# Radial Lead Type

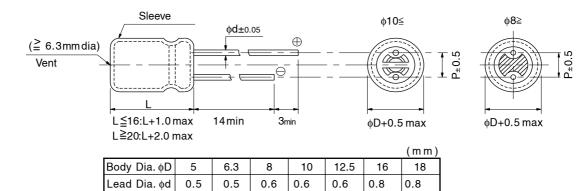
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Specifications								
Category temp.range	-40 to + 85°C	-25 to + 85°C						
Rated W.V. Range	6.3 to 100 V .DC	160 to 450 V .DC						
Nominal Cap. Range	0.1 to 22000 µ F	1 to 470 μ F						
Capacitance Tolerance	±20 % (120	Hz/+20°C)						
DC Leakage Current	I ≦ 0.01 CV or 3(μ A) after 2 minutes (Whichever is greater)	$I \leqq 0.06 \text{ CV} + 10 (\mu \text{ A})$ after 2 minutes						
tan δ	Please see the attached standard products list	st						
	W.V. (V) 6.3 10 16 25 35 50	63 100 160 200 250 350 400 450						
Characteristics	$\begin{array}{ c c c c c c c c } \hline Z(-25 \ ^{\circ}C)/ & 5 & 4 & 3 & 2 & 2 & 2 \\ \hline Z(+20 \ ^{\circ}C)/ & 5 & 4 & 3 & 0 & 5 & 4 & 0 \\ \hline Z(-40 \ ^{\circ}C)/ & 10 & 10 & 0 & 5 & 4 & 0 \\ \hline \end{array}$	2 2 2 2 3 5 6 6						
at Low Temperature	$\begin{vmatrix} 2(40 \text{ G})^{\prime\prime} \\ Z(+20 \text{ C}) \end{vmatrix}$ 12 10 8 5 4 3	3 3						
<ul> <li>1. Add 0.5 per 1000 μF for products of 1000 μF or more at -25 °C</li> <li>2. Add 1.0 per 1000 μF for products of 1000 μF or more at -40 °C</li> <li>(Impedance ratio at 120 Hz)</li> </ul>								
	After applying rated working voltage for 2000 +20°C, capacitor shall meet the following limits	S						
Endurance	Capacitance change $\pm 20\%$ of initial measu $\tan \delta$ $\leq 150\%$ of initial speciDC leakage current $\leq$ initial specified value	ified value						
Shelf Life	After storage for 1000 hours at +85±2 °C with at +20 °C, capacitors shall meet the limits spe							

### Dimensions in mm (not to scale)

Lead space P 2

2.5

3.5



5

5

7.5

7.5

\A/ \/	Con	Case	size	Specifi	cation			Length		Part No.		
W.V.	Cap. (±20%)	Dia.	Length	Ripple current	tan δ	Lead Dia.	Lead Space Straight Taping Taping			Part No.	Straight Leads	Taping
	. ,			(120Hz) (+85°C)	(120Hz) (+20°C)	Dia.	Straight	Taping ₩B	i aping *i		Leads	
(V)	(µF)	(mm)	(mm)	(mA)		(mm)	· ,	(mm)	(mm)		(pcs)	(pcs)
	220	5	11	240	0.28	0.5	2.0	5.0	2.5	ECA0JM221()	200	2000
	470	6.3	11.2	380	0.28	0.5	2.5	5.0	2.5	ECA0JM471()	200	2000
	1000	8	11.5	580	0.28	0.6	3.5	5.0		ECA0JM102()	200	1000
	2200	10	16	890	0.30	0.6	5.0	5.0		ECA0JM222()	200	500
6.3	3300	10	20	1020	0.32	0.6	5.0	5.0		ECA0JM332()	200	500
	4700	12.5	20	1170	0.34	0.6	5.0	5.0		ECA0JM472()	200	500
	6800	12.5	25	1270	0.38	0.6	5.0	5.0		ECA0JM682()	200	500
	10000	16	25	1450	0.46	0.8	7.5	7.5		ECA0JM103()	100	250
	15000	16	31.5	1700	0.56	0.8	7.5			ECA0JM153	100	
	22000	18	35.5	1900	0.70	0.8	7.5			ECA0JM223	50	
	330	6.3	11.2	330	0.24	0.5	2.5	5.0	2.5	ECA1AM331()	200	2000
	1000	10	12.5	630	0.24	0.6	5.0	5.0		ECA1AM102()	200	500
	2200	10	20	920	0.26	0.6	5.0	5.0		ECA1AM222()	200	500
10	3300	12.5	20	1090	0.28	0.6	5.0	5.0		ECA1AM332()	200	500
10	4700	12.5	25	1200	0.30	0.6	5.0	5.0		ECA1AM472()	200	500
	6800	16	25	1400	0.34	0.8	7.5	7.5		ECA1AM682()	100	250
	10000	16	31.5	1600	0.42	0.8	7.5			ECA1AM103	100	
	15000	18	35.5	1850	0.52	0.8	7.5			ECA1AM153	50	
	10	5	11	30	0.20	0.5	2.0	5.0	2.5	ECA1CM100()	200	2000
	22	5	11	75	0.20	0.5	2.0	5.0	2.5	ECA1CM220()	200	2000
	33	5	11	110	0.20	0.5	2.0	5.0	2.5	ECA1CM330()	200	2000
	47	5	11	130	0.20	0.5	2.0	5.0	2.5	ECA1CM470()	200	2000
	100	5	11	180	0.20	0.5	2.0	5.0	2.5	ECA1CM101()	200	2000
	220	6.3	11.2	280	0.20	0.5	2.5	5.0	2.5	ECA1CM221()	200	2000
16	470	8	11.5	440	0.20	0.6	3.5	5.0		ECA1CM471()	200	1000
	1000	10	16	680	0.20	0.6	5.0	5.0		ECA1CM102()	200	500
	2200	12.5	20	1000	0.22	0.6	5.0	5.0		ECA1CM222()	200	500
	3300	12.5	25	1200	0.24	0.6	5.0	5.0		ECA1CM332()	200	500
	4700	16	25	1360	0.26	0.8	7.5	7.5		ECA1CM472()	100	250
	6800	16	31.5	1600	0.30	0.8	7.5			ECA1CM682	100	
	10000	18	35.5	1800	0.38	0.8	7.5			ECA1CM103	50	
	100	6.3	11.2	180	0.16	0.5	2.5	5.0	2.5	ECA1EM101()	200	2000
	330	8	11.5	390	0.16	0.6	3.5	5.0		ECA1EM331()	200	1000
	470	10	12.5	480	0.16	0.6	5.0	5.0		ECA1EM471()	200	500
05	1000	10	20	850	0.16	0.6	5.0	5.0		ECA1EM102()	200	500
25	2200	12.5	25	1200	0.18	0.6	5.0	5.0		ECA1EM222()	200	500
	3300	16	25	1300	0.20	0.8	7.5	7.5		ECA1EM332()	100	250
	4700	16	31.5	1500	0.22	0.8	7.5			ECA1EM472	100	
	6800	18	35.5	1750	0.26	0.8	7.5			ECA1EM682	50	
	47	5	11	130	0.14	0.5	2.0	5.0	2.5	ECA1VM470()	200	2000
35	100	6.3	11.2	210	0.14	0.5	2.5	5.0	2.5	ECA1VM101()	200	2000
	220	8	11.5	350	0.14	0.6	3.5	5.0		ECA1VM221()	200	1000

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		Case	size	Specifie	cation		Lead	_ength		<b>D</b>	Min.Packa	aging Q'ty
W.V.	Cap. (±20%)		Length	Ripple current (120Hz) (+85°C)	tan δ	Lead	Lead Space			Part No.	Straight	Taping
	(±20%)		_		(120Hz) (+20°C)	Dia.	Straight	Taping *B	Taping <b>≭</b> i		Leads	
(V)	(µF)	(mm)	(mm)	(mA)	(+20 0)	(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
	330	10	12.5	440	0.14	0.6	5.0	5.0		ECA1VM331()	200	500
-	470	10	16	550	0.14	0.6	5.0	5.0		ECA1VM471()	200	500
35	1000	12.5	20	900	0.14	0.6	5.0	5.0		ECA1VM102()	200	500
55	2200	16	25	1250	0.16	0.8	7.5	7.5		ECA1VM222()	100	250
	3300	16	31.5	1400	0.18	0.8	7.5			ECA1VM332	100	
	4700	18	35.5	1600	0.20	0.8	7.5			ECA1VM472	50	
	0.1	5	11	1.3	0.12	0.5	2.0	5.0	2.5	ECA1HM0R1()	200	2000
	0.22	5	11	2.9	0.12	0.5	2.0	5.0	2.5	ECA1HMR22()	200	2000
	0.33	5	11	4.4	0.12	0.5	2.0	5.0	2.5	ECA1HMR33()	200	2000
-	0.47	5	11	5	0.12	0.5	2.0	5.0	2.5	ECA1HMR47()	200	2000
	1	5	11	10	0.12	0.5	2.0	5.0	2.5	ECA1HM010()	200	2000
	2.2	5	11	20	0.12	0.5	2.0	5.0	2.5	ECA1HM2R2()	200	2000
	3.3	5	11	35	0.12	0.5	2.0	5.0	2.5	ECA1HM3R3()	200	2000
	4.7	5	11	45	0.12	0.5	2.0	5.0	2.5	ECA1HM4R7()	200	2000
	10	5	11	65	0.12	0.5	2.0	5.0	2.5	ECA1HM100()	200	2000
50	22	5	11	100	0.12	0.5	2.0	5.0	2.5	ECA1HM220()	200	2000
	33	5	11	110	0.12	0.5	2.0	5.0	2.5	ECA1HM330()	200	2000
	47	6.3	11.2	130	0.12	0.5	2.5	5.0	2.5	ECA1HM470()	200	2000
	100	8	11.5	250	0.12	0.6	3.5	5.0		ECA1HM101()	200	1000
	220	10	12.5	400	0.12	0.6	5.0	5.0		ECA1HM221()	200	500
	330	10	16	500	0.12	0.6	5.0	5.0		ECA1HM331()	200	500
	470	10	20	650	0.12	0.6	5.0	5.0		ECA1HM471()	200	500
	1000	12.5	25	1050	0.12	0.6	5.0	5.0		ECA1HM102()	200	500
	2200	16	31.5	1300	0.14	0.8	7.5			ECA1HM222	100	
	3300	18	35.5	1500	0.16	0.8	7.5			ECA1HM332	50	
	10	5	11	70	0.11	0.5	2.0	5.0	2.5	ECA1JM100()	200	2000
	22	5	11	105	0.11	0.5	2.0	5.0	2.5	ECA1JM220()	200	2000
	33	6.3	11.2	130	0.11	0.5	2.5	5.0	2.5	ECA1JM330()	200	2000
	47	6.3	11.2	160	0.11	0.5	2.5	5.0	2.5	ECA1JM470()	200	2000
63	100	8	11.5	270	0.11	0.6	3.5	5.0		ECA1JM101()	200	1000
03	220	10	16	450	0.11	0.6	5.0	5.0		ECA1JM221()	200	500
	330	10	20	550	0.11	0.6	5.0	5.0		ECA1JM331()	200	500
	470	12.5	20	750	0.11	0.6	5.0	5.0		ECA1JM471()	200	500
	1000	16	25	1100	0.11	0.8	7.5	7.5		ECA1JM102()	100	250
	2200	18	35.5	1400	0.13	0.8	7.5			ECA1JM222	50	
	0.47	5	11	10	0.10	0.5	2.0	5.0	2.5	ECA2AMR47()	200	2000
	1	5	11	20	0.10	0.5	2.0	5.0	2.5	ECA2AM010()	200	2000
	2.2	5	11	30	0.10	0.5	2.0	5.0	2.5	ECA2AM2R2()	200	2000
100	3.3	5	11	40	0.10	0.5	2.0	5.0	2.5	ECA2AM3R3()	200	2000
-	4.7	5	11	50	0.10	0.5	2.0	5.0	2.5	ECA2AM4R7()	200	2000
-	10	5	11	70	0.10	0.5	2.0	5.0	2.5	ECA2AM100()	200	2000
F	22	6.3	11.2	115	0.10	0.5	2.5	5.0	2.5	ECA2AM220()	200	2000

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	Con	Case	size	Specifi	cation			Length		Devit N-	Min.PackagingQ	
W.V.	Cap. (±20%)	Dia.	Length	Ripple current	tan δ	Lead	Lead Space Straight Taping Taping			Part No.	Straight	Taping
				(120Hz) (+85°C)	(120Hz) (+20°C)	Dia.	Straight	Taping *B	Taping ₩i		Leads	
(V)	(µF)	(mm)	(mm)	(mA)	(120 0)	(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
	33	8	11.5	145	0.10	0.6	3.5	5.0		ECA2AM330()	200	1000
	47	8	11.5	180	0.10	0.6	3.5	5.0		ECA2AM470()	200	1000
	100	10	16	350	0.10	0.6	5.0	5.0		ECA2AM101()	200	500
100	220	12.5	20	550	0.10	0.6	5.0	5.0		ECA2AM221()	200	500
	330	12.5	25	700	0.10	0.6	5.0	5.0		ECA2AM331()	200	500
	470	16	25	900	0.10	0.8	7.5	7.5		ECA2AM471()	100	250
	1000	18	35.5	1300	0.10	0.8	7.5			ECA2AM102	50	
	1	6.3	11.2	36	0.16	0.5	2.5	5.0	2.5	ECA2CM010()	200	2000
	2.2	6.3	11.2	53	0.16	0.5	2.5	5.0	2.5	ECA2CM2R2()	200	2000
	3.3	6.3	11.2	66	0.16	0.5	2.5	5.0	2.5	ECA2CM3R3()	200	2000
	4.7	6.3	11.2	78	0.16	0.5	2.5	5.0	2.5	ECA2CM4R7()	200	2000
	10	10	12.5	105	0.16	0.6	5.0	5.0		ECA2CM100()	200	500
160	22	10	16	175	0.16	0.6	5.0	5.0		ECA2CM220()	200	500
	33	10	20	235	0.16	0.6	5.0	5.0		ECA2CM330()	200	500
	47	12.5	20	320	0.16	0.6	5.0	5.0		ECA2CM470()	200	500
	100	12.5	25	515	0.16	0.6	5.0	5.0		ECA2CM101()	200	500
	220	16	31.5	830	0.16	0.8	7.5			ECA2CM221	100	
	330	18	31.5	1090	0.16	0.8	7.5			ECA2CM331	50	
	470	18	40	1440	0.16	0.8	7.5			ECA2CM471	50	
	1	6.3	11.2	34	0.18	0.5	2.5	5.0	2.5	ECA2DM010()	200	2000
	2.2	6.3	11.2	50	0.18	0.5	2.5	5.0	2.5	ECA2DM2R2()	200	2000
	3.3	6.3	11.2	62	0.18	0.5	2.5	5.0	2.5	ECA2DM3R3()	200	2000
	4.7	8	11.5	86	0.18	0.6	3.5	5.0		ECA2DM4R7()	200	1000
	10	10	12.5	100	0.18	0.6	5.0	5.0		ECA2DM100()	200	500
200	22	10	20	180	0.18	0.6	5.0	5.0		ECA2DM220()	200	500
	33	10	20	220	0.18	0.6	5.0	5.0		ECA2DM330()	200	500
	47	12.5	20	300	0.18	0.6	5.0	5.0		ECA2DM470()	200	500
	100	16	25	475	0.18	0.8	7.5	7.5		ECA2DM101()	100	250
	220	18	31.5	835	0.18	0.8	7.5			ECA2DM221	50	
	330	18	40	1140	0.18	0.8	7.5			ECA2DM331	50	
	1	6.3	11.2	34	0.18	0.5	2.5	5.0	2.5	ECA2EM010()	200	2000
	2.2	6.3	11.2	50	0.18	0.5	2.5	5.0	2.5	ECA2EM2R2()	200	2000
	3.3	8	11.5	72	0.18	0.6	3.5	5.0		ECA2EM3R3()	200	1000
	4.7	8	11.5	86	0.18	0.6	3.5	5.0		ECA2EM4R7()	200	1000
250	10	10	16	110	0.18	0.6	5.0	5.0		ECA2EM100()	200	500
250	22	10	20	180	0.18	0.6	5.0	5.0		ECA2EM220()	200	500
	33	12.5	20	250	0.18	0.6	5.0	5.0		ECA2EM330()	200	500
	47	12.5	25	330	0.18	0.6	5.0	5.0		ECA2EM470()	200	500
	100	16	31.5	530	0.18	0.8	7.5			ECA2EM101	100	
	220	18	40	930	0.18	0.8	7.5			ECA2EM221	50	
250	1	6.3	11.2	32	0.20	0.5	2.5	5.0	2.5	ECA2VM010()	200	2000
350	2.2	8	11.5	55	0.20	0.6	3.5	5.0		ECA2VM2R2()	200	1000

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Standard Products												
		Case	e size				Lead	Length			Min. Packa	aging Q'ty
W.V.	Cap. (±20%)	Dia.	Length	Ripple	tan δ	Lead		ead Spa		Part No.	Straight	Taping
	(±20%)		_	current (120Hz) (+85°C)	(120Hz) (+20°C)	Dia.	Straight	Taping *B	Taping ≭i		Leads	
(V)	(µF)	(mm)	(mm)	(+85 C) (mA)	(+20°C)	(mm)	(mm)				(pcs)	(pcs)
	3.3	8	11.5	60	0.20	0.6	3.5	5.0		ECA2VM3R3()	200	1000
	4.7	10	12.5	65	0.20	0.6	5.0	5.0		ECA2VM4R7()	200	500
	10	10	20	115	0.20	0.6	5.0	5.0		ECA2VM100()	200	500
350	22	12.5	20	195	0.20	0.6	5.0	5.0		ECA2VM220()	200	500
	33	16	25	300	0.20	0.8	7.5	7.5		ECA2VM330()	100	250
	47	16	25	325	0.20	0.8	7.5	7.5		ECA2VM470()	100	250
	100	18	31.5	535	0.20	0.8	7.5			ECA2VM101	50	
	1	6.3	11.2	32	0.20	0.5	2.5	5.0	2.5	ECA2GM010()	200	2000
	2.2	8.0	11.5	50	0.20	0.6	3.5	5.0		ECA2GM2R2()	200	1000
	3.3	10	12.5	54	0.20	0.6	5.0	5.0		ECA2GM3R3()	200	500
	4.7	10	16	72	0.20	0.6	5.0	5.0		ECA2GM4R7()	200	500
400	10	10	20	115	0.20	0.6	5.0	5.0		ECA2GM100()	200	500
	22	12.5	25	215	0.20	0.6	5.0	5.0		ECA2GM220()	200	500
	33	16	25	275	0.20	0.8	7.5	7.5		ECA2GM330()	100	250
	47	16	31.5	350	0.20	0.8	7.5			ECA2GM470	100	
	100	18	40	600	0.20	0.8	7.5			ECA2GM101	50	
	1	8	11.5	37	0.20	0.6	3.5	5.0		ECA2WM010()	200	1000
	2.2	10	12.5	44	0.20	0.6	5.0	5.0		ECA2WM2R2()	200	500
	3.3	10	16	60	0.20	0.6	5.0	5.0		ECA2WM3R3()	200	500
450	4.7	10	20	79	0.20	0.6	5.0	5.0		ECA2WM4R7()	200	500
	10	12.5	20	130	0.20	0.6	5.0	5.0		ECA2WM100()	200	500
	22	16	25	210	0.20	0.8	7.5	7.5		ECA2WM220()	100	250
	33	16	31.5	285	0.20	0.8	7.5			ECA2WM330	100	

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