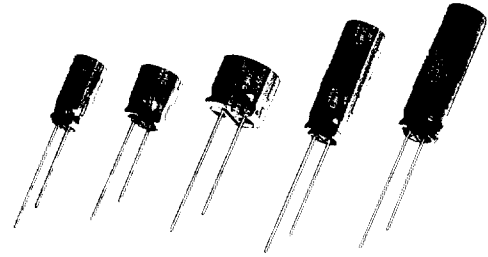


HFQ Series

FEATURES

- Life : 2000 hours at +105°C with ripple current applied
- Low Impedance at High Frequency and Low Temperature
- Wide Range of Operating Temperature from -55°C to +105°C
- Anti-solvent : Freon-TE, TES, TP35 or equivalents



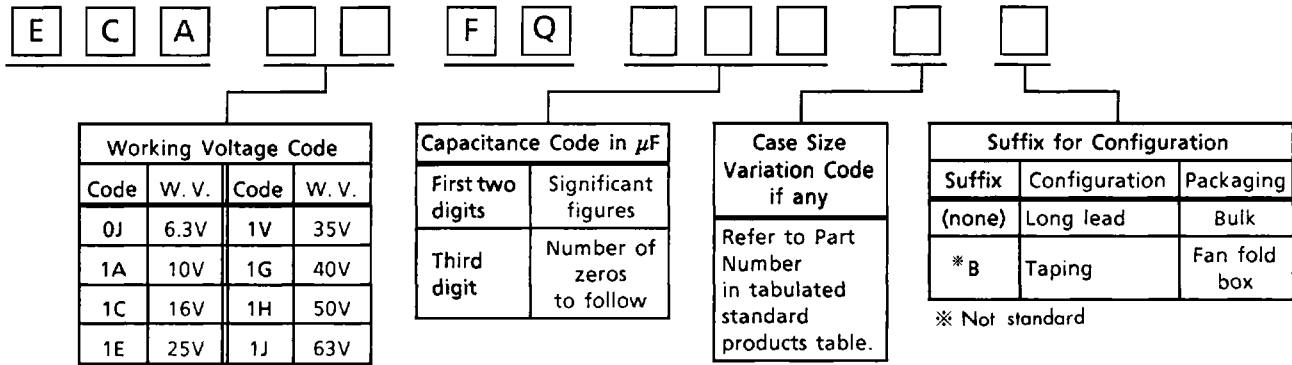
SPECIFICATIONS

Item	Performance Characteristics																															
Operating Temperature Range	-55°C to +105°C																															
Rated Working Voltage Range	6.3V to 63V DC																															
Nominal Capacitance Range	6.8μF to 15 000μF (120Hz, +20°C)																															
Capacitance Tolerance	±20% (120Hz, +20°C)																															
Leakage Current	$I < 0.01CV$ or $3 [\mu A]$ Whichever is greater measured after a 2 minute application of rated working voltage at +20°C. (C = nominal capacitance in micro-farads, V = rated working voltage in volts)																															
Tangent of Loss Angle	<table border="1"> <tr> <td>Rated working voltage [V]</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>40</td> <td>50</td> <td>63</td> </tr> <tr> <td>$\tan \delta$ (120Hz, +20°C) <</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.11</td> <td>0.10</td> <td>0.08</td> </tr> </table> <p>For capacitance value > 1 000μF, add 0.02 per another 1 000μF.</p>	Rated working voltage [V]	6.3	10	16	25	35	40	50	63	$\tan \delta$ (120Hz, +20°C) <	0.22	0.19	0.16	0.14	0.12	0.11	0.10	0.08													
Rated working voltage [V]	6.3	10	16	25	35	40	50	63																								
$\tan \delta$ (120Hz, +20°C) <	0.22	0.19	0.16	0.14	0.12	0.11	0.10	0.08																								
Impedance at High Frequency	Refer to Maximum Impedance in tabulated standard products table.																															
Impedance at Low Temperature	$Z (-10^\circ C, 100KHz) \leq 2$ times of specified value (+20°C, 100KHz)																															
Ripple Current	Refer to standard products table.																															
Ripple Current Correction Factor for Frequency	<table border="1"> <tr> <td>Frequency [Hz]</td> <td>60</td> <td>120</td> <td>1K</td> <td>10K</td> <td>100K</td> </tr> <tr> <td rowspan="4">Correction Factor (multiplier)</td> <td>6.8-330μF</td> <td>0.55</td> <td>0.65</td> <td>0.85</td> <td>0.90</td> <td>1.0</td> </tr> <tr> <td>390-1 000μF</td> <td>0.70</td> <td>0.75</td> <td>0.90</td> <td>0.95</td> <td>1.0</td> </tr> <tr> <td>1 200-2 200μF</td> <td>0.75</td> <td>0.80</td> <td>0.90</td> <td>0.95</td> <td>1.0</td> </tr> <tr> <td>2 700-15 000μF</td> <td>0.80</td> <td>0.85</td> <td>0.95</td> <td>1.0</td> <td>1.0</td> </tr> </table>	Frequency [Hz]	60	120	1K	10K	100K	Correction Factor (multiplier)	6.8-330μF	0.55	0.65	0.85	0.90	1.0	390-1 000μF	0.70	0.75	0.90	0.95	1.0	1 200-2 200μF	0.75	0.80	0.90	0.95	1.0	2 700-15 000μF	0.80	0.85	0.95	1.0	1.0
Frequency [Hz]	60	120	1K	10K	100K																											
Correction Factor (multiplier)	6.8-330μF	0.55	0.65	0.85	0.90	1.0																										
	390-1 000μF	0.70	0.75	0.90	0.95	1.0																										
	1 200-2 200μF	0.75	0.80	0.90	0.95	1.0																										
	2 700-15 000μF	0.80	0.85	0.95	1.0	1.0																										
Surge Voltage	<table border="1"> <tr> <td>Rated working voltage [V]</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>40</td> <td>50</td> <td>63</td> </tr> <tr> <td>Surge Voltage [V]</td> <td>8</td> <td>13</td> <td>20</td> <td>32</td> <td>44</td> <td>50</td> <td>63</td> <td>79</td> </tr> </table>	Rated working voltage [V]	6.3	10	16	25	35	40	50	63	Surge Voltage [V]	8	13	20	32	44	50	63	79													
Rated working voltage [V]	6.3	10	16	25	35	40	50	63																								
Surge Voltage [V]	8	13	20	32	44	50	63	79																								
High Temperature Loading	<p>Test conditions</p> <table border="1"> <tr> <td>Duration</td> <td>2 000 hours (1 000 hours for $\phi D \leq 8mm$)</td> </tr> <tr> <td>Ambient temperature</td> <td>+105°C</td> </tr> <tr> <td>Applied voltage</td> <td>DC voltage with maximum permissible ripple current (the sum of the DC voltage and super-imposed peak AC voltage for maximum permissible ripple current should be equal to maximum permissible DC working voltage.)</td> </tr> </table>	Duration	2 000 hours (1 000 hours for $\phi D \leq 8mm$)	Ambient temperature	+105°C	Applied voltage	DC voltage with maximum permissible ripple current (the sum of the DC voltage and super-imposed peak AC voltage for maximum permissible ripple current should be equal to maximum permissible DC working voltage.)																									
Duration	2 000 hours (1 000 hours for $\phi D \leq 8mm$)																															
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Applied voltage	DC voltage with maximum permissible ripple current (the sum of the DC voltage and super-imposed peak AC voltage for maximum permissible ripple current should be equal to maximum permissible DC working voltage.)																															

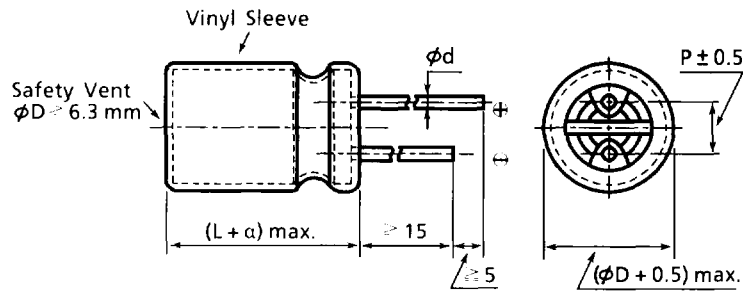
SPECIFICATIONS (continued)

Item	Performance Characteristics					
High Temperature Loading (continued)	Post test requirements at +20°C					
	Leakage current	≤ Initial specified value				
	Capacitance change	≤ ±20% of initial measured value				
	tan δ	≤ 200% of initial specified value				
Shelf Life	Test conditions					
	Duration	1 000 hours				
	Ambient temperature	+ 105°C				
	Applied voltage	(none)				
	Post test conditioning by application of voltage at +20°C					
	Applied voltage	Rated working voltage				
	Duration	30min				
	Discharge after application of voltage	Discharge through a resistor				
	Stabilization time	24h to 48h after discharge				
	Post test requirements at +20°C (after post test conditioning)					
Leakage current	≤ Initial specified Value					
Capacitance change	≤ ±20% of initial measured value					
tan δ	≤ 200% of initial specified value					
Cleaning	Capacitors shall be capable of withstanding exposure to following cleaning solvents.					
	Conditions		Solvent structure	Exposure time	Temperature	Ultrasonic wave
	Solvents	Freon-TE, TES, TP35 or equivalents	Liquid or vapor	≤ 5 min (total)	≤ boiling point at 1 atm	Acceptable
Other Items	Unless otherwise specified herein, shall conform to Panasonic Specifications and/or JIS-C-5141 where it is applicable.					

PART NUMBER SYSTEM



DIMENSIONS [mm]



a	L
1.0 mm	≤ 16 mm
2.0 mm	≥ 20mm

ϕD	4	5	6.3	8	10	12.5		16	18
L	-	-	-	-	-	≤ 25	> 25	-	-
ϕd	0.45	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
A	1.5	2	2.5	3.5	5	5	5	7.5	7.5

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μF]	Part Number	Dimensions φD × L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]	
6.3	68	ECA0JFQ680	4 × 11	120	1.0	
	100	ECA0JFQ101	5 × 11	175	0.65	
	150	ECA0JFQ151	5 × 15	235	0.46	
	220	ECA0JFQ221	6.3 × 11.2	290	0.30	
	330	ECA0JFQ331	6.3 × 15	400	0.20	
	470	ECA0JFQ471	8 × 12.5	445	0.17	
	680		ECA0JFQ681L	8 × 15	575	0.12
			ECA0JFQ681	10 × 12.5	625	0.12
	820	ECA0JFQ821	10 × 16	795	0.09	
	1 000	ECA0JFQ102	8 × 20	760	0.09	
	1 200		ECA0JFQ122L	10 × 20	1 015	0.065
			ECA0JFQ122	12.5 × 15	1 010	0.065
	1 500	ECA0JFQ152	10 × 25	1 190	0.055	
	2 200		ECA0JFQ222L	10 × 30	1 440	0.045
			ECA0JFQ222	12.5 × 20	1 400	0.042
	2 700		ECA0JFQ272	12.5 × 25	1 690	0.034
			ECA0JFQ272S	16 × 15	1 360	0.046
	3 300	ECA0JFQ332	18 × 15	1 620	0.038	
	3 900	ECA0JFQ392	12.5 × 30	1 950	0.030	
	4 700		ECA0JFQ472L	12.5 × 35	2 220	0.024
			ECA0JFQ472	16 × 20	1 730	0.034
5 600		ECA0JFQ562L	12.5 × 40	2 390	0.021	
		ECA0JFQ562	16 × 25	2 070	0.028	
		ECA0JFQ562S	18 × 20	2 000	0.028	
6 800		ECA0JFQ682	16 × 31.5	2 350	0.025	
		ECA0JFQ682S	18 × 25	2 200	0.025	
8 200	ECA0JFQ822	16 × 35.5	2 550	0.022		
10 000	ECA0JFQ103	18 × 31.5	2 800	0.023		
12 000		ECA0JFQ123	16 × 40	2 900	0.018	
		ECA0JFQ123S	18 × 35.5	2 900	0.021	
15 000	ECA0JFQ153	18 × 40	3 000	0.017		

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μF]	Part Number	Dimensions φD×L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
10	47	ECA1AFQ470	4×11	120	1.0
	82	ECA1AFQ820	5×11	175	0.65
	100	ECA1AFQ101	5×15	235	0.46
	180	ECA1AFQ181	6.3×11.2	290	0.30
	220	ECA1AFQ221	6.3×15	400	0.20
	330	ECA1AFQ331	8×12.5	445	0.17
	470	ECA1AFQ471L ECA1AFQ471	8×15 10×12.5	575 625	0.12 0.12
	560	ECA1AFQ561	10×16	795	0.09
	680	ECA1AFQ681	8×20	760	0.09
	1 000	ECA1AFQ102L ECA1AFQ102	10×20 12.5×15	1 015 1 010	0.065 0.065
	1 200	ECA1AFQ122	10×25	1 190	0.055
	1 500	ECA1AFQ152L	10×30	1 440	0.045
	1 800	ECA1AFQ182 ECA1AFQ182S	12.5×20 16×15	1 400 1 360	0.042 0.046
	2 200	ECA1AFQ222 ECA1AFQ222S	12.5×25 18×15	1 690 1 620	0.034 0.038
	2 700	ECA1AFQ272	12.5×30	1 950	0.030
	3 300	ECA1AFQ332L ECA1AFQ332	12.5×35 16×20	2 220 1 730	0.024 0.034
	3 900	ECA1AFQ392L ECA1AFQ392 ECA1AFQ392S	12.5×40 16×25 18×20	2 390 2 070 2 000	0.021 0.028 0.028
	5 600	ECA1AFQ562 ECA1AFQ562S	16×31.5 18×25	2 350 2 200	0.025 0.025
	6 800	ECA1AFQ682L ECA1AFQ682	16×35.5 18×31.5	2 550 2 800	0.022 0.023
	8 200	ECA1AFQ822L ECA1AFQ822	16×40 18×35.5	2 900 2 900	0.018 0.021
10 000	ECA1AFQ103	18×40	3 000	0.017	
16	39	ECA1CFQ390	4×11	120	1.0
	56	ECA1CFQ560	5×11	175	0.65
	82	ECA1CFQ820	5×15	235	0.46
	120	ECA1CFQ121	6.3×11.2	290	0.30
	180	ECA1CFQ181	6.3×15	400	0.20
	270	ECA1CFQ271	8×12.5	445	0.17
	330	ECA1CFQ331L ECA1CFQ331	8×15 10×12.5	575 625	0.12 0.12
	390	ECA1CFQ391	10×16	795	0.09
	470	ECA1CFQ471	8×20	760	0.09
	680	ECA1CFQ681L ECA1CFQ681	10×20 12.5×15	1 015 1 010	0.065 0.065

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μ F]	Part Number	Dimensions ϕ D×L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
16	820	ECA1CFQ821	10×25	1 190	0.055
	1 200	ECA1CFQ122L	10×30	1 440	0.045
		ECA1CFQ122	12.5×20	1 400	0.042
	1 500	ECA1CFQ152	12.5×25	1 690	0.034
		ECA1CFQ152S	16×15	1 360	0.046
	1 800	ECA1CFQ182	18×15	1 620	0.038
	2 200	ECA1CFQ222L	12.5×30	1 950	0.030
		ECA1CFQ222	16×20	1 730	0.034
	2 700	ECA1CFQ272L	12.5×35	2 220	0.024
		ECA1CFQ272	16×25	2 070	0.028
	3 300	ECA1CFQ332L	12.5×40	2 390	0.021
ECA1CFQ332S		18×20	2 000	0.028	
3 900	ECA1CFQ392	16×31.5	2 350	0.025	
	ECA1CFQ392S	18×25	2 200	0.025	
4 700	ECA1CFQ472L	16×35.5	2 550	0.022	
	ECA1CFQ472	18×31.5	2 800	0.023	
5 600	ECA1CFQ562	16×40	2 900	0.018	
6 800	ECA1CFQ682	18×35.5	2 900	0.021	
8 200	ECA1CFQ822	18×40	3 000	0.017	
25	27	ECA1EFQ270	4×11	120	1.0
	39	ECA1EFQ390	5×11	175	0.65
	56	ECA1EFQ560	5×15	235	0.46
	82	ECA1EFQ820	6.3×11.2	290	0.30
	120	ECA1EFQ121	6.3×15	400	0.20
	180	ECA1EFQ181	8×12.5	445	0.17
		ECA1EFQ221L	8×15	575	0.12
	220	ECA1EFQ221	10×12.5	625	0.12
		ECA1EFQ271	10×16	795	0.09
	330	ECA1EFQ331	8×20	760	0.09
	470	ECA1EFQ471L	10×20	1 015	0.065
		ECA1EFQ471	12.5×15	1 010	0.065
	560	ECA1EFQ561	10×25	1 190	0.055
	820	ECA1EFQ821L	10×30	1 440	0.045
		ECA1EFQ821	12.5×20	1 400	0.042
		ECA1EFQ821S	16×15	1 360	0.046
	1 000	ECA1EFQ102	12.5×25	1 690	0.034
1 200	ECA1EFQ122	18×15	1 620	0.038	
1 500	ECA1EFQ152L	12.5×30	1 950	0.030	
	ECA1EFQ152	16×20	1 730	0.034	
1 800	ECA1EFQ182L	12.5×35	2 220	0.024	
	ECA1EFQ182	16×25	2 070	0.028	

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μ F]	Part Number	Dimensions ϕ D x L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
25	2 200	ECA1EFQ222L	12.5 x 40	2 390	0.021
		ECA1EFQ222S	18 x 20	2 000	0.028
	2 700	ECA1EFQ272	16 x 31.5	2 350	0.025
		ECA1EFQ272S	18 x 25	2 200	0.025
	3 300	ECA1EFQ332L	16 x 35.5	2 550	0.022
ECA1EFQ332	18 x 31.5	2 800	0.023		
3 900	ECA1EFQ392L	16 x 40	2 900	0.018	
	ECA1EFQ392	18 x 35.5	2 900	0.021	
4 700	ECA1EFQ472	18 x 40	3 000	0.017	
35	18	ECA1VFQ180	4 x 11	120	1.0
	27	ECA1VFQ270	5 x 11	175	0.65
	39	ECA1VFQ390	5 x 15	235	0.46
	56	ECA1VFQ560	6.3 x 11.2	290	0.30
	82	ECA1VFQ820	6.3 x 15	400	0.20
		120	ECA1VFQ121	8 x 12.5	445
	150	ECA1VFQ151L	8 x 15	575	0.12
		ECA1VFQ151	10 x 12.5	625	0.12
	180	ECA1VFQ181	10 x 16	795	0.09
	220	ECA1VFQ221	8 x 20	760	0.09
	330	ECA1VFQ331L	10 x 20	1 015	0.065
		ECA1VFQ331	12.5 x 15	1 010	0.065
	390	ECA1VFQ391	10 x 25	1 190	0.055
	560	ECA1VFQ561L	10 x 30	1 440	0.045
		ECA1VFQ561	12.5 x 20	1 400	0.042
		ECA1VFQ561S	16 x 15	1 360	0.046
	680	ECA1VFQ681	12.5 x 25	1 690	0.034
	820	ECA1VFQ821	18 x 15	1 620	0.038
	1 000	ECA1VFQ102L	12.5 x 30	1 950	0.030
		ECA1VFQ102	16 x 20	1 730	0.034
1 200	ECA1VFQ122L	12.5 x 35	2 220	0.024	
	ECA1VFQ122	16 x 25	2 070	0.028	
1 500	ECA1VFQ152L	12.5 x 40	2 390	0.021	
	ECA1VFQ152	18 x 20	2 000	0.028	
1 800	ECA1VFQ182	16 x 31.5	2 350	0.025	
	ECA1VFQ182S	18 x 25	2 200	0.025	
2 200	ECA1VFQ222L	16 x 35.5	2 550	0.022	
	ECA1VFQ222	18 x 31.5	2 800	0.023	
2 700	ECA1VFQ272L	16 x 40	2 900	0.018	
	ECA1VFQ272	18 x 35.5	2 900	0.021	
3 300	ECA1VFQ332	18 x 40	3 000	0.017	

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μ F]	Part Number	Dimensions ϕ D x L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
* (40)	12	ECA1GFQ120	4 x 11	120	1.000
	22	ECA1GFQ220	5 x 11	175	0.650
	33	ECA1GFQ330	5 x 15	235	0.460
	39	ECA1GFQ390	6.3 x 11.2	290	0.300
	68	ECA1GFQ680	6.3 x 15	400	0.200
	82	ECA1GFQ820	8 x 12.5	445	0.170
	100	ECA1GFQ101	10 x 12.5	625	0.120
	120	ECA1GFQ121	8 x 15	575	0.120
	150	ECA1GFQ151	10 x 16	795	0.090
	180	ECA1GFQ181	8 x 20	760	0.090
	270	ECA1GFQ271L ECA1GFQ271	10 x 20	1 015	0.065
			12.5 x 15	1 010	0.065
	330	ECA1GFQ331	10 x 25	1 190	0.055
	470	ECA1GFQ471L ECA1GFQ471 ECA1GFQ471S	10 x 30	1 440	0.045
			12.5 x 20	1 400	0.042
			16 x 15	1 360	0.046
	560	ECA1GFQ561 ECA1GFQ561S	12.5 x 25	1 690	0.034
			18 x 15	1 620	0.038
	680	ECA1GFQ681	12.5 x 30	1 950	0.030
	820	ECA1GFQ821L ECA1GFQ821	12.5 x 35	2 220	0.024
16 x 20			1 730	0.034	
1 000	ECA1GFQ102L ECA1GFQ102 ECA1GFQ102S	12.5 x 40	2 390	0.021	
		16 x 25	2 070	0.028	
		18 x 20	2 000	0.028	
1 200	ECA1GFQ122 ECA1GFQ122S	16 x 31.5	2 350	0.025	
		18 x 25	2 200	0.025	
1 800	ECA1GFQ182	18 x 31.5	2 800	0.023	
2 200	ECA1GFQ222	18 x 35.5	2 900	0.021	
2 700	ECA1GFQ272	18 x 40	3 000	0.017	
50	10	ECA1HFQ100	4 x 11	90	2.500
	18	ECA1HFQ180	5 x 11	155	1.300
	27	ECA1HFQ270	5 x 15	215	0.900
	33	ECA1HFQ330	6.3 x 11.2	260	0.600
	56	ECA1HFQ560	6.3 x 15	360	0.400
	68	ECA1HFQ680	8 x 12.5	410	0.300
	82	ECA1HFQ820	10 x 12.5	510	0.230
	100	ECA1HFQ101	8 x 15	500	0.230
	120	ECA1HFQ121	10 x 16	640	0.160
	150	ECA1HFQ151	8 x 20	670	0.160
	220	ECA1HFQ221L ECA1HFQ221	10 x 20	890	0.110
12.5 x 15			920	0.130	

* 40v is not standard.

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μ F]	Part Number	Dimensions ϕ D x L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
50	270	ECA1HFQ271	10 x 25	1 040	0.090
	330	ECA1HFQ331	12.5 x 20	1 200	0.080
	390	ECA1HFQ391L	10 x 30	1 300	0.075
		ECA1HFQ391	16 x 15	1 270	0.084
	470	ECA1HFQ471	12.5 x 25	1 440	0.070
		ECA1HFQ471S	18 x 15	1 470	0.070
	560	ECA1HFQ561	12.5 x 30	1 680	0.060
	680	ECA1HFQ681L	12.5 x 35	1 850	0.050
		ECA1HFQ681	16 x 20	1 470	0.053
		ECA1HFQ681S	18 x 20	1 810	0.050
	820	ECA1HFQ821L	12.5 x 40	2 010	0.043
ECA1HFQ821		16 x 25	1 810	0.044	
1 000	ECA1HFQ102	16 x 31.5	2 120	0.033	
	ECA1HFQ102S	18 x 25	2 000	0.041	
1 200	ECA1HFQ122L	16 x 35.5	2 260	0.028	
	ECA1HFQ122	18 x 31.5	2 220	0.031	
1 500	ECA1HFQ152L	16 x 40	2 410	0.026	
	ECA1HFQ152	18 x 35.5	2 460	0.027	
1 800	ECA1HFQ182	18 x 40	2 560	0.025	
63	6.8	ECA1JFQ6R8	4 x 11	80	3.500
	12	ECA1JFQ120	5 x 11	145	2.000
	18	ECA1JFQ180	5 x 15	200	1.300
	22	ECA1JFQ220	6.3 x 11.2	240	1.000
	39	ECA1JFQ390	6.3 x 15	330	0.700
	56	ECA1JFQ560	8 x 12.5	370	0.380
	68	ECA1JFQ680	10 x 12.5	470	0.300
	82	ECA1JFQ820	8 x 15	450	0.300
	100	ECA1JFQ101L	8 x 20	600	0.190
		ECA1JFQ101	10 x 16	580	0.190
	150	ECA1JFQ151L	10 x 20	820	0.140
		ECA1JFQ151	12.5 x 15	890	0.160
	180	ECA1JFQ181	10 x 25	950	0.120
	220	ECA1JFQ221	12.5 x 20	1 140	0.095
	270	ECA1JFQ271L	10 x 30	1 110	0.095
ECA1JFQ271		16 x 15	1 220	0.100	
330	ECA1JFQ331	12.5 x 25	1 420	0.090	
	ECA1JFQ331S	18 x 15	1 410	0.085	
390	ECA1JFQ391	12.5 x 30	1 620	0.080	

STANDARD PRODUCTS TABLE

Rated DC Working Voltage [V]	Nominal Capacitance (120Hz, +20°C) [μ F]	Part Number	Dimensions ϕ D x L [mm]	Maximum Permissible Ripple Current (100KHz, +105°C) [mA rms]	Maximum Impedance (100KHz, +20°C) [Ω]
63	470	ECA1JFQ471L	12.5 x 35	1 780	0.065
		ECA1JFQ471	16 x 20	1 450	0.070
	560	ECA1JFQ561L	12.5 x 40	1 950	0.060
		ECA1JFQ561	16 x 25	1 750	0.060
		ECA1JFQ561S	18 x 20	1 750	0.065
	680	ECA1JFQ681	16 x 31.5	2 050	0.050
		ECA1JFQ681S	18 x 25	1 940	0.057
820	ECA1JFQ821	16 x 35.5	2 220	0.042	
1 000	ECA1JFQ102L	16 x 40	2 370	0.034	
	ECA1JFQ102	18 x 31.5	2 110	0.048	
1 200	ECA1JFQ122	18 x 35.5	2 300	0.041	
1 500	ECA1JFQ152	18 x 40	2 510	0.033	