

**SUBJECT: ECA-xxFQ Series Radial Leaded Aluminum Electrolytic Capacitor
will be Discontinued Effective per below.**

BULLETIN #: ECG.PG.44.00.0424

Date: April 24, 2000

LAST TIME BUY: October 31, 2000

LAST TIME SHIPMENT: December 31, 2000

**SUGGESTED REPLACEMENT: EEU-FC (FC series) Radial Leaded Aluminum
Electrolytic Capacitor**

The EEU-FC (FC Series) radial leaded aluminum electrolytic capacitor is the recommended replacement for the HFQ series. Generally the FC series is a drop in replacement for the HFQ series but there may be some exceptions in can size, lead spacing, footprint and electrical properties depending on the capacitance and voltage values required. Please contact the Resident Engineers for the exact replacement part number and any deviations.

Please notify your customers of the change.

HFQ series replacement program to FC series (last order : July/End/2000)

ECEAxxFQxxx

EEUFCxxxxx

1998/9/22

The deviation of case size is not acceptable, please select higher capacitance part,

shows deviation

1999/11/24 rev.A

HFQ - series							FC - series								
HFQ Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm	FC Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm
			Dmm	Lmm							Dmm	Lmm			
ECA0JFQ680	6.3	68	4	11	1.5	120	1.000	EEUFC0J680	6.3	68	4	11	1.5	120	1.30
ECA0JFQ101	6.3	100	5	11	2	175	0.650	EEUFC0J101	6.3	100	5	11	2.0	175	0.800
ECA0JFQ151	6.3	150	5	15	2	235	0.460	EEUFC0J151	6.3	150	5	15	2.0	235	0.500
ECA0JFQ221	6.3	220	6.3	11.2	2.5	290	0.300	EEUFC0J221	6.3	220	6.3	11.2	2.5	290	0.350
ECA0JFQ331	6.3	330	6.3	15	2.5	400	0.200	EEUFC0J331	6.3	330	6.3	15	2.5	400	0.250
ECA0JFQ471	6.3	470	8	12.5	3.5	445	0.170	EEUFC0J471	6.3	470	8	11.5	3.5	555	0.117
ECA0JFQ681L	6.3	680	8	15	3.5	575	0.120	EEUFC1A681L	10	680	8	15	3.5	730	0.085
ECA0JFQ681	6.3	680	10	12.5	5	625	0.120	EEUFC1A681	10	680	10	12.5	5.0	755	0.090
ECA0JFQ821	6.3	820	10	16	5	795	0.090	EEUFC0J821	6.3	820	10	12.5	5.0	755	0.090
ECA0JFQ102	6.3	1000	8	20	3.5	760	0.090	EEUFC1A102L	10	1000	8	20	3.5	995	0.065
ECA0JFQ122L	6.3	1200	10	20	5	1015	0.065	EEUFC0J122	6.3	1200	10	16	5.0	1050	0.068
ECA0JFQ122	6.3	1200	12.5	15	5	1010	0.065	EEUFC0J122	6.3	1200	10	16	5.0	1050	0.068
ECA0JFQ152	6.3	1500	10	25	5	1190	0.055	EEUFC0J152	6.3	1500	10	20	5.0	1220	0.052
ECA0JFQ222L	6.3	2200	10	30	5	1440	0.045	EEUFC0J222	6.3	2200	10	25	5.0	1440	0.045
ECA0JFQ222	6.3	2200	12.5	20	5	1400	0.042	EEUFC1A222	10	2200	12.5	20	5.0	1665	0.038
ECA0JFQ272	6.3	2700	12.5	25	5	1690	0.034	EEUFC0J272	6.3	2700	12.5	20	5.0	1655	0.038
ECA0JFQ272S	6.3	2700	16	15	7.5	1360	0.046	EEUFC0J272S	6.3	2700	16	15	7.5	1690	0.043
ECA0JFQ332	6.3	3300	18	15	7.5	1620	0.038	EEUFC0J332S	6.3	3300	18	15	7.5	2000	0.038
ECA0JFQ392	6.3	3900	12.5	30	5	1950	0.030	EEUFC0J392	6.3	3900	12.5	25	5.0	1945	0.030
ECA0JFQ472L	6.3	4700	12.5	35	5	2220	0.024	EEUFC0J472	6.3	4700	12.5	30	5.0	2310	0.025
ECA0JFQ472	6.3	4700	16	20	7.5	1730	0.034	EEUFC0J472S	6.3	4700	16	20	7.5	2205	0.029
ECA0JFQ562L	6.3	5600	12.5	40	5	2390	0.021	EEUFC0J562L	6.3	5600	12.5	35	5.0	2510	0.022
ECA0JFQ562	6.3	5600	16	25	7.5	2070	0.028	EEUFC0J562	6.3	5600	16	20	7.5	2205	0.029
ECA0JFQ562S	6.3	5600	18	20	7.5	2000	0.028	EEUFC0J562	6.3	5600	16	20	7.5	2205	0.029
ECA0JFQ682	6.3	6800	16	31.5	7.5	2350	0.025	EEUFC0J682	6.3	6800	16	25	7.5	2555	0.022
ECA0JFQ682S	6.3	6800	18	25	7.5	2200	0.025	EEUFC0J682S	6.3	6800	18	20	7.5	2490	0.028
ECA0JFQ822	6.3	8200	16	35.5	7.5	2550	0.022	EEUFC0J822	6.3	6800	16	31.5	7.5	3010	0.018
ECA0JFQ103	6.3	10000	18	31.5	7.5	2800	0.023	EEUFC0J103S	6.3	10000	18	25	7.5	2740	0.020
ECA0JFQ123	6.3	12000	16	40	7.5	2900	0.018	EEUFC0J123L	6.3	12000	16	40	7.5	3360	0.015
ECA0JFQ123S	6.3	12000	18	35.5	7.5	2900	0.021	EEUFC0J123	6.3	12000	18	31.5	7.5	3635	0.016
ECA0JFQ153	6.3	15000	18	40	7.5	3000	0.017	EEUFC0J153	6.3	15000	18	35.5	7.5	3680	0.015
ECA1AFQ470	10	47	4	11	1.5	120	1.000	EEUFC1A470	10	47	4	11	1.5	120	1.300
ECA1AFQ820	10	82	5	11	2	175	0.650	EEUFC1A820	10	82	5	11	2.0	175	0.800
ECA1AFQ101	10	100	5	15	2	235	0.460	EEUFC1A101	10	100	5	15	2.0	235	0.500
ECA1AFQ181	10	180	6.3	11.2	2.5	290	0.300	EEUFC1A181	10	180	6.3	11.2	2.5	290	0.350
ECA1AFQ221	10	220	6.3	15	2.5	400	0.200	EEUFC1A221	10	220	6.3	15	2.5	400	0.250
ECA1AFQ331	10	330	8	12.5	3.5	445	0.170	EEUFC1A331	10	330	8	11.5	3.5	555	0.117
ECA1AFQ471L	10	470	8	15	3.5	575	0.120	EEUFC1A471	10	470	8	11.5	3.5	555	0.117
ECA1AFQ471	10	470	10	12.5	5	625	0.120	EEUFC1C471	16	470	10	12.5	5.0	755	0.090
ECA1AFQ561	10	560	10	16	5	795	0.090	EEUFC1A561	10	560	10	12.5	5.0	755	0.090
ECA1AFQ681	10	680	8	20	3.5	760	0.090	EEUFC1A681L	10	680	8	15	3.5	730	0.085
ECA1AFQ102L	10	1000	10	20	5	1015	0.065	EEUFC1A102	10	1000	10	16	5.0	1050	0.068
ECA1AFQ102	10	1000	12.5	15	5	1010	0.065	EEUFC1A102	10	1000	10	16	5.0	1050	0.068
ECA1AFQ122	10	1200	10	25	5	1190	0.055	EEUFC1A122	10	1200	10	20	5.0	1220	0.052
ECA1AFQ152L	10	1500	10	30	5	1440	0.045	EEUFC1A152	10	1500	10	25	5.0	1440	0.045
ECA1AFQ182	10	1800	12.5	20	5	1400	0.042	EEUFC1A182	10	1800	12.5	20	5.0	1655	0.038
ECA1AFQ182S	10	1800	16	15	7.5	1360	0.046	EEUFC1A182S	10	1800	16	15	7.5	1690	0.043
ECA1AFQ222	10	2200	12.5	25	5	1690	0.034	EEUFC1A222	10	2200	12.5	20	5.0	1655	0.038
ECA1AFQ222S	10	2200	18	15	7.5	1620	0.038	EEUFC1C222S	16	2200	16	20	7.5	2205	0.029
								EEUFC1A272S	10	2700	18	15	7.5	2000	0.038
ECA1AFQ272	10	2700	12.5	30	5	1950	0.030	EEUFC1A272	10	2700	12.5	25	5.0	1945	0.030
ECA1AFQ332L	10	3300	12.5	35	5	2220	0.024	EEUFC1A332	10	3300	12.5	30	5.0	2310	0.025
ECA1AFQ332	10	3300	16	20	7.5	1730	0.034	EEUFC1A332S	10	3300	16	20	7.5	2205	0.029
ECA1AFQ392L	10	3900	12.5	40	5	2390	0.021	EEUFC1A392L	10	3900	12.5	35	5.0	2510	0.022
ECA1AFQ392	10	3900	16	25	7.5	2070	0.028	EEUFC1A392	10	3900	16	20	7.5	2205	0.029
ECA1AFQ392S	10	3900	18	20	7.5	2000	0.028	EEUFC1A392	10	3900	16	20	7.5	2205	0.029
ECA1AFQ562	10	5600	16	31.5	7.5	2350	0.025	EEUFC1A562	10	5600	16	25	7.5	2555	0.022
ECA1AFQ562S	10	5600	18	25	7.5	2200	0.025	EEUFC1A562	10	5600	16	25	7.5	2555	0.022
								EEUFC1A562S	10	5600	18	20	7.5	2490	0.028
ECA1AFQ682L	10	6800	16	35.5	7.5	2550	0.022	EEUFC1A682	10	6800	16	31.5	7.5	3010	0.018
ECA1AFQ682	10	6800	18	31.5	7.5	2800	0.023	EEUFC1A682	10	6800	16	31.5	7.5	3010	0.018
								EEUFC1A682S	10	6800	18	25	7.5	2740	0.020
ECA1AFQ822L	10	8200	16	40	7.5	2900	0.018	EEUFC1A822L	10	8200	16	35.5	7.5	3150	0.016
ECA1AFQ822	10	8200	18	35.5	7.5	2900	0.021	EEUFC1A822L	10	8200	16	35.5	7.5	3150	0.016
								EEUFC1A822	10	8200	18	31.5	7.5	3635	0.016
ECA1AFQ103	10	10000	18	40	7.5	3000	0.017	EEUFC1A103	10	10000	18	35.5	7.5	3680	0.015

HFQ series replacement program to FC series (last order : July/End/2000)

ECEAxxFQxxx

EEUFCxxxxx

1998/9/22

The deviation of case size is not acceptable, please select higher capacitance part,

shows deviation

1999/11/24 rev.A

HFQ - series								FC - series							
HFQ Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm	FC Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm
			Dmm	Lmm							Dmm	Lmm			
ECA1CFQ390	16	39	4	11	1.5	120	1.000	EEUFC1C390	16	39	4	11	1.5	120	1.300
ECA1CFQ560	16	56	5	11	2	175	0.650	EEUFC1C560	16	56	5	11	2.0	175	0.800
ECA1CFQ820	16	82	5	15	2	235	0.460	EEUFC1C820	16	82	5	15	2.0	235	0.500
ECA1CFQ121	16	120	6.3	11.2	2.5	290	0.300	EEUFC1C121	16	120	6.3	11.2	2.5	290	0.350
ECA1CFQ181	16	180	6.3	15	2.5	400	0.200	EEUFC1C181	16	180	6.3	15	2.5	400	0.250
ECA1CFQ271	16	270	8	12.5	3.5	445	0.170	EEUFC1C271	16	270	8	11.5	3.5	555	0.117
ECA1CFQ331L	16	330	8	15	3.5	575	0.120	EEUFC1C331	16	330	8	11.5	3.5	555	0.117
ECA1CFQ331	16	330	10	12.5	5	625	0.120	EEUFC1E331	25	330	10	12.5	5.0	755	0.090
ECA1CFQ391	16	390	10	16	5	795	0.090	EEUFC1C391	16	390	10	12.5	5.0	755	0.090
ECA1CFQ471	16	470	8	20	3.5	760	0.090	EEUFC1C471L	16	470	8	15	3.5	730	0.085
ECA1CFQ681L	16	680	10	20	5	1015	0.065	EEUFC1C681	16	680	10	16	5.0	1050	0.068
ECA1CFQ681	16	680	12.5	15	5	1010	0.065	EEUFC1C681	16	680	10	16	5.0	1050	0.068
ECA1CFQ821	16	820	10	25	5	1190	0.055	EEUFC1C821	16	820	10	20	5.0	1220	0.052
ECA1CFQ122L	16	1200	10	30	5	1440	0.045	EEUFC1C122	16	1200	10	25	5.0	1440	0.045
ECA1CFQ122	16	1200	12.5	20	5	1400	0.042	EEUFC1C122	16	1200	10	25	5.0	1440	0.045
								EEUFC1C152	16	1500	12.5	20	5.0	1655	0.038
ECA1CFQ152	16	1500	12.5	25	5	1690	0.034	EEUFC1C152	16	1500	12.5	20	5.0	1655	0.038
ECA1CFQ152S	16	1500	16	15	7.5	1360	0.046	EEUFC1C152S	16	1500	16	15	7.5	1690	0.043
ECA1CFQ182	16	1800	18	15	7.5	1620	0.038	EEUFC1C182S	16	1800	18	15	7.5	2000	0.038
ECA1CFQ222L	16	2200	12.5	30	5	1950	0.030	EEUFC1C222	16	2200	12.5	25	5.0	1945	0.030
ECA1CFQ222	16	2200	16	20	7.5	1730	0.034	EEUFC1C222S	16	2200	16	20	7.5	2205	0.029
ECA1CFQ272L	16	2700	12.5	35	5	1950	0.024	EEUFC1C272L	16	2700	12.5	30	5.0	2310	0.025
ECA1CFQ272	16	2700	16	25	7.5	2070	0.028	EEUFC1C272	16	2700	16	20	7.5	2205	0.029
ECA1CFQ332L	16	3300	12.5	40	5	2390	0.021	EEUFC1C332	16	3300	12.5	35	5.0	2510	0.022
ECA1CFQ332S	16	3300	18	20	7.5	2000	0.028	EEUFC1C332S	16	3300	18	20	7.5	2490	0.028
ECA1CFQ392	16	3900	16	31.5	7.5	2350	0.025	EEUFC1C392	16	3900	16	25	7.5	2555	0.022
ECA1CFQ392S	16	3900	18	25	7.5	2200	0.025	EEUFC1C392S	16	3900	18	20	7.5	2490	0.028
ECA1CFQ472L	16	4700	16	35.5	7.5	2550	0.022	EEUFC1C472	16	4700	16	31.5	7.5	3010	0.018
ECA1CFQ472	16	4700	18	31.5	7.5	2800	0.023	EEUFC1C472S	16	4700	18	25	7.5	2740	0.020
ECA1CFQ562	16	5600	16	40	7.5	2900	0.018	EEUFC1C562L	16	5600	16	35.5	7.5	3150	0.016
ECA1CFQ682	16	6800	18	35.5	7.5	2900	0.021	EEUFC1C682	16	6800	16	40	7.5	3360	0.015
								EEUFC1C822	16	8200	18	35.5	7.5	3680	0.015
ECA1CFQ822	16	8200	18	40	7.5	3000	0.017	EEUFC1C822	16	8200	18	35.5	7.5	3680	0.015
ECA1EFQ270	25	27	4	11	1.5	120	1.000	EEUFC1E270	25	27	4	11	1.5	120	1.300
ECA1EFQ390	25	39	5	11	2	175	0.650	EEUFC1E390	25	39	5	11	2.0	175	0.800
ECA1EFQ560	25	56	5	15	2	235	0.460	EEUFC1E560	25	56	5	15	2.0	235	0.500
ECA1EFQ820	25	82	6.3	11.2	2.5	290	0.300	EEUFC1E820	25	82	6.3	11.2	2.5	290	0.350
ECA1EFQ121	25	120	6.3	15	2.5	400	0.200	EEUFC1E121	25	120	6.3	15	2.5	400	0.250
ECA1EFQ181	25	180	8	12.5	3.5	445	0.170	EEUFC1E181	25	180	8	11.5	3.5	555	0.117
ECA1EFQ221L	25	220	8	15	3.5	575	0.120	EEUFC1E221	25	220	8	11.5	3.5	555	0.117
ECA1EFQ221	25	220	10	12.5	5	625	0.120	EEUFC1V221	35	220	10	12.5	5.0	755	0.090
ECA1EFQ271	25	270	10	16	5	795	0.090	EEUFC1E271	25	270	10	12.5	5.0	755	0.090
ECA1EFQ331	25	330	8	20	3.5	760	0.090	EEUFC1E331L	25	330	8	15	3.5	730	0.085
ECA1EFQ471L	25	470	10	20	5	1015	0.065	EEUFC1E471	25	470	10	16	5.0	1050	0.068
ECA1EFQ471	25	470	12.5	15	5	1010	0.065	EEUFC1E471	25	470	10	16	5.0	1050	0.068
ECA1EFQ561	25	560	10	25	5	1190	0.055	EEUFC1E561	25	560	10	20	5.0	1220	0.052
ECA1EFQ821L	25	820	10	30	5	1440	0.045	EEUFC1E821	25	820	10	25	5.0	1440	0.045
ECA1EFQ821	25	820	12.5	20	5	1400	0.042	EEUFC1E821S	25	820	12.5	20	5.0	1655	0.038
ECA1EFQ821S	25	820	16	15	5	1360	0.046	EEUFC1V821	35	820	18	15	7.5	2000	0.038
ECA1EFQ102	25	1000	12.5	25	7.5	1690	0.034	EEUFC1E102	25	1000	12.5	20	5.0	1655	0.038
ECA1EFQ122	25	1200	18	15	7.5	1620	0.038	EEUFC1E122S	25	1200	18	15	7.5	2000	0.038
ECA1EFQ152L	25	1500	12.5	30	5	1950	0.030	EEUFC1E152	25	1500	12.5	25	5.0	1945	0.030
ECA1EFQ152	25	1500	16	20	7.5	1730	0.034	EEUFC1E152S	25	1500	16	20	7.5	2205	0.029
ECA1EFQ182L	25	1800	12.5	35	5	2220	0.024	EEUFC1E182L	25	1800	12.5	30	5.0	2310	0.025
ECA1EFQ182	25	1800	16	25	7.5	2070	0.028	EEUFC1E182	25	1800	16	20	7.5	2205	0.029
ECA1EFQ222L	25	2200	12.5	40	5	2390	0.021	EEUFC1E222	25	2200	12.5	35	5.0	2510	0.022
ECA1EFQ222S	25	2200	18	20	7.5	2000	0.028	EEUFC1E222S	25	2200	18	20	7.5	2490	0.028
ECA1EFQ272	25	2700	16	31.5	7.5	2350	0.025	EEUFC1E272	25	2700	16	25	7.5	2555	0.022
ECA1EFQ272S	25	2700	18	25	7.5	2200	0.025	EEUFC1E272	25	2700	16	25	7.5	2555	0.022
ECA1EFQ332L	25	3300	16	35.5	7.5	2550	0.022	EEUFC1E332	25	3300	16	31.5	7.5	3010	0.018
ECA1EFQ332	25	3300	18	31.5	7.5	2800	0.023	EEUFC1E332S	25	3300	18	25	7.5	2740	0.020
ECA1EFQ392L	25	3900	16	40	7.5	2900	0.018	EEUFC1E392L	25	3900	16	35.5	7.5	3150	0.016
ECA1EFQ392	25	3900	18	35.5	7.5	2900	0.021	EEUFC1E392	25	3900	18	31.5	7.5	3635	0.016
ECA1EFQ472	25	4700	18	40	7.5	3000	0.017	EEUFC1E472	25	4700	18	35.5	7.5	3680	0.015

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ECEAxxFQxxx

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1998/9/22

The deviation of case size is not acceptable, please select higher capacitance part,

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1999/11/24 rev.A

HFQ - series								FC - series							
HFQ Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm	FC Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm
			Dmm	Lmm							Dmm	Lmm			
ECA1VFQ180	35	18	4	11	1.5	120	1.000	EEUFC1V180	35	18	4	11	1.5	120	1.300
ECA1VFQ270	35	27	5	11	2	175	0.650	EEUFC1V270	35	27	5	11	2.0	175	0.800
ECA1VFQ390	35	39	5	15	2	235	0.460	EEUFC1V390	35	39	5	15	2.0	235	0.500
ECA1VFQ560	35	56	6.3	11.2	2.5	290	0.300	EEUFC1V560	35	56	6.3	11.2	2.5	290	0.350
ECA1VFQ820	35	82	6.3	15	2.5	400	0.200	EEUFC1V820	35	82	6.3	15	2.5	400	0.250
ECA1VFQ121	35	120	8	12.5	3.5	445	0.170	EEUFC1V121	35	120	8	11.5	3.5	555	0.117
ECA1VFQ151L	35	150	8	15	3.5	575	0.120	EEUFC1V151	35	150	8	11.5	3.5	555	0.117
ECA1VFQ151	35	150	10	12.5	5	625	0.120	EEUFC1V151	35	150	8	11.5	3.5	555	0.117
								EEUFC1V181	35	180	10	12.5	5.0	755	0.090
ECA1VFQ181	35	180	10	16	5	795	0.090	EEUFC1V181	35	180	10	12.5	5.0	755	0.090
ECA1VFQ221	35	220	8	20	3.5	760	0.090	EEUFC1V221L	35	220	8	15	3.5	730	0.085
ECA1VFQ331L	35	330	10	20	5	1015	0.065	EEUFC1V331	35	330	10	16	5.0	1050	0.068
ECA1VFQ331	35	330	12.5	15	5	1010	0.065	EEUFC1H331	50	330	12.5	20	5.0	1480	0.063
ECA1VFQ391	35	390	10	25	5	1190	0.055	EEUFC1V391	35	390	10	20	5.0	1220	0.052
ECA1VFQ561L	35	560	10	30	5	1440	0.045	EEUFC1V561	35	560	10	25	5.0	1440	0.045
ECA1VFQ561	35	560	12.5	20	5	1400	0.042	EEUFC1V561S	35	560	12.5	20	5.0	1655	0.038
ECA1VFQ561S	35	560	16	15	5	1360	0.046	EEUFC1V561S	35	560	12.5	20	5.0	1655	0.038
								EEUFC1V681S	35	680	16	15	7.5	1690	0.043
ECA1VFQ681	35	680	12.5	25	5	1690	0.034	EEUFC1V681	35	680	12.5	20	5.0	1655	0.038
ECA1VFQ821	35	820	18	15	7.5	1620	0.038	EEUFC1V821	35	820	18	15	7.5	2000	0.038
ECA1VFQ102L	35	1000	12.5	30	5	1950	0.030	EEUFC1V102	35	1000	12.5	25	5.0	1945	0.030
ECA1VFQ102	35	1000	16	20	7.5	1730	0.034	EEUFC1V102S	35	1000	16	20	7.5	2205	0.029
ECA1VFQ122L	35	1200	12.5	35	5	2220	0.024	EEUFC1V122L	35	1200	12.5	30	5.0	2310	0.025
ECA1VFQ122L	35	1200	16	25	7.5	2070	0.028	EEUFC1V122	35	1200	16	20	7.5	2205	0.029
ECA1VFQ152L	35	1500	12.5	40	5	2390	0.021	EEUFC1V152L	35	1500	12.5	35	5.0	2510	0.022
ECA1VFQ152	35	1500	18	20	7.5	2000	0.028	EEUFC1V152S	35	1500	18	20	7.5	2490	0.028
ECA1VFQ182	35	1800	16	31.5	7.5	2350	0.025	EEUFC1V182	35	1800	16	25	7.5	2555	0.022
ECA1VFQ182S	35	1800	18	25	7.5	2200	0.025	EEUFC1V182S	35	1800	18	20	7.5	2490	0.028
ECA1VFQ222L	35	2200	16	35.5	7.5	2550	0.022	EEUFC1V222	35	2200	16	31.5	7.5	3010	0.018
ECA1VFQ222	35	2200	18	31.5	7.5	2800	0.023	EEUFC1V222S	35	2200	18	25	7.5	2740	0.020
ECA1VFQ272L	35	2700	16	40	7.5	2900	0.018	EEUFC1V272L	35	2700	16	35.5	7.5	3150	0.016
ECA1VFQ272	35	2700	18	35.5	7.5	2900	0.021	EEUFC1V272	35	2700	18	31.5	7.5	3635	0.016
ECA1VFQ332	35	3300	18	40	7.5	3000	0.017	EEUFC1V332	35	3300	18	35.5	7.5	3680	0.015
ECA1HFQ100	50	10	4	11	1.5	90	2.500	EEUFC1H100	50	10	4	11	1.5	90	2.500
ECA1HFQ180	50	18	5	11	2	155	1.300	EEUFC1H180	50	18	5	11	2.0	155	1.300
ECA1HFQ270	50	27	5	15	2	215	0.900	EEUFC1H270	50	27	5	15	2.0	215	0.900
ECA1EFQ330	50	33	6.3	11.2	2.5	260	0.600	EEUFC1H330	50	33	6.3	11.2	2.5	260	0.600
ECA1HFQ560	50	56	6.3	15	2.5	360	0.400	EEUFC1H560	50	56	6.3	15	2.5	360	0.400
ECA1HFQ680	50	68	8	12.5	3.5	410	0.300	EEUFC1H680	50	68	8	11.5	3.5	485	0.234
ECA1HFQ820	50	82	10	12.5	5	510	0.230	EEUFC1H820	50	82	8	11.5	3.5	485	0.234
								EEUFC1H101	50	100	10	12.5	5.0	615	0.162
ECA1HFQ101	50	100	8	15	3.5	500	0.230	EEUFC1J101L	63	100	8	15	3.5	535	0.230
ECA1HFQ121	50	120	10	16	5	640	0.160	EEUFC1H121	50	120	10	12.5	5.0	615	0.162
ECA1HFQ151	50	150	8	20	3.5	670	0.160	EEUFC1J151	63	150	8	20	3.5	690	0.178
ECA1HFQ221L	50	220	10	20	5	890	0.110	EEUFC1H221	50	220	10	20	5.0	1030	0.090
ECA1HFQ221	50	220	12.5	15	5	920	0.130	EEUFC1H221S	50	220	12.5	15	5.0	1150	0.110
ECA1HFQ271	50	270	10	25	5	1040	0.090	EEUFC1H271	50	270	10	25	5.0	1200	0.082
ECA1HFQ331	50	330	12.5	20	5	1200	0.080	EEUFC1H331	50	330	12.5	20	5.0	1480	0.063
ECA1HFQ391L	50	390	10	30	5	1300	0.075	EEUFC1H391	50	390	12.5	20	5.0	1480	0.063
ECA1HFQ391	50	390	16	15	7.5	1270	0.084	EEUFC1H391S	50	390	16	15	7.5	1610	0.080
ECA1HFQ471	50	470	12.5	25	5	1440	0.070	EEUFC1H471	50	470	12.5	25	5.0	1832	0.050
ECA1HFQ471S	50	470	18	15	7.5	1470	0.070	EEUFC1J471	63	470	16	20	7.5	1765	0.059
								EEUFC1H561S	50	560	18	15	7.5	1900	0.068
ECA1HFQ561	50	560	12.5	30	5	1680	0.060	EEUFC1H561	50	560	12.5	25	5.0	1832	0.050
ECA1HFQ681L	50	680	12.5	35	5	1850	0.050	EEUFC1H681L	50	680	12.5	30	5.0	2215	0.040
ECA1HFQ681	50	680	16	20	7.5	1470	0.053	EEUFC1H681	50	680	16	20	7.5	1835	0.048
ECA1HFQ681S	50	680	18	20	7.5	1810	0.050	EEUFC1H681	50	680	16	20	7.5	1835	0.048
ECA1HFQ821L	50	820	12.5	40	5	2010	0.043	EEUFC1H821L	50	820	12.5	35	5.0	2285	0.034
ECA1HFQ821	50	820	16	25	7.5	1810	0.044	EEUFC1H821	50	820	18	20	7.5	2420	0.042
								EEUFC1H102	50	1000	16	25	7.5	2235	0.034
ECA1HFQ102	50	1000	16	31.5	7.5	2120	0.033	EEUFC1H102	50	1000	16	25	7.5	2235	0.034
ECA1HFQ102S	50	1000	18	25	7.5	2000	0.041	EEUFC1H102	50	1000	16	25	7.5	2235	0.034
ECA1HFQ122L	50	1200	16	35.5	7.5	2260	0.028	EEUFC1H122	50	1200	16	31.5	7.5	2700	0.028
ECA1HFQ122	50	1200	18	31.5	7.5	2220	0.031	EEUFC1H122	50	1200	16	31.5	7.5	2700	0.028
ECA1HFQ152L	50	1500	16	40	7.5	2410	0.026	EEUFC1H152L	50	1500	16	35.5	7.5	2790	0.025
ECA1HFQ152	50	1500	18	35.5	7.5	2460	0.027	EEUFC1H152L	50	1500	16	35.5	7.5	2790	0.025
ECA1HFQ182	50	1800	18	40	7.5	2560	0.025	EEUFC1H182L	50	1800	16	40	7.5	2845	0.023
								EEUFC1H182	50	1800	18	31.5	7.5	3000	0.025

HFQ series replacement program to FC series (last order : July/End/2000)

ECEAxxFQxxx → EEUFCxxxxx

1998/9/22

The deviation of case size is not acceptable, please select higher capacitance part,

shows deviation

1999/11/24 rev.A

HFQ - series								FC - series							
HFQ Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm	FC Part No.	WV V	Cap. uF	Case Size		Pitch mm	Ripple A 105C	Imp. ohm
			Dmm	Lmm							Dmm	Lmm			
ECA1JFQ6R8	63	6.8	4	11	1.5	80	3.500	EEUFC1J6R8	63	7	4	11	1.5	80	3.500
ECA1JFQ120	63	12	5	11	2	145	2.000	EEUFC1J120	63	12	5	11	2	145	2.000
ECA1JFQ180	63	18	5	15	2	200	1.300	EEUFC1J180	63	18	5	15	2	200	1.300
ECA1JFQ220	63	22	6.3	11.2	2.5	240	1.000	EEUFC1J220	63	22	6.3	11.2	2.5	240	1.000
ECA1JFQ390	63	39	6.3	15	2.5	330	0.700	EEUFC1J390	63	39	6.3	15	2.5	330	0.700
ECA1JFQ560	63	56	8	12.5	3.5	370	0.380	EEUFC1J560	63	56	8	11.5	3.5	405	0.342
ECA1JFQ680	63	68	10	12.5	5	470	0.300	EEUFC1J680	63	68	8	11.5	3.5	405	0.342
ECA1JFQ820	63	82	8	15	3.5	450	0.300	EEUFC1J820	63	82	10	12.5	5.0	535	0.256
								EEUFC1J101L	63	100	8	15	3.5	535	0.256
ECA1JFQ101L	63	100	8	20	3.5	600	0.190	EEUFC1J101L	63	100	8	15	3.5	535	0.230
ECA1JFQ101	63	100	10	16	5	580	0.190	EEUFC1J101	63	100	10	12.5	5.0	535	0.256
ECA1JFQ151L	63	150	10	20	5	820	0.140	EEUFC1J151	63	150	8	20	3.5	690	0.178
								EEUFC1J181	63	180	10	20	5.0	885	0.147
ECA1JFQ151	63	150	12.5	15	5	890	0.160	EEUFC1J151	63	150	8	20	3.5	690	0.178
								EEUFC1J181S	63	180	12.5	15	5.0	1020	0.150
ECA1JFQ181	63	180	10	25	5	950	0.120	EEUFC1J181	63	180	10	20	5.0	885	0.147
ECA1JFQ221	63	220	12.5	20	5	1140	0.095	EEUFC1J221S	63	220	12.5	20	5.0	1285	0.085
ECA1JFQ271L	63	270	10	30	5	1110	0.095	EEUFC1J271	63	270	16	15	7.5	1410	0.090
								EEUFC1J331L	63	330	10	30	5.0	1300	0.090
ECAJFQ271	63	270	16	15	7.5	1220	0.100	EEUFC1J271	63	270	16	15	7.5	1410	0.090
ECA1JFQ331	63	330	12.5	25	5	1420	0.090	EEUFC1J331	63	330	12.5	20	5.0	1285	0.085
ECA1JFQ331S	63	330	18	15	7.5	1410	0.085	EEUFC1J331	63	330	12.5	20	5.0	1285	0.085
								EEUFC1J391S	63	390	18	15	7.5	1690	0.086
ECA1JFQ391	63	390	12.5	30	5	1620	0.080	EECFC1J391	63	390	12.5	25	5.0	1720	0.070
ECA1JFQ471L	63	470	12.5	35	5	1780	0.065	EEUFC1J471L	63	470	12.5	30	5.0	2090	0.055
ECA1JFQ471	63	470	16	20	7.5	1450	0.070	EEUFC1J471	63	470	16	20	7.5	1765	0.059
ECA1JFQ561L	63	560	12.5	40	5	1950	0.060	EEUFC1J561	63	560	16	25	7.5	2160	0.050
								EEUFC1J681L	63	680	12.5	35	5.0	2265	0.047
ECA1JFQ561	63	560	16	25	7.5	1750	0.060	EEUFC1J561	63	560	16	25	7.5	2160	0.050
ECA1JFQ561S	63	560	18	20	7.5	1750	0.065	EEUFC1J561	63	560	16	25	7.5	2160	0.050
								EEUFC1J681S	63	680	18	20	7.5	2290	0.055
ECA1JFQ681	63	680	16	31.5	7.5	2050	0.050	EEUFC1J681	63	680	16	25	7.5	2160	0.050
ECA1JFQ681S	63	680	18	25	7.5	1940	0.057	EEUFC1J681S	63	680	18	20	7.5	2290	0.055
ECA1JFQ821	63	820	16	35.5	7.5	2220	0.042	EEUFC1J821	63	820	16	31.5	7.5	2670	0.043
ECA1JFQ102L	63	1000	16	40	7.5	2370	0.034	EEUFC1J102U	63	1000	16	31.5	7.5	2670	0.043
ECA1JFQ102	63	1000	18	31.5	7.5	2110	0.048	EEUFC1J102U	63	1000	16	31.5	7.5	2670	0.043
ECA1JFQ122	63	1200	18	35.5	7.5	2300	0.041	EEUFC1J122	63	1200	18	31.5	7.5	2950	0.032
ECA1JFQ152	63	1500	18	40	7.5	2510	0.033	EEUFC1J152	63	1500	18	35.5	7.5	3095	0.030