000	1
REC0820181M063*	0820	180	63	113	9	1600	9000	1
REC1016221M063*	1016	220	63	139	9	1200	10,000	1
REC1020221M063*	1020	220	63	139	9	1350	10,000	1
REC1216271M063*	1216	270	63	170	9	1600	10,000	1
REC1020331M063*	1020	330	63	208	9	1650	10,000	1
REC1023331M063*	1023	330	63	208	9	1410	10,000	1
REC1025331M063*	1025	330	63	208	9	1990	10,000	1
REC1325471M063*	1325	470	63	296	9	2450	10,000	1
REC1040561M063B	1040	560	63	353	9	2750	10,000	1
REC1330561M063*	1330	560	63	353	9	2750	10,000	1
REC1335821M063*	1335	820	63	517	9	2910	10,000	1
REC1626821M063B	1626	820	63	517	9	2560	10,000	1
REC1625102M063B	1625	1000	63	630	9	2580	10,000	1
80 Volt								
REC0612270M080*	0612	27	80	22	8	380	6000	1
REC1025181M080*	1025	180	80	144	8	1650	10,000	1
REC1030221M080*	1030	220	80	176	8	1850	10,000	1
REC1040271M080B	1040	270	80	216	8	2320	10,000	1
REC1835102M080B	1835	1000	80	800	8	3500	10,000	1
REC1840182M080B	1840	1800	80	1440	8	3860	10,000	1
100 Volt								
REC1016470M100*	1016	47	100	47	8	870	10,000	1
REC0820560M100*	0820	56	100	56	8	980	9000	1
REC1016560M100*	1016	56	100	56	8	990	10,000	1
REC1020101M100*	1020	100	100	100	8	1400	10,000	1
REC1216101M100*	1216	100	100	100	8	1400	10,000	1
REC1025121M100*	1025	120	100	120	8	1650	10,000	1
REC1225221M100*	1225	220	100	220	8	2200	10,000	1
REC1235391M100*	1235	390	100	390	8	2600	10,000	1
REC1820391M100B	1820	390	100	390	8	2200	10,000	1
REC1632471M100B	1632	470	100	470	8	2650	10,000	1

* Used to denote packing type: "K" for Ammo Pack or "B" for Bulk Pack.

All technical data relates to an ambient temperature of +25°C. 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.

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	120Hz RMS Current (mA) / 125°C	Lifetime (h)	MSL
160 Volt								
REC1020470M160*	1020	47	160	400.8	20	275	10,000	1
REC0825560M160*	0825	56	160	458.4	20	300	12,000	1
REC1020680M160*	1020	68	160	535.2	20	335	10,000	1
REC1220101M160*	1220	100	160	740	20	575	10,000	1
REC1250331M160B	1250	330	160	2212	20	1400	12,000	1
REC1635391M160B	1635	390	160	2596	20	1500	12,000	1
REC1835471M160B	1835	470	160	3108	20	1715	12,000	1
REC1840561M160B	1840	560	160	3684	20	1905	12,000	1
REC1845681M160B	1845	680	160	4452	20	2130	12,000	1
200 Volt								
REC1016220M200*	1016	22	200	276	20	210	10,000	1
REC1016330M200*	1016	33	200	364	20	260	10,000	1
REC1020470M200*	1020	47	200	476	20	290	10,000	1
REC1220820M200*	1220	82	200	756	20	520	10,000	1
REC1225101M200*	1225	100	200	900	20	625	12,000	1
REC1230121M200*	1230	120	200	1060	20	725	12,000	1
REC1822151M200B	1822	150	200	1300	20	865	12,000	1
REC1625181M200B	1625	180	200	1540	20	925	12,000	1
REC1825221M200B	1825	220	200	1860	20	1050	12,000	1
REC1630271M200B	1630	270	200	2260	20	1180	12,000	1

Radial Leaded Aluminum Electrolytic Capacitors

REC Series

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	120Hz RMS Current (mA) / 125°C	Lifetime (h)	MSL
REC1832331M200B	1832	330	200	2740	20	1200	12,000	1
REC1835391M200B	1835	390	200	3220	20	1565	12,000	1
REC1840471M200B	1840	470	200	3860	20	1745	12,000	1
250 Volt								
REC1016220M250*	1016	22	250	320	20	185	10,000	1
REC1020330M250*	1020	33	250	430	20	240	10,000	1
REC1025470M250*	1025	47	250	570	20	315	12,000	1
REC1325680M250*	1325	68	250	780	20	550	12,000	1
REC1620820M250B	1620	82	250	920	20	655	10,000	1
REC1620101M250B	1620	100	250	1100	20	635	10,000	1
REC1425121M250B	1425	120	250	1300	20	750	12,000	1
REC1825181M250B	1825	180	250	1900	20	950	12,000	1
REC1835271M250B	1835	270	250	2800	20	1300	12,000	1
REC1845331M250B	1845	330	250	3400	20	1485	12,000	1
350 Volt								
REC1220330M350*	1220	33	350	562	24	330	10,000	1
REC1840181M350B	1840	180	350	2620	24	1080	12,000	1
400 Volt								
REC101668M400*	1016	6.8	400	208.8	24	130	10,000	1
REC1016100M400*	1016	10	400	260	24	125	10,000	1
REC1016120M400*	1016	12	400	292	24	145	10,000	1
REC1020150M400*	1020	15	400	340	24	180	10,000	1
REC1025220M400*	1025	22	400	452	24	215	12,000	1
REC1030330M400*	1030	33	400	628	24	360	12,000	1
REC1225330M400*	1225	33	400	289	24	385	12,000	1
REC1622470M400B	1622	47	400	852	24	495	12,000	1
REC1230560M400*	1230	56	400	996	24	495	12,000	1
REC1626680M400B	1626	68	400	1188	24	600	12,000	1
REC1826820M400B	1826	82	400	1412	24	720	12,000	1
REC1830101M400B	1830	100	400	1700	24	800	12,000	1
REC1832121M400B	1832	120	400	2020	24	889	12,000	1
REC1840151M400B	1840	150	400	2500	24	985	12,000	1
450 Volt								
REC101668M450*	1016	6.8	450	222.4	24	105	10,000	1
REC1020100M450*	1020	10	450	280	24	130	10,000	1
REC1020120M450*	1020	12	450	316	24	150	10,000	1
REC1020150M450*	1020	15	450	370	24	145	10,000	1
REC1035220M450*	1035	22	450	496	24	250	12,000	1
REC1620330M450B	1620	33	450	694	24	385	10,000	1
REC1625470M450B	1625	47	450	946	24	500	12,000	1
REC1825680M450B	1825	68	450	1324	24	550	12,000	1
REC1832820M450B	1832	82	450	1576	24	695	12,000	1
REC1835101M450B	1835	100	450	1900	24	835	12,000	1
REC1840121M450B	1840	120	450	2260	24	930	12,000	1
500 Volt								
REC1220100M500*	1220	10	500	300	24	160	10,000	1
REC1225150M500*	1225	15	500	400	24	220	10,000	1
REC1620150M500B	1620	15	500	400	24	220	10,000	1
REC1230180M500*	1230	18	500	460	24	240	12,000	1
REC1620180M500B	1620	18	500	460	24	240	10,000	1
REC1235220M500*	1235	22	500	540	24	280	12,000	1
REC1625220M500B	1625	22	500	540	24	280	12,000	1
REC1820220M500B	1820	22	500	540	24	280	10,000	1
REC1240270M500B	1240	27	500	640	24	310	12,000	1
REC1625270M500B	1625	27	500	640	24	310	12,000	1
REC1630330M500B	1630	33	500	760	24	350	12,000	1
REC1825330M500B	1825	33	500	760	24	350	12,000	1
REC1636390M500B	1636	39	500	880	24	380	12,000	1
REC1640470M500B	1640	47	500	1040	24	440	12,000	1
REC1830470M500B	1830	47	500	1040	24	440	12,000	1
REC1836560M500B	1836	56	500	1220	24	480	12,000	1
REC1840680M500B	1840	68	500	1460	24	525	12,000	1

* Used to denote packing type: "K" for Ammo Pack or "B" for Bulk Pack.

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.

Radial Leaded Aluminum Electrolytic Capacitors

REC Series



FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Rated Voltage (Vdc)	Capacitance (μF)	Frequency (Hz)			
		120	1K	10K	100K
6.3-100V	22 – 180	0.40	0.70	0.90	1.00
	220 – 560	0.50	0.85	0.94	1.00
	680 – 1800	0.60	0.87	0.95	1.00
	2200 – 3300	0.75	0.90	0.95	1.00

Rated Voltage (Vdc)	Capacitance (μF)	Frequency (Hz)			
		120	1K	10K	100K
160-500V	6.8 – 82	1.00	1.75	2.25	2.50
	100 – 680	1.00	1.67	2.05	2.25

QUALIFICATION TABLE

Test	REC Series (Temperature range -40°C to +105°C (6.3-450V), -25°C to +105°C (500V))					
	Conditions	Characteristics				
Temperature Stability (Max. Impedance Ratio)	120Hz	Rated Voltage (V)	6.3 – 100	160 – 250	350 – 420	450 – 500
		Z(-25°C)/ Z(20°C)	2	3	5	6
		Z(-40°C)/ Z(20°C)	3	8	10	-
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 6000 to 12,000 hours (please see life time) at 105°C.	Rated Voltage (V)	6.3 – 10	16 – 100		160 – 500
		ΔC/C	within ±30% of initial limit		within ±25% of initial limit	within ±20% of initial limit
		DF	200% or less of initial specified limit			
		DCL	Initial specified limit or less			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.	ΔC/C	within ±20% of initial limit			
		DF	200% or less of initial specified limit			
		DCL	Initial specified limit or less			
Standard	JIS C 5101-4-1 (IEC 60384)					

STORAGE

- It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C and a relative humidity of 75% or below.
- Confirm that the environment does not have any of the following conditions:
 - Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
 - In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
 - Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
 - Exposed to acidic or alkaline solutions.
 - Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
-

Category	Description	Storage Life
Mid-High Voltage	160V and above	2yrs, after 1yr, needs to check characteristics, if NG, needs to do aging
Low Voltage	120V and below	2yrs

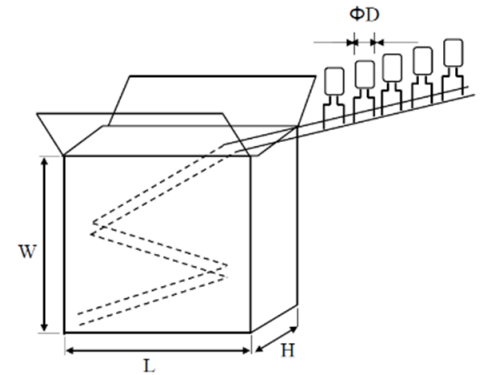
Radial Leaded Aluminum Electrolytic Capacitors

REC Series

PACKAGE TAPE DIMENSIONS

AMMO PACKING

Ammo Pack						
Size Code	W±5 (mm)	L ±5 (mm)	H±5 (mm)	Qty. (pcs)	G.W. kg/box	Box/ Carton
0512	330	490	275	2000	1.62	10
0611 - 0612	330	490	275	1500	1.62	10
0811 - 0816	330	490	275	1000	1.62	10
0820 - 0825	330	490	275	1000	1.62	8
1012 - 1013	233	335	275	600	1.48	5
1016 - 1020	233	335	305	600	1.52	5
1023 - 1035	233	335	280	600	1.50	4
1216 - 1235	325	500	215	400	1.85	6
1321 - 1325	325	500	215	400	1.85	6
1330 - 1335	325	500	236	400	1.90	6



LEAD FORMING TAPING SPECIFICATIONS FOR AMMO PACK

Case Diameter	5mm	6.3mm	8mm	10mm	12.5mm	13mm
Figure #	Fig. 1	Fig. 1	Fig. 1	Fig. 2	Fig. 3	Fig. 3

(Unit:mm)

Fig. 1 (Φ5-Φ8)

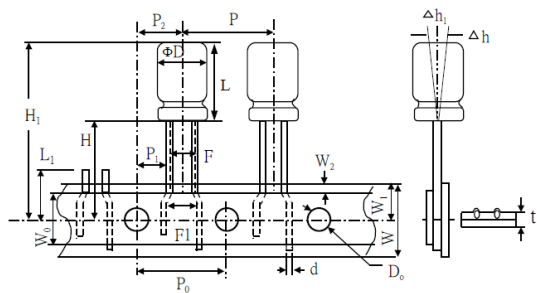
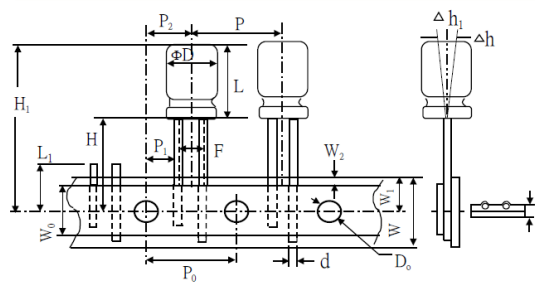


Fig. 2 (Φ10)



Items	Symbol	Case Size															Tolerance	Remark
		0512	0611 0612	0811	0812	0815	0816	0820	0825	1012 1013	1016	1020	1023	1025	1030	1035		
Lead Wire Diameter	d	0.50/0.60							0.60								±0.05	
Body Height	L	13.00	13.00	13.00	16.00	18.00	22.00	27.00	14.00	18.00	22.00	25.00	27.00	32.00	37.00	max		
Intervals of Bodies	P	12.70															±1.00	
Intervals of Punched Holes	P ₀	12.70															±0.20	
Distance between Holes and Lead Wire	P ₁	3.85																Fig.1
		5.10	5.10														±0.70	Fig.2
		5.35																
Distance between Holes and Body Center	P ₂	6.35															±1.00	
Distance between Lead and Lead	F	5.00															+0.80 -0.20	Fig.1
		2.50	2.50	3.50							5.00					Fig.2		
		2.00																
Distance between Lead and Lead	F ₁	5.00																Fig.2
Base Tape Width	W	18.00															±0.50	
Adhesive Tape Width	W ₀	10.00								12.00							min	
Deviation between Holes and Base Tape	W ₁	9.00															±0.50	
Deviation between Adhesive and Base Tape	W ₂	1.50															max	
Deviation between Body Bottom and Tape Center	H	18.50															±0.75	Fig.1, Fig.2
Lead Wire Clinched Height	H ₀	16.00															±0.50	
Distance between Body Top and Tape Center	H ₁	32.00	31.50	33.00	36.00	38.00	42.00	47.00	34.00	38.00	42.00	45.00	47.00	52.00	57.00	max		
Punched Hole Diameter	D ₀	4.00															±0.30	
Length of not Good Lead Slit	L ₁	11.00															max	
Base and Adhesive Tape Thickness	t	0.70															±0.20	
Deviation of Body Alignment	Δh	0															±2.00	
Deviation of Body Alignment	Δh ₁	0															±2.00	

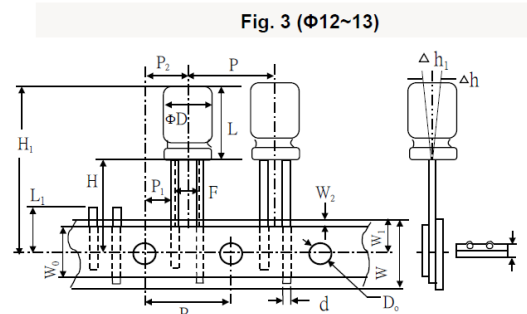
*All dimensions in mm

Radial Leaded Aluminum Electrolytic Capacitors

REC Series

Items	Symbol	Case Size						Tolerance
		1216	1220	1321	1225 1325	1230 1330	1235 1335	
Lead Wire Diameter	d	0.60						±0.05
Body Height	L	18.00	22.00	23.00	27.00	32.00	37.00	max
Intervals of Bodies	P	15.00						±1.00
Intervals of Punched Holes	P ₀	15.00						±0.20
Distance between Holes and Lead Wire	P ₁	5.00						±0.70
Distance between Holes and Bodies	P ₂	7.50						±1.00
Distance between Lead and Lead	F	5.00						+0.80 -0.20
Base Tape Width	W	18.00						±0.50
Adhesive Tape Width	W ₀	12.00						min
Deviation between Holes and Base Tape	W ₁	9.00						±0.50
Deviation between Adhesive and Base Tape	W ₂	1.50						max
Deviation between Body Bottom	H	18.50						±0.75
Distance between Body Top and Tape Center	H ₁	38.00	42.00	43.00	47.00	52.00	57.00	max
Punched Hole Diameter	D ₀	4.00						±0.30
Length of not Good Lead Slit	L ₁	11.00						max
Base and Adhesive Tape Thickness	t	0.70						±0.20
Deviation of Body Alignment	Δh	0						±2.00
Deviation of Body Alignment	Δh ₁	0						±2.00

*All dimensions in mm



BULK PACKING

Package Box				
Size Code	Bags Inner Box	Layer Quantity	Quantity (pcs/bag)	Total Quantity (pcs/carton)
0512	10	2	1000	20,000
0611-0612	8	2	1000	16,000
0811-0812	9	2	500	9000
0815-0816	8	2	500	8000
0820	6	2	500	6000
0825	5	2	500	5000
1012-1013	11	2	200	4400
1016-1020	9	2	200	3600
1023-1025	8	2	200	3200
1030	9	2	150	2700
1035	8	2	150	2400
1040	2	2	828	3312
1216-1225	7	2	150	2100
1230-1235	7	2	100	1400
1240-1250	2	2	570	2280
1321	7	2	150	2100
1325	6	2	150	1800
1330-1335	7	2	100	1400
1425	10	2	50	1000
1620-1640	2	2	390	1560
1820-1840	2	2	286	1144
1845	2	2	286	1144

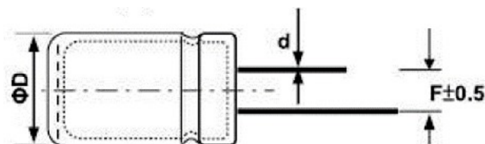
Note: If you need more packaging information please contact your sales representative.

Radial Leaded Aluminum Electrolytic Capacitors

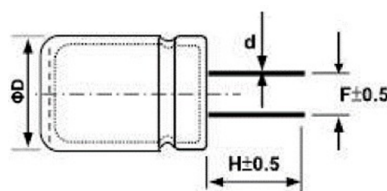
REC Series

TERMINATION TYPE

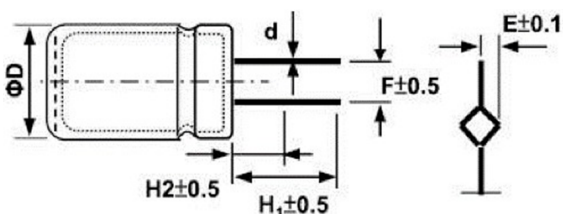
Letter “ ”: Empty = Standard Long lead.



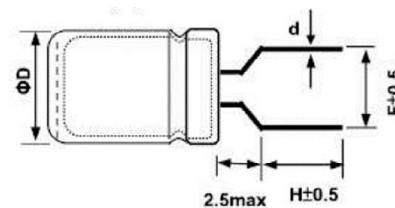
Letter “C”: Lead cut only.



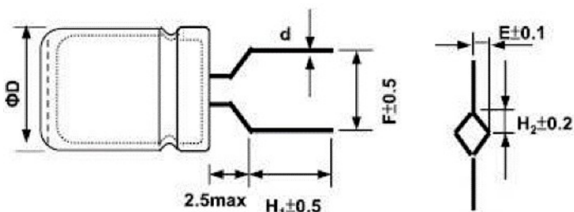
Letter “D”: Lead cut and crimp.



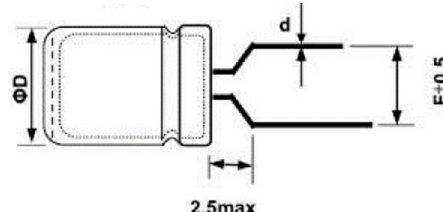
Letter “F”: Lead cut and form.



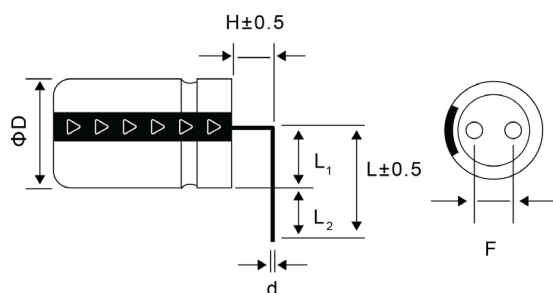
Letter “H”: Lead cut, crimp, and form.



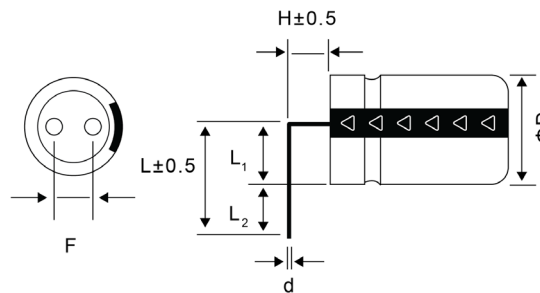
Letter “B”: Forming only.



Letter “L”: Lead cut and bend (Left).



Letter “Z”: Lead cut and bend (Right).



Radial Leaded Aluminum Electrolytic Capacitors

REC Series

TERMINATION TYPE

Letter	Termination Type	Dø	5ø	6.3ø	8ø	10ø	12.5ø	13ø	14.5ø	16ø	18ø
	Standard long lead	F	2.00	2.50	3.50	5.00	5.00	5.00	7.50	7.50	7.50
		d	0.50	0.50	0.50	0.60	0.60	0.60	0.80	0.80	0.80
C	Lead cut only	F	2.00	2.50	3.50	5.00	5.00	5.00	7.50	7.50	7.50
		H	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
		d	0.50	0.50	0.50	0.60	0.60	0.60	0.80	0.80	0.80
D	Lead cut and crimp	E	1.12	1.12	1.32	1.32	1.32	1.32	1.32	1.32	1.32
		F				5.00	5.00	5.00	7.50	7.70	7.50
		H ₁				5.00	5.00	5.00	5.00	5.00	5.00
		H ₂				1.80	1.80	1.80	1.80	1.80	1.80
		d				0.60	0.60	0.60	0.80	0.80	0.80
F	Lead cut and form	F	5.00	5.00	5.00						
		H	5.00	5.00	5.00						
		d	0.50	0.50	0.50						
H	Lead, cut, crimp, and form	E	1.12	1.12	1.32	1.32	1.32	1.32	1.32	1.32	1.32
		F	5.00	5.00	5.00						
		H ₁	5.00	5.00	5.00						
		H ₂	1.80	1.80	1.80						
		d	0.50	0.50	0.50						
B	Forming only	F	5.00	5.00	5.00						
		d	0.50	0.50	0.50						
L / Z	Lead cut and bend	F	2.00	2.50	3.50	5.00	5.00	5.00	7.50	7.50	7.50
		H	2.00	2.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50
		L ₁	2.70	3.40	4.50	5.30	6.60	6.80	7.70	8.40	9.40
		L ₂	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
		d	0.50	0.50	0.50	0.60	0.60	0.60	0.80	0.80	0.80

*All dimensions in mm.