Radial Lead Type

Series: M Type: A

■ Features

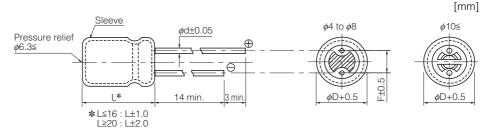
Endurance: 85 °C 2000 h
Smaller than series SU
RoHS directive compliant



■ Specifications

Category Temp. Range	−40 °C	to + 85 °C	−25 °C to +85 °C					
Rated W.V. Range	6.3 V.DC	to 100 V.DC	160 V.DC to 450 V.DC					
Nominal Cap. Range	0.1 µF t	ο 22000 μF	1 μF to 470 μF					
Capacitance Tolerance		±20 % (120 Hz/+20 °C)						
DC Leakage Current		(μA) After 2 minutes er is greater)	I ≤ 0.06 CV +10 (μA) After 2 minutes					
tan δ	Please see the attached standard products list							
	After applying rated working voltage for 2000 hours at +85°C±2°C, when the capacitors are restored to 20°C, capacitors shall meet the following limits.							
Endurance	Capacitance change ±20 % of initial measured value							
	tan δ ≤150 % of initial specified value							
	DC leakage current	≤initial specified value						
Shelf Life	After storage for 1000 hours at +85 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)							

■ Dimensions in mm (not to scale)



(mm)

Body Dia. øD	5	6.3	8	10	12.5	16	18
Lead Dia. ϕ d	0.5	0.5	0.6	0.6	0.6	0.8	0.8
Lead space F	2.0	2.5	3.5	5.0	5.0	7.5	7.5

■ Standard Products

W.V. Ca20 W.D. Dia. Length Part No. Ripple Land Court Ca20 W.D. Ca20 W.D. Ca20	- Otal	iuaiu i	loddolo										
No. Carried Court Cour			Case	size	Specif	ication		Lead I	Length			Min. Pack	aging Q'ty
Care	W.V. (±	Сар.				tan δ		Lead Space					
(V) (μF) (mm) (mm) (mm) (mm) (mm) (mm) (mm) (m		(±20 %)	Dia.	Length	(120 Hz)		Dia.	Straight			Part No.		Taping
470 6.3 11.2 380 0.28 0.5 2.5 5.0 2.5 ECAOJM471() 200 2000	(V)	(µF)	(mm)	(mm)	1 .	, , , , , , , , , , , , , , , , , , ,	(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
1000 8		220	5	11	240	0.28	0.5	2.0	5.0	2.5	ECA0JM221()	200	2000
2200 10		470	6.3	11.2	380	0.28	0.5	2.5	5.0	2.5	ECA0JM471()	200	2000
100		1000	8	11.5	580	0.28	0.6	3.5	5.0		ECA0JM102()	200	1000
4700 12.5 20		2200	10	16	890	0.30	0.6	5.0	5.0		ECA0JM222()	200	500
4700 12.5 20 1170 0.34 0.6 5.0 5.0 ECAJMM72() 200 500	0.0	3300	10	20	1020	0.32	0.6	5.0	5.0		ECA0JM332()	200	500
10000 16 25 1450 0.46 0.8 7.5 7.5	6.3	4700	12.5	20	1170	0.34	0.6	5.0	5.0		ECA0JM472()	200	500
15000 16 31.5 1700 0.56 0.8 7.5		6800	12.5	25	1270	0.38	0.6	5.0	5.0		ECA0JM682()	200	500
22000 18 35.5 1900 0.70 0.8 7.5		10000	16	25	1450	0.46	0.8	7.5	7.5		ECA0JM103()	100	250
1000 10 12.5 630 0.24 0.5 2.5 5.0 2.5 ECA1AM331() 200 2000		15000	16	31.5	1700	0.56	0.8	7.5			ECA0JM153	100	
1000 10		22000	18	35.5	1900	0.70	0.8	7.5			ECA0JM223	50	
10		330	6.3	11.2	330	0.24	0.5	2.5	5.0	2.5	ECA1AM331()	200	2000
10		1000	10	12.5	630	0.24	0.6	5.0	5.0		ECA1AM102()	200	500
10		2200	10	20	920	0.26	0.6	5.0	5.0		ECA1AM222()	200	500
10	10	3300	12.5	20	1090	0.28	0.6	5.0	5.0		ECA1AM332()	200	500
10000 16	10	4700	12.5	25	1200	0.30	0.6	5.0	5.0		ECA1AM472()	200	500
15000		6800	16	25	1400	0.34	0.8	7.5	7.5		ECA1AM682()	100	250
10 5 11 30 0.20 0.5 2.0 5.0 2.5 ECA1CM100() 200 2000		10000	16	31.5	1600	0.42	0.8	7.5			ECA1AM103	100	
22 5		15000	18	35.5	1850	0.52	0.8	7.5			ECA1AM153	50	
33 5 11 110 0.20 0.5 2.0 5.0 2.5 ECA1CM330() 200 2000		10	5	11	30	0.20	0.5	2.0	5.0	2.5	ECA1CM100()	200	2000
16		22	5	11	75	0.20	0.5	2.0	5.0	2.5	ECA1CM220()	200	2000
100 5		33	5	11	110	0.20	0.5	2.0	5.0	2.5	ECA1CM330()	200	2000
16		47	5	11	130	0.20	0.5	2.0	5.0	2.5	ECA1CM470()	200	2000
16		100	5	11	180	0.20	0.5	2.0	5.0	2.5	ECA1CM101()	200	2000
1000 10		220	6.3	11.2	280	0.20	0.5	2.5	5.0	2.5	ECA1CM221()	200	2000
2200 12.5 20 1000 0.22 0.6 5.0 5.0 ECA1CM22() 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 50 330 8 11.2 180 0.16 0.5 2.5 5.0 2.5 ECA1EM101() 200 2000 470 10 12.5 480 0.16 0.6 5.0 5.0 ECA1EM331() 200 500 2200 12.5 25 1200 0.18 0.6 5.0 5.0 ECA1EM471() 200 500 3300	16	470	8	11.5	440	0.20	0.6	3.5	5.0		ECA1CM471()	200	1000
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 1000 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 ECA1EM331() 200 500 1000 10 20 850 0.16 0.6 5.0 5.0 ECA1EM102() 200 500 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		1000	10	16	680	0.20	0.6	5.0	5.0		ECA1CM102()	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 2200 12.5 25 1200 0.18 0.6 5.0 5.0 ECA1EM472() 200 500 3300 16 25 1300 0.20 0.8 7.5 7.5 ECA1EM322() 200 500 4700		2200	12.5	20	1000	0.22	0.6	5.0	5.0		ECA1CM222()	200	500
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 1000 10 20 850 0.16 0.6 5.0 5.0 ECA1EM471() 200 500 2200 12.5 25 1200 0.18 0.6 5.0 5.0 ECA1EM472() 200 500 3300 16 25 1300 0.20 0.8 7.5 ECA1EM332() 100 250 470 16		3300	12.5	25	1200	0.24	0.6	5.0	5.0		ECA1CM332()	200	500
10000		4700	16	25	1360	0.26	0.8	7.5	7.5		ECA1CM472()	100	250
25 100 6.3 11.2 180 0.16 0.5 2.5 5.0 2.5 ECA1EM101() 200 2000		6800	16	31.5	1600	0.30	0.8	7.5			ECA1CM682	100	
25 330 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 1000 10 20 850 0.16 0.6 5.0 5.0 ECA1EM102() 200 500 2200 12.5 25 1200 0.18 0.6 5.0 5.0 ECA1EM102() 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 </td <td></td> <td>10000</td> <td>18</td> <td>35.5</td> <td>1800</td> <td>0.38</td> <td>0.8</td> <td>7.5</td> <td></td> <td></td> <td>ECA1CM103</td> <td>50</td> <td></td>		10000	18	35.5	1800	0.38	0.8	7.5			ECA1CM103	50	
470 10 12.5 480 0.16 0.6 5.0 5.0 ECA1EM471() 200 500 1000 10 20 850 0.16 0.6 5.0 5.0 ECA1EM102() 200 500 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 <		100	6.3	11.2	180	0.16	0.5	2.5	5.0	2.5	ECA1EM101()	200	2000
25 1000 10 20 850 0.16 0.6 5.0 5.0 ECA1EM102() 200 500 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		330	8	11.5	390	0.16	0.6	3.5	5.0		ECA1EM331()	200	1000
25	25	470	10	12.5	480	0.16	0.6	5.0	5.0		ECA1EM471()	200	500
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		1000	10	20	850	0.16	0.6	5.0	5.0		ECA1EM102()	200	500
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		2200	12.5	25	1200	0.18	0.6	5.0	5.0		ECA1EM222()	200	500
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		3300	16	25	1300	0.20	0.8	7.5	7.5		ECA1EM332()	100	250
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		4700	16	31.5	1500	0.22	0.8	7.5			ECA1EM472	100	
35 100 6.3 11.2 210 0.14 0.5 2.5 5.0 2.5 ECA1VM101() 200 2000		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
220 8 11.5 350 0.14 0.6 3.5 5.0 ECA1VM221() 200 1000	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

Endurance: 85 °C 2000 h

When requesting taped product, please put the letter "B" or "i" between the "()". Lead wire pitch B=5 mm, 7.5 mm, i=2.5 mm. The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.

■ Standard Products

W.V. Cap. Dia. Length Ripple Current (120 Hz) (12											Toducis	idai d i	- 014
No. Cap Dia. Length Current (120 Hz) (12	Min. Packaging Q'ty				_ength	Lead I				size	Case size		
(+20 %) Dia. Length (120 Hz) (120				ce	ad Spac	Le		tan δ				Cap.	\^/\/
(V) (µF) (mm) (mm) (mA Lms) (mm) (mm) (mm) (mm) (mm) (mm) (mm) (Straight Leads	Part No.			Straight	Dia.		(120 Hz)	Length	Dia.	(±20 %)	VV.V.
470	(pcs)	(pcs)		(mm)	(mm)	(mm)	(mm)	1 .	1	(mm)	(mm)	(µF)	(V)
1000	500	200	ECA1VM331()		5.0	5.0	0.6	0.14	440	12.5	10	330	
2200 16 25 1250 0.16 0.8 7.5 7.5 ECA1VM222() 10 3300 16 31.5 1400 0.18 0.8 7.5 ECA1VM332 10 10 18 35.5 1600 0.20 0.8 7.5 ECA1VM472 5.5 ECA1VM474 5.5	500	200	ECA1VM471()		5.0	5.0	0.6	0.14	550	16	10	470	
2200 16 25 1250 0.16 0.8 7.5 7.5 ECA1VM222() 10 3300 16 31.5 1400 0.18 0.8 7.5 ECA1VM322 10 4700 18 35.5 1600 0.20 0.8 7.5 ECA1VM322 15 0.1 5 11 1.3 0.12 0.5 2.0 5.0 2.5 ECA1HM0R1() 20 0.22 5 11 2.9 0.12 0.5 2.0 5.0 2.5 ECA1HMR22() 20 0.33 5 11 4.4 0.12 0.5 2.0 5.0 2.5 ECA1HMR33() 20 0.47 5 11 5 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HM83() 20 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HM83() 20 3.3 5 11 4.4 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 3.3 5 11 60 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 4.7 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 4.7 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 3.3 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 3.3 5 11 0.0 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 4.7 6 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 3.3 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 4.7 6.3 11.2 130 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 4.7 6.3 11.2 130 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 4.7 6.3 11.2 130 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 4.7 6.3 11.2 130 0.12 0.5 2.0 5.0 2.5 ECA1HM30() 20 4.7 6.3 11.2 130 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 4.7 11 105 0.11 0.5 2.0 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.0 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1HM330() 20 4.7 11 105 0.11 0.5 2.5 5.0 2.5 ECA1JM300() 20 4.7 11 100 8 11.5 270 0.11 0.5 2.5 5.0 2.5 ECA1JM300() 20	500	200	ECA1VM102()		5.0	5.0	0.6	0.14	900	20	12.5	1000	25
4700	250	100	ECA1VM222()		7.5	7.5	0.8	0.16	1250	25	16	2200	35
0.1 5 11 1.3 0.12 0.5 2.0 5.0 2.5 ECA1HMR22() 20 0.33 5 11 4.4 0.12 0.5 2.0 5.0 2.5 ECA1HMR33() 20 0.47 5 11 5 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 5 11 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 3.3 5 11 4.4 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM833() 20 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM87() 20 3.3 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM477() 20 3.3 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM477() 20 3.3 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 3.3 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 3.3 5 11 10 0.12 0.5 2.5 5.0 ECA1HM331() 20 3.3 5 11 10 0.12 0.5 2.5 5.0 ECA1HM331() 20 3.3 5 11 110 0.12 0.5 2.5 5.0 ECA1HM331() 20 3.3 5 11 10 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 3.3 5 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 3.3 5 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 3.3 5 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 3.3 5 10 16 31.5 1300 0.14 0.8 7.5 ECA1HM332 5 10 10 5 11 70 0.11 0.5 2.0 5.0 5.0 ECA1HM332 5 10 10 5 11 70 0.11 0.5 2.0 5.0 5.0 ECA1HM332 5 10 10 5 11 70 0.11 0.5 2.0 5.0 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 10 10 16 5.0 5.0 5.0 2.5 ECA1JM330() 20 3.3 10 10 16 5.0 5.0 5.0 2.5 ECA1JM330() 20 3.3 10 10 16 5.0 5.0 5.0 2.5 ECA1JM330() 20 3.3 10 10 10 5 11 0.5 2.5 5.0 2.5 ECA1JM330() 20 3.3 10 10 10 5 11 0.5 2.5 5.0 2.5 ECA1JM330() 20		100	ECA1VM332			7.5	0.8	0.18	1400	31.5	16	3300	
0.22 5 11 2.9 0.12 0.5 2.0 5.0 2.5 ECA1HMR22() 20 0.33 5 11 4.4 0.12 0.5 2.0 5.0 2.5 ECA1HMR33() 20 0.47 5 11 5 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HM010() 20 1 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM373() 20 1 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM47() 20 1 1 0 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 1 2 2 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 1 2 2 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 1 2 2 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 1 3 3 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 1 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM30() 20 1 1 0 1 2.5 400 0.12 0.6 5.0 5.0 ECA1HM31() 20 1 2 2 0 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM31() 20 1 2 2 0 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM31() 20 1 2 2 0 16 31.5 1300 0.14 0.8 7.5 ECA1HM32() 20 1 2 2 0 16 31.5 1300 0.14 0.8 7.5 ECA1HM32() 20 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		50	ECA1VM472			7.5	0.8	0.20	1600	35.5	18	4700	
0.33 5	2000	200	ECA1HM0R1()	2.5	5.0	2.0	0.5	0.12	1.3	11	5	0.1	
0.47 5 11 5 0.12 0.5 2.0 5.0 2.5 ECA1HMR47() 20 1 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HM010() 20 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HM2R2() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM2R3() 20 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM2Q0() 20 33 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM2Q0() 20 33 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM2Q0() 20 33 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM2Q0() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM2Q0() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM2Q1() 20 20 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM2Q1() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM2Q1() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM2Q1() 20 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM471() 20 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM2Q2 10 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM2Q2 10 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM3Q2 5 3300 18 35.5 1500 0.11 0.5 2.0 5.0 2.5 ECA1JM1Q0() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM2Q0() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM3Q0() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM3Q0() 20 34 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 34 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 35 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 35 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 36 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 36 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 37 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 38 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20	2000	200	ECA1HMR22()	2.5	5.0	2.0	0.5	0.12	2.9	11	5	0.22	
1 5 11 10 0.12 0.5 2.0 5.0 2.5 ECA1HM010() 20 2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HM2R2() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM3R3() 20 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 33 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 33 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM300() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM30() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM21() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM21() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM22 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM32 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 33 6.3 11.2 130 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.0 5.0 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 30 0.8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 30 0.8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 30 0.8 11.5 270 0.11 0.5 2.5 5.0 2.5 ECA1JM470()	2000	200	ECA1HMR33()	2.5	5.0	2.0	0.5	0.12	4.4	11	5	0.33	
2.2 5 11 20 0.12 0.5 2.0 5.0 2.5 ECA1HM2R2() 20 3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM3R3() 20 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 20 22 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 10 8 11.5 250 0.12 0.6 5.0 5.0 ECA1HM31() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM31() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM31() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 10 10 12.5 25 1050 0.14 0.8 7.5 ECA1HM322 10 10 10 10 11 10 10 10 10 10 10 10 10	2000	200	ECA1HMR47()	2.5	5.0	2.0	0.5	0.12	5	11	5	0.47	
3.3 5 11 35 0.12 0.5 2.0 5.0 2.5 ECA1HM3R3() 20 4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 33 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM331() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM331() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM322 10 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM322 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM322 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM322 10 330 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 330 18 35.5 1500 0.16 0.8 7.5 ECA1HM322 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1JM30() 20 330 1.0 16 31.5 1300 0.14 0.8 7.5 ECA1JM30() 20 330 18 35.5 1500 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 331 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 331 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 331 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 30 10 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20	2000	200	ECA1HM010()	2.5	5.0	2.0	0.5	0.12	10	11	5	1	
4.7 5 11 45 0.12 0.5 2.0 5.0 2.5 ECA1HM4R7() 20 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 22 5 11 100 0.12 0.5 2.0 5.0 2.5 ECA1HM220() 20 33 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM221() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM31() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM31() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM31() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM322 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM322 5 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM322 5 330 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM30() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM30() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101()	2000	200	ECA1HM2R2()	2.5	5.0	2.0	0.5	0.12	20	11	5	2.2	
50 10 5 11 65 0.12 0.5 2.0 5.0 2.5 ECA1HM100() 20 33 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM470() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM331() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM332 5 3300 18 35.5 1500	2000	200	ECA1HM3R3()	2.5	5.0	2.0	0.5	0.12	35	11	5	3.3	
50	2000	200	ECA1HM4R7()	2.5	5.0	2.0	0.5	0.12	45	11	5	4.7	
33 5 11 110 0.12 0.5 2.0 5.0 2.5 ECA1HM330() 20 47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM101() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM221() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM471() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM322 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 47 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM470()	2000	200	ECA1HM100()	2.5	5.0	2.0	0.5	0.12	65	11	5	10	
47 6.3 11.2 130 0.12 0.5 2.5 5.0 2.5 ECA1HM470() 20 100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM101() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM221() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 47 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101()	2000	200	ECA1HM220()	2.5	5.0	2.0	0.5	0.12	100	11	5	22	50
100 8 11.5 250 0.12 0.6 3.5 5.0 ECA1HM101() 20 220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM221() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101()	2000	200	ECA1HM330()	2.5	5.0	2.0	0.5	0.12	110	11	5	33	
220 10 12.5 400 0.12 0.6 5.0 5.0 ECA1HM221() 20 330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5	2000	200	ECA1HM470()	2.5	5.0	2.5	0.5	0.12	130	11.2	6.3	47	
330 10 16 500 0.12 0.6 5.0 5.0 ECA1HM331() 20 470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101()	1000	200	ECA1HM101()		5.0	3.5	0.6	0.12	250	11.5	8	100	
470 10 20 650 0.12 0.6 5.0 5.0 ECA1HM471() 20 1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101()	500	200	ECA1HM221()		5.0	5.0	0.6	0.12	400	12.5	10	220	
1000 12.5 25 1050 0.12 0.6 5.0 5.0 ECA1HM102() 20 2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20	500	200	ECA1HM331()		5.0	5.0	0.6	0.12	500	16	10	330	
2200 16 31.5 1300 0.14 0.8 7.5 ECA1HM222 10 3300 18 35.5 1500 0.16 0.8 7.5 ECA1HM332 5 10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20	500	200	ECA1HM471()		5.0	5.0	0.6	0.12	650	20	10	470	
3300 18 35.5 1500 0.16 0.8 7.5	500	200	ECA1HM102()		5.0	5.0	0.6	0.12	1050	25	12.5	1000	
10 5 11 70 0.11 0.5 2.0 5.0 2.5 ECA1JM100() 20 22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20		100	ECA1HM222			7.5	0.8	0.14	1300	31.5	16	2200	
22 5 11 105 0.11 0.5 2.0 5.0 2.5 ECA1JM220() 20 33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20		50	ECA1HM332			7.5	0.8	0.16	1500	35.5	18	3300	
33 6.3 11.2 130 0.11 0.5 2.5 5.0 2.5 ECA1JM330() 20 47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20	2000	200	ECA1JM100()	2.5	5.0	2.0	0.5	0.11	70	11	5	10	
47 6.3 11.2 160 0.11 0.5 2.5 5.0 2.5 ECA1JM470() 20 100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20	2000	200	ECA1JM220()	2.5	5.0	2.0	0.5	0.11	105	11	5	22	
100 8 11.5 270 0.11 0.6 3.5 5.0 ECA1JM101() 20	2000	200	ECA1JM330()	2.5	5.0	2.5	0.5	0.11	130	11.2	6.3	33	
63	2000	200	ECA1JM470()	2.5	5.0	2.5	0.5	0.11	160	11.2	6.3	47	
00 00 10 10 10 10 10 10	1000	200	ECA1JM101()		5.0	3.5	0.6	0.11	270	11.5	8	100	63
220 10 16 450 0.11 0.6 5.0 5.0 ECAIJM221() 20	500	200	ECA1JM221()		5.0	5.0	0.6	0.11	450	16	10	220	03
330 10 20 550 0.11 0.6 5.0 5.0 ECA1JM331() 20	500	200	ECA1JM331()		5.0	5.0	0.6	0.11	550	20	10	330	
470 12.5 20 750 0.11 0.6 5.0 5.0 ECA1JM471() 20	500	200	ECA1JM471()		5.0	5.0	0.6	0.11	750	20	12.5	470	
1000 16 25 1100 0.11 0.8 7.5 7.5 ECA1JM102() 10	250	100	ECA1JM102()		7.5	7.5	0.8	0.11	1100	25	16	1000	
2200 18 35.5 1400 0.13 0.8 7.5 ECA1JM222 5		50	ECA1JM222			7.5	0.8	0.13	1400	35.5	18	2200	
0.47 5 11 10 0.10 0.5 2.0 5.0 2.5 ECA2AMR47() 20	2000	200	ECA2AMR47()	2.5	5.0	2.0	0.5	0.10	10	11	5	0.47	
1 5 11 20 0.10 0.5 2.0 5.0 2.5 ECA2AM010() 20	2000	200	ECA2AM010()	2.5	5.0	2.0	0.5	0.10	20	11	5	1	
2.2 5 11 30 0.10 0.5 2.0 5.0 2.5 ECA2AM2R2() 20	2000	200	ECA2AM2R2()	2.5	5.0	2.0	0.5	0.10	30	11	5	2.2	
100 3.3 5 11 40 0.10 0.5 2.0 5.0 2.5 ECA2AM3R3() 20	2000	200	ECA2AM3R3()	2.5	5.0	2.0	0.5	0.10	40	11	5	3.3	100
4.7 5 11 50 0.10 0.5 2.0 5.0 2.5 ECA2AM4R7() 20	2000	200	ECA2AM4R7()	2.5	5.0	2.0	0.5	0.10	50	11	5	4.7	
10 5 11 70 0.10 0.5 2.0 5.0 2.5 ECA2AM100() 20	2000	200	ECA2AM100()	2.5	5.0	2.0	0.5	0.10	70	11	5	10	
22 6.3 11.2 115 0.10 0.5 2.5 5.0 2.5 ECA2AM220() 20	2000	200	ECA2AM220()	2.5	5.0	2.5	0.5	0.10	115	11.2	6.3	22	

Endurance: 85 °C 2000 h

When requesting taped product, please put the letter "B" or "i" between the "()". Lead wire pitch B=5 mm, 7.5 mm, i=2.5 mm. The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.

■ Standard Products

- 0141	100.0	Toducis										
		Case size		Specification			Lead I	Length			Min. Packaging Q'ty	
W.V.	Сар.			Ripple	tan δ	Lead	Le	ead Spac	ce			
VV.V.	(±20 %)	Dia.	Length	Current (120 Hz) (+85 °C)	(120 Hz) (+20 °C)	Dia.	Straight	Taping *B	Taping *i	Part No.	Straight Leads	Taping
(V)	(µF)	(mm)	(mm)	(mA r.m.s.)	,	(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
100	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
200	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	
350	1	6.3	11.2	32	0.20	0.5	2.5	5.0	2.5	ECA2VM010()	200	2000
	2.2	8	11.5	55	0.20	0.6	3.5	5.0		ECA2VM2R2()	200	1000

Endurance: 85 °C 2000 h

When requesting taped product, please put the letter "B" or "i" between the "()". Lead wire pitch B=5 mm, 7.5 mm, i=2.5 mm. The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.

■ Standard Products

		Case size		Specification		Lead Length					Min. Pack	aging Q'ty
W.V.	Сар.			Ripple	tan δ	Lead	Le	ead Spa	се		0	
	(±20 %)	Dia.	Length		(120 Hz) (+20 °C)	Dia.	Straight	Taping *B	Taping *i	Part No.	Straight Leads	Taping
(V)	(µF)	(mm)	(mm)	(mA r.m.s.)		(mm)	(mm)	(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	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	8.0	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	

Endurance : 85 °C 2000 h When requesting taped product, please put the letter "B" or "i" between the "()". Lead wire pitch B=5 mm, 7.5 mm, i=2.5 mm. The taping dimensions are explained on EE189 of our Catalog. Please use it as a reference guide.