

**DISCONTINUED PRODUCT
NOTIFICATION**

SUBJECT: ECE-AxxFS (HFS) Series Radial Leaded Aluminum Electrolytic Capacitor will be Discontinued Effective per below.

BULLETIN #: ECG.PG.44.99.1215

Date: December 15, 1999

LAST TIME BUY: March 31, 2000

LAST TIME SHIPMENT: May 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 HFS series. Generally the FC series is a drop in replacement for the HFS 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 refer to the attached cross-reference list for more detailed information.

Please contact the Resident Engineers if you have any questions or require additional information.

Please notify your customers of the change.

HFS series replacement program to FC series (last order : Mar/End/2000)

ECEAxxFSxxx → **EEUFCxxxxx**

1998/9/22

If there are 2 items on FC-series replacement, First offer = first line item (smaller size) and if customer could not use smaller lead pitch,

please offer 2nd line item (higher voltage with same lead space) shows deviation

1999/11/24 rev.A

HFS - series									FC - series								
HFS Part No.	WV V	Cap. uF	e Size		Pitch mm	Ripple mA 105C	Imp. ohm	Life Hours	FC Part No.	WV V	Cap. uF	e Size		Pitch mm	Ripple mA 105C	Imp. ohm	Life Hours
			Dmm	Lmm								Dmm	Lmm				
ECEA0JFS471	6.3	470	10	12.5	5.0	500	0.5	2000	EEUFC0J471	6.3	470	8	11.5	3.5	555	0.117	2000
									EEUFC1C471	16	470	10	12.5	5.0	755	0.090	3000
ECEA0JFS102	6.3	1000	10	20	5.0	630	0.25	2000	EEUFC0J102	6.3	1000	10	12.5	5.0	755	0.090	3000
ECEA0JFS222	6.3	2200	12.5	25	5.0	945	0.16	2000	EEUFC0J222	6.3	2200	10	25	5.0	1440	0.045	3000
ECEA0JFS332	6.3	3300	16	25	7.5	1435	0.1	2000	EEUFC0J332S	6.3	3300	18	15	7.5	2000	0.038	5000
ECEA0JFS472	6.3	4700	16	31.5	7.5	1890	0.075	2000	EEUFC0J472S	6.3	4700	16	20	7.5	2205	0.029	5000
ECEA1AFS470	10	47	5	11	2.0	107	2.5	1000	EEUFC1C470	16	47	5	11	2.0	175	0.80	1000
ECEA1AFS101	10	100	6.3	11.2	2.5	178	1.8	1000	EEUFC1A101S	10	100	5	11	2.0	175	0.80	1000
									EEUFC1C101	16	100	6.3	11.2	2.5	290	0.35	1000
ECEA1AFS221	10	220	8	11.5	3.5	252	1	1000	EEUFC1A221S	10	220	6.3	11.2	2.5	290	0.35	1000
									EEUFC1C221	16	220	8	11.5	3.5	555	0.117	2000
ECEA1AFS331	10	330	10	12.5	5.0	350	0.5	2000	EEUFC1A331	10	330	8	11.5	3.5	555	0.117	2000
									EEUFC1E331	25	330	10	12.5	5.0	755	0.090	3000
ECEA1AFS471	10	470	10	16	5.0	476	0.34	2000	EEUFC1A471	10	470	8	11.5	3.5	555	0.117	2000
									EEUFC1C471	16	470	10	12.5	5.0	755	0.090	3000
ECEA1AFS102	10	1000	12.5	20	5.0	784	0.2	2000	EEUFC1A102	10	1000	10	16	5.0	1050	0.068	3000
ECEA1AFS222	10	2200	16	25	7.5	1435	0.1	2000	EEUFC1A222	10	2200	12.5	20	5.0	1655	0.038	5000
									EEUFC1C222S	16	2200	16	20	7.5	2205	0.029	5000
ECEA1AFS332	10	3300	16	31.5	7.5	1890	0.075	2000	EEUFC1A332S	10	3300	16	20	7.5	2205	0.029	5000
ECEA1AFS472	10	4700	16	35.5	7.5	2100	0.068	2000	EEUFC1A472	10	4700	16	25	7.5	2555	0.022	5000
ECEA1CFS330	16	33	5	11	2.0	106	2.5	1000	EEUFC1V330	35	33	5	11	2.0	175	0.80	1000
ECEA1CFS470	16	47	6.3	11.2	2.5	154	1.8	1000	EEUFC1C470	16	47	5	11	2.0	175	0.80	1000
									EEUFC1V470	35	47	6.3	11.2	2.5	290	0.35	1000
ECEA1CFS101	16	100	8	11.5	3.5	252	1	1000	EEUFC1C101	16	100	6.3	11.2	2.5	290	0.35	1000
									EEUFC1V101	35	100	8	11.5	3.5	555	0.117	2000
ECEA1CFS221	16	220	10	12.5	5.0	350	0.5	2000	EEUFC1C221	16	220	8	11.5	3.5	555	0.117	2000
									EEUFC1V221	35	220	10	12.5	5.0	755	0.090	3000
ECEA1CFS331	16	330	10	16	5.0	476	0.34	2000	EEUFC1C331	16	330	8	11.5	3.5	555	0.117	2000
									EEUFC1E331	25	330	10	12.5	5.0	755	0.090	3000
ECEA1CFS471	16	470	10	20	5.0	630	0.25	2000	EEUFC1C471	16	470	10	12.5	5.0	755	0.090	3000
ECEA1CFS102	16	1000	12.5	25	5.0	784	0.16	2000	EEUFC1C102	16	1000	10	25	5.0	1440	0.045	3000
ECEA1CFS222	16	2200	16	25	7.5	1435	0.1	2000	EEUFC1C222S	16	2200	16	20	7.5	2205	0.029	5000
ECEA1CFS332	16	3300	16	35.5	7.5	2100	0.068	2000	EEUFC1C332	16	3300	12.5	35	5.0	2510	0.022	5000
									EEUFC1E332	25	3300	16	31.5	7.5	3010	0.018	5000
ECEA1EFS220	25	22	5	11	2.0	105	2.5	1000	EEAFC1H220	50	22	5	11	2.0	155	1.30	1000
ECEA1EFS330	25	33	6.3	11.2	2.5	126	1.8	1000	EEUFC1V330	35	33	5	11	2.0	175	0.80	1000
									EEUFC1H330	50	33	6.3	11.2	2.5	260	0.60	1000
ECEA1EFS470	25	47	6.3	11.2	2.5	154	1.8	1000	EEUFC1E470	25	47	5	11	2.0	175	0.80	1000
									EEUFC1V470	35	47	6.3	11.2	2.5	290	0.35	1000
ECEA1EFS101	25	100	8	11.5	3.5	252	1	1000	EEUFC1E101S	25	100	6.3	11.2	2.5	290	0.35	1000
									EEUFC1V101	35	100	8	11.5	3.5	555	0.117	2000
ECEA1EFS221	25	220	10	16	5.0	476	0.34	2000	EEUFC1E221	25	220	8	11.5	3.5	555	0.117	2000
									EEUFC1V221	35	220	10	12.5	5.0	755	0.090	3000
ECEA1EFS331	25	330	10	20	5.0	630	0.25	2000	EEUFC1E331	25	330	10	12.5	5.0	755	0.090	3000
ECEA1EFS471	25	470	12.5	20	5.0	784	0.2	2000	EEUFC1E471	25	470	10	16	5.0	1050	0.068	3000
ECEA1EFS102	25	1000	16	25	7.5	1435	0.1	2000	EEUFC1E102	25	1000	12.5	20	5.0	1655	0.038	5000
									EEUFC1E102S	25	1000	16	15	7.5	1690	0.043	5000
ECEA1EFS222	25	2200	16	35.5	7.5	2100	0.068	2000	EEUFC1E222	25	2200	12.5	35	5.0	2510	0.022	5000
									EEUFC1V222	35	2200	16	31.5	7.5	3010	0.018	5000

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1999/11/24 rev.A

HFS - series									FC - series								
HFS Part No.	WV V	Cap. uF	e Size		Pitch mm	Ripple mA 105C	Imp. ohm	Life Hours	FC Part No.	WV V	Cap. uF	e Size		Pitch mm	Ripple mA 105C	Imp. ohm	Life Hours
			Dmm	Lmm								Dmm	Lmm				
ECEA1VFS100	35	10	5	11	2.0	70	2.5	1000	EEUFC1H100L	50	10	5	11	2.0	125	1.30	1000
ECEA1VFS220	35	22	6.3	11.2	2.5	112	1.8	1000	EEAFC1V220	35	22	5	11	2.0	175	0.80	1000
									EEUFC1J220	63	22	6.3	11.2	2.5	240	1.00	1000
ECEA1VFS330	35	33	6.3	11.2	2.5	135	1.8	1000	EEUFC1V330	35	33	5	11	2.0	175	0.80	1000
									EEUFC1H330	50	33	6.3	11.2	2.5	260	0.60	1000
ECEA1VFS470	35	47	8	11.5	3.5	252	1	1000	EEUFC1V470	35	47	6.3	11.2	2.5	290	0.35	1000
									EEUFC1J470	63	47	8	11.5	3.5	405	0.342	2000
ECEA1VFS101	35	100	10	12.5	5.0	350	0.5	2000	EEUFC1V101	35	100	8	11.5	3.5	555	0.117	2000
									EEUFC1H101	50	100	10	12.5	5.0	615	0.162	3000
ECEA1VFS221	35	220	10	20	5.0	630	0.25	2000	EEUFC1V221	35	220	10	12.5	5.0	755	0.090	3000
ECEA1VFS331	35	330	12.5	20	5.0	784	0.2	2000	EEUFC1V331	35	330	10	16	5.0	1050	0.068	3000
ECEA1VFS471	35	470	12.5	25	5.0	945	0.16	2000	EEUFC1V471	35	470	10	20	5.0	1220	0.052	3000
ECEA1VFS102	35	1000	16	25	7.5	1435	0.1	2000	EEUFC1V102S	35	1000	16	20	5.0	2205	0.029	5000
ECEA1HFSR47	50	0.47	5	11	2.0	6	7	1000	N/B								
ECEA1HFS010	50	1	5	11	2.0	11	5	1000	EEUFC1H1R0	50	1	5	11	2.0	20	2.40	1000
ECEA1HFS2R2	50	2.2	5	11	2.0	23	3.5	1000	EEUFC1H2R2	50	2.2	5	11	2.0	45	1.30	1000
ECEA1HFS3R3	50	3.3	5	11	2.0	42	3	1000	EEUFC1H3R3	50	3.3	5	11	2.0	65	1.30	1000
ECEA1HFS4R7	50	4.7	5	11	2.0	50	3	1000	EEUFC1H4R7	50	4.7	5	11	2.0	95	1.30	1000
ECEA1HFS100	50	10	5	11	2.0	77	2.5	1000	EEUFC1H100L	50	10	5	11	2.0	125	1.30	1000
ECEA1HFS220	50	22	6.3	11.2	2.5	119	1.8	1000	EEUFC1H220	50	22	5	11	2.0	155	1.30	1000
									EEUFC1J220	63	22	6.3	11.2	2.5	240	1.00	1000
ECEA1HFS330	50	33	8	11.5	3.5	252	1	1000	EEUFC1H330	50	33	6.3	11.2	2.5	260	0.60	1000
ECEA1HFS470	50	47	8	11.5	3.5	252	1	1000	EEUFC1H470	50	47	6.3	11.2	2.5	260	0.60	1000
									EEUFC1J470	63	47	8	11.5	3.5	405	0.342	2000
ECEA1HFS101	50	100	10	16	5.0	476	0.34	2000	EEUFC1H101	50	100	10	12.5	5.0	615	0.162	3000
ECEA1HFS221	50	220	12.5	20	5.0	784	0.2	2000	EEUFC1H221	50	220	10	20	5.0	1030	0.090	3000
ECEA1HFS331	50	330	12.5	20	5.0	784	0.2	2000	EEUFC1H331	50	330	12.5	20	5.0	1480	0.063	5000
ECEA1HFS471	50	470	16	25	7.5	1435	0.1	2000	EEUFC1H471	50	470	12.5	25	5.0	1832	0.050	5000
									EEUFC1J471	63	470	16	20	7.5	1765	0.059	5000
ECEA1HFS102	50	1000	16	31.5	7.5	1890	0.075	2000	EEUFC1H102	50	1000	16	25	7.5	2235	0.034	5000
ECEA1JFSR47	63	0.47	5	11	2.0	6	7	1000	N/B								
ECEA1JFS010	63	1	5	11	2.0	11	5	1000	EEUFC1H1R0	50	1	5	11	2.0	20	2.40	1000
									EEUFC2A1R0	100	1	5	11	2.0	15	7.50	1000
ECEA1JFS2R2	63	2.2	5	11	2.0	23	3.5	1000	EEUFC1H2R2	50	2.2	5	11	2.0	45	1.30	1000
									EEUFC2A1R0	100	2	5	11	2.0	35	5.40	1000
ECEA1JFS3R3	63	3.3	5	11	2.0	42	3	1000	EEUFC1H3R3	50	3.3	5	11	2.0	65	1.30	1000
									EEUFC2A3R3	100	3	5	11	2.0	50	4.40	1000
ECEA1JFS4R7	63	4.7	5	11	2.0	50	3	1000	EEUFC1H4R7	50	4.7	5	11	2.0	95	1.30	1000
									EEUFC2A4R7	100	4.7	5	11	2.0	65	4.40	1000
ECEA1JFS100	63	10	6.3	11.2	2.5	84	1.8	1000	EEUFC1H100L	50	10	5	11	2.0	125	1.30	1000
									EEUFC2A100	100	10	6.3	11	2.5	114	1.80	1000
ECEA1JFS220	63	22	8	11.5	3.5	252	1	1000	EEUFC1J220	63	22	6.3	11.2	2.5	240	1.00	1000
ECEA1JFS330	63	33	8	11.5	3.5	252	1	1000	EEUFC1J330	63	33	6.3	11.2	2.5	240	1.00	1000
ECEA1JFS470	63	47	10	12.5	5.0	350	1	2000	EEUFC1J470	63	47	8	11.5	3.5	405	0.342	2000
ECEA1JFS101	63	100	10	20	5.0	630	0.25	2000	EEUFC1J101	63	100	10	12.5	5.0	535	0.256	3000
ECEA1JFS221	63	220	12.5	20	5.0	784	0.2	2000	EEUFC1J221S	63	220	12.5	20	5.0	1285	0.085	5000
ECEA1JFS331	63	330	12.5	25	5.0	945	0.16	2000	EEUFC1J331	63	330	12.5	20	5.0	1285	0.085	5000
ECEA1JFS471	63	470	16	25	7.5	1435	0.1	2000	EEUFC1J471	63	470	16	20	7.5	1765	0.059	5000
ECEA1JFS102	63	1000	16	35.5	7.5	2100	0.068	2000	EEUFC1J102	63	1000	16	35.5	7.5	2770	0.036	5000