

SUBJECT: V-S series Surface Mount Type Aluminum Electrolytic Capacitors
ECE-V parts

BULLETIN #: [NRFND.PG44.06.05.09-6](#)

Date: June 5, 2009

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Details: V-S series Non-RoHS Surface Mount Type Aluminum Electrolytic Capacitors are **NOT RECOMMENDED FOR NEW DESIGN**, in compliance with Restriction of Hazardous Substances (RoHS) directive.

Please refer to the attached list of specific part numbers affected and their recommended replacements.

V-S series

W.V. (V)	Cap (uF)	Case size	Part No.		Part No.		Part No.	
			RoHS: not compliant	Reflow	RoHS: compliant	Reflow	RoHS: compliant <i>high temp reflow</i> <i>(suffix - A)</i>	Reflow
4	22	A	ECE-V0GS220SR	12	EEE-0GS220SR	1		
4	33	B	ECE-V0GA330SR	12	EEE-0GA330SR	1		
4	47	B	ECE-V0GA470SR	12	EEE-0GA470SR	1		
4	100	C	ECE-V0GA101SR	12	EEE-0GA101SR	1		
4	220	D	ECE-V0GA221SP	12	EEE-0GA221SP	1		
4	330	D	ECE-V0GA331WP	12	EEE-0GA331WP	1		
4	470	D8	ECE-V0GA471XP	12	EEE-0GA471XP	1		
6.3	22	A	ECE-V0JS220WR	12	EEE-0JS220WR	1		
6.3	22	B	ECE-V0JA220SR	12	EEE-0JA220SR	1	EEE-0JA220AR	5
6.3	33	B	ECE-V0JA330WR	12	EEE-0JA330WR	1	EEE-0JA330WAR	5
6.3	47	B	ECE-V0JA470WR	12	EEE-0JA470WR	1		
6.3	47	C	ECE-V0JA470SR	12	EEE-0JA470SR	1	EEE-0JA470AR	5
6.3	100	C	ECE-V0JA101WR	12	EEE-0JA101WR	1	EEE-0JA101WAR	5
6.3	100	D	ECE-V0JA101SP	12	EEE-0JA101SP	1	EEE-0JA101AP	5
6.3	220	D	ECE-V0JA221WP	12	EEE-0JA221WP	1		
6.3	330	D8	ECE-V0JA331XP	12	EEE-0JA331XP	1	EEE-0JA331XAP	5
6.3	330	E	ECE-V0JA331P	13	EEE-0JA331P	2	EEE-0JA331AP	7
6.3	470	F	ECE-V0JA471P	13	EEE-0JA471P	2	EEE-0JA471UAP	7
6.3	1000	F	ECE-V0JA102UP	13	EEE-0JA102UP	2		
6.3	1000	G	ECE-V0JA102P	13	EEE-0JA102P	2	EEE-0JA102AP	7
6.3	1500	G	ECE-V0JA152P	13	EEE-0JA152P	2	EEE-0JA152UAP	7
10	22	B	ECE-V1AA220WR	12	EEE-1AA220WR	1	EEE-1AA220WAR	5
10	33	B	ECE-V1AA330WR	12	EEE-1AA330WR	1	EEE-1AA330WAR	5
10	33	C	ECE-V1AA330SR	12	EEE-1AA330SR	1	EEE-1AA330AR	5
10	47	C	ECE-V1AA470WR	12	EEE-1AA470WR	1	EEE-1AA470WAR	5
10	100	C	ECE-V1AA101WR	12	EEE-1AA101WR	1	EEE-1AA101WAR	5
10	100	D	ECE-V1AA101SP	12	EEE-1AA101SP	1	EEE-1AA101AP	5
10	220	D8	ECE-V1AA221XP	12	EEE-1AA221XP	1	EEE-1AA221XAP	5
10	220	E	ECE-V1AA221P	13	EEE-1AA221P	2	EEE-1AA221AP	7
10	330	F	ECE-V1AA331P	13	EEE-1AA331P	2	EEE-1AA331AP	7
10	470	F	ECE-V1AA471UP	13	EEE-1AA471UP	2	EEE-1AA471UAP	7
10	470	G	ECE-V1AA471P	13	EEE-1AA471P	2	EEE-1AA471AP	7
10	1000	G	ECE-V1AA102P	13	EEE-1AA102P	2	EEE-1AA102UAP	7
16	10	A	ECE-V1CS100SR	12	EEE-1CS100SR	1		
16	10	B	ECE-V1CA100SR	12	EEE-1CA100SR	1	EEE-1CA100AR	5
16	22	B	ECE-V1CA220WR	12	EEE-1CA220WR	1	EEE-1CA220WAR	5
16	22	C	ECE-V1CA220SR	12	EEE-1CA220SR	1	EEE-1CA220AR	5
16	33	C	ECE-V1CA330WR	12	EEE-1CA330WR	1	EEE-1CA330WAR	5
16	47	C	ECE-V1CA470WR	12	EEE-1CA470WR	1	EEE-1CA470WAR	5
16	47	D	ECE-V1CA470SP	12	EEE-1CA470SP	1	EEE-1CA470AP	5
16	100	D	ECE-V1CA101WP	12	EEE-1CA101WP	1	EEE-1CA101WAP	5

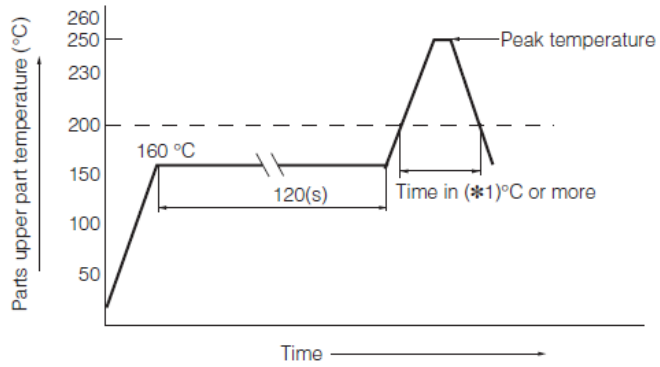
16	100	E	ECE-V1CA101P	13	EEE-1CA101P	2	EEE-1CA101AP	7
16	220	F	ECE-V1CA221P	13	EEE-1CA221P	2	EEE-1CA221UAP	7
16	220	D8	ECE-V1CA221XP	12	EEE-1CA221XP	1	EEE-1CA221XAP	5
16	330	F	ECE-V1CA331UP	13	EEE-1CA331UP	2	EEE-1CA331UAP	7
16	330	G	ECE-V1CA331P	13	EEE-1CA331P	2	EEE-1CA331AP	7
16	470	F	ECE-V1CA471UP	13	EEE-1CA471UP	2	EEE-1CA471UAP	7
16	470	G	ECE-V1CA471P	13	EEE-1CA471P	2	EEE-1CA471AP	7
25	4.7	A	ECE-V1ES4R7SR	12	EEE-1ES4R7SR	1		
25	4.7	B	ECE-V1EA4R7SR	12	EEE-1EA4R7SR	1	EEE-1EA4R7AR	5
25	10	B	ECE-V1EA100WR	12	EEE-1EA100WR	1	EEE-1EA100WAR	5
25	10	C	ECE-V1EA100SR	12	EEE-1EA100SR	1	EEE-1EA100AR	5
25	22	C	ECE-V1EA220WR	12	EEE-1EA220WR	1	EEE-1EA220WAR	5
25	22	D	ECE-V1EA220SP	12	EEE-1EA220SP	1	EEE-1EA220AP	5
25	33	C	ECE-V1EA330WR	12	EEE-1EA330WR	1	EEE-1EA330WAR	5
25	33	D	ECE-V1EA330SP	12	EEE-1EA330SP	1	EEE-1EA330AP	5
25	47	D	ECE-V1EA470WP	12	EEE-1EA470WP	1	EEE-1EA470WAP	5
25	100	D8	ECE-V1EA101XP	12	EEE-1EA101XP	1	EEE-1EA101XAP	5
25	100	E	ECE-V1EA101UP	13	EEE-1EA101UP	2	EEE-1EA101UAP	7
25	100	F	ECE-V1EA101P	13	EEE-1EA101P	2	EEE-1EA101AP	7
25	220	F	ECE-V1EA221UP	13	EEE-1EA221UP	2	EEE-1EA221UAP	7
25	220	G	ECE-V1EA221P	13	EEE-1EA221P	2	EEE-1EA221AP	7
25	330	F	ECE-V1EA331UP	13	EEE-1EA331UP	2	EEE-1EA331UAP	7
25	330	G	ECE-V1EA331P	13	EEE-1EA331P	2	EEE-1EA331AP	7
25	470	G	ECE-V1EA471P	13	EEE-1EA471P	2	EEE-1EA471UAP	7
35	2.2	A	ECE-V1VS2R2SR	12	EEE-1VS2R2SR	1		
35	3.3	A	ECE-V1VS3R3SR	12	EEE-1VS3R3SR	1		
35	4.7	B	ECE-V1VA4R7SR	12	EEE-1VA4R7SR	1	EEE-1VA4R7AR	5
35	10	B	ECE-V1VA100WR	12	EEE-1VA100WR	1	EEE-1VA100WAR	5
35	10	C	ECE-V1VA100SR	12	EEE-1VA100SR	1	EEE-1VA100AR	5
35	22	C	ECE-V1VA220WR	12	EEE-1VA220WR	1	EEE-1VA220WAR	5
35	22	D	ECE-V1VA220SP	12	EEE-1VA220SP	1	EEE-1VA220AP	5
35	33	D	ECE-V1VA330WP	12	EEE-1VA330WP	1	EEE-1VA330WAP	5
35	33	E	ECE-V1VA330P	13	EEE-1VA330P	2	EEE-1VA330AP	7
35	47	D	ECE-V1VA470WP	12	EEE-1VA470WP	1	EEE-1VA470WAP	5
35	47	E	ECE-V1VA470P	13	EEE-1VA470P	2	EEE-1VA470AP	7
35	100	D8	ECE-V1VA101XP	12	EEE-1VA101XP	1	EEE-1VA101XAP	5
35	100	F	ECE-V1VA101UP	13	EEE-1VA101UP	2	EEE-1VA101UAP	7
35	100	G	ECE-V1VA101P	13	EEE-1VA101P	2	EEE-1VA101AP	7
35	220	F	ECE-V1VA221UP	13	EEE-1VA221UP	2	EEE-1VA221UAP	7
35	220	G	ECE-V1VA221P	13	EEE-1VA221P	2	EEE-1VA221AP	7
35	330	G	ECE-V1VA331P	13	EEE-1VA331P	2	EEE-1VA331UAP	7
50	0.1	A	ECE-V1HS0R1SR	12	EEE-1HS0R1SR	1		
50	0.1	B	ECE-V1HA0R1SR	12	EEE-1HA0R1SR	1	EEE-1HAR10AR	5
50	0.22	A	ECE-V1HSR22SR	12	EEE-1HSR22SR	1		
50	0.22	B	ECE-V1HAR22SR	12	EEE-1HAR22SR	1	EEE-1HAR22AR	5
50	0.33	A	ECE-V1HSR33SR	12	EEE-1HSR33SR	1		

50	0.33	B	ECE-V1HAR33SR	12	EEE-1HAR33SR	1	EEE-1HAR33AR	5
50	0.47	A	ECE-V1HSR47SR	12	EEE-1HSR47SR	1		
50	0.47	B	ECE-V1HAR47SR	12	EEE-1HAR47SR	1	EEE-1HAR47AR	5
50	1	A	ECE-V1HS010SR	12	EEE-1HS010SR	1		
50	1	B	ECE-V1HA010SR	12	EEE-1HA010SR	1	EEE-1HA1R0AR	5
50	2.2	A	ECE-V1HS2R2SR	12	EEE-1HS2R2SR	1		
50	2.2	B	ECE-V1HA2R2SR	12	EEE-1HA2R2SR	1	EEE-1HA2R2AR	5
50	3.3	B	ECE-V1HA3R3SR	12	EEE-1HA3R3SR	1	EEE-1HA3R3AR	5
50	4.7	B	ECE-V1HA4R7WR	12	EEE-1HA4R7WR	1	EEE-1HA4R7WAR	5
50	4.7	C	ECE-V1HA4R7SR	12	EEE-1HA4R7SR	1	EEE-1HA4R7AR	5
50	10	C	ECE-V1HA100WR	12	EEE-1HA100WR	1	EEE-1HA100WAR	5
50	10	D	ECE-V1HA100SP	12	EEE-1HA100SP	1	EEE-1HA100AP	5
50	22	D	ECE-V1HA220WP	12	EEE-1HA220WP	1	EEE-1HA220WAP	5
50	22	E	ECE-V1HA220P	13	EEE-1HA220P	2	EEE-1HA220AP	7
50	33	D8	ECE-V1HA330XP	12	EEE-1HA330XP	1	EEE-1HA330XAP	5
50	33	E	ECE-V1HA330UP	13	EEE-1HA330UP	2	EEE-1HA330UAP	7
50	33	F	ECE-V1HA330P	13	EEE-1HA330P	2	EEE-1HA330AP	7
50	47	D8	ECE-V1HA470XP	12	EEE-1HA470XP	1	EEE-1HA470XAP	5
50	47	F	ECE-V1HA470UP	13	EEE-1HA470UP	2	EEE-1HA470UAP	7
50	47	G	ECE-V1HA470P	13	EEE-1HA470P	2	EEE-1HA470AP	7
50	100	F	ECE-V1HA101UP	13	EEE-1HA101UP	2	EEE-1HA101UAP	7
50	100	G	ECE-V1HA101P	13	EEE-1HA101P	2	EEE-1HA101AP	7
50	220	G	ECE-V1HA221P	13	EEE-1HA221P	2	EEE-1HA221UAP	7
63	22	E	ECE-V1JA220UP	13	EEE-1JA220UP	2		
63	22	F	ECE-V1JA220P	13	EEE-1JA220P	2		
63	33	F	ECE-V1JA330P	13	EEE-1JA330P	2		
63	47	F	ECE-V1JA470UP	13	EEE-1JA470UP	2		
63	47	G	ECE-V1JA470P	13	EEE-1JA470P	2		
63	100	G	ECE-V1JA101P	13	EEE-1JA101P	2		
100	3.3	E	ECE-V2AA3R3P	13	EEE-2AA3R3P	2		
100	4.7	E	ECE-V2AA4R7UP	13	EEE-2AA4R7UP	2		
100	4.7	F	ECE-V2AA4R7P	13	EEE-2AA4R7P	2		
100	10	E	ECE-V2AA100UP	13	EEE-2AA100UP	2		
100	10	F	ECE-V2AA100P	13	EEE-2AA100P	2		
100	22	F	ECE-V2AA220UP	13	EEE-2AA220UP	2		
100	22	G	ECE-V2AA220P	13	EEE-2AA220P	2		
100	33	G	ECE-V2AA330P	13	EEE-2AA330P	2		

V-S (Bi-polar) series (ECE-V -> EEE)

W.V. (V)	Cap (uF)	Case size	Part No.	Reflow	Part No.	Reflow
			RoHS: not compliant		RoHS: compliant	
6.3	22	C	ECE-V0JA220NR	12	EEE-0JA220NR	1
6.3	47	D	ECE-V0JA470NP	12	EEE-0JA470NP	1
10	10	B	ECE-V1AA100NR	12	EEE-1AA100NR	1
10	33	D	ECE-V1AA330NP	12	EEE-1AA330NP	1
16	4.7	B	ECE-V1CA4R7NR	12	EEE-1CA4R7NR	1
16	10	C	ECE-V1CA100NR	12	EEE-1CA100NR	1
16	22	D	ECE-V1CA220NP	12	EEE-1CA220NP	1
25	3.3	B	ECE-V1EA3R3NR	12	EEE-1EA3R3NR	1
25	4.7	C	ECE-V1EA4R7NR	12	EEE-1EA4R7NR	1
25	10	D	ECE-V1EA100NP	12	EEE-1EA100NP	1
35	2.2	B	ECE-V1VA2R2NR	12	EEE-1VA2R2NR	1
35	4.7	C	ECE-V1VA4R7NR	12	EEE-1VA4R7NR	1
35	10	D	ECE-V1VA100NP	12	EEE-1VA100NP	1
50	0.22	B	ECE-V1HAR22NR	12	EEE-1HAR22NR	1
50	0.33	B	ECE-V1HAR33NR	12	EEE-1HAR33NR	1
50	0.47	B	ECE-V1HAR47NR	12	EEE-1HAR47NR	1
50	1	B	ECE-V1HA010NR	12	EEE-1HA010NR	1
50	2.2	C	ECE-V1HA2R2NR	12	EEE-1HA2R2NR	1
50	3.3	C	EEV-NZ1H3R3R	12	EEE-NZ1H3R3R	1
50	4.7	D	ECE-V1HA4R7NP	12	EEE-1HA4R7NP	1

- Reflow guaranteed condition
- RoHS compliant



Reflow condition

Reflow	Pre-fix	Suffix	Case Diameter	RoHS	Terminal Finish	Peak temp Deg C	Time of actual peak or near temp.		Time in (*1) degC or more	Time above 200degC	Reflow Freq
1	EEE-	R	3mm to 5mm	Yes	Sn-Bi	250degC	250degC	5 seconds	200degC	60 seconds	Once
1	EEE-	P	6.3mm	Yes	Sn-Bi	250degC	250degC	5 seconds	200degC	60 seconds	Once
2	EEE-	P	8mm to 10mm	Yes	Sn-Bi	235degC	235degC	5 seconds	200degC	60 seconds	Once
5	EEE-	AR	4mm to 5mm	Yes	Sn-Bi	260 degC	250degC	5 seconds	200degC	70 seconds	Twice
5	EEE-	AP	6.3mm	Yes	Sn-Bi	260 degC	250degC	5 seconds	200degC	70 seconds	Twice
7	EEE-	AP	8mm to 10mm	Yes	Sn-Bi	260 degC	250degC	5 seconds	200degC	70 seconds	Once
12	ECE-V	R	3mm to 5mm	No	Sn-Pb	240degC			200degC	20 seconds	Once
12	ECE-V	P	6.3mm	No	Sn-Pb	240degC			200degC	20 seconds	Once
12	EEV-	R	4mm to 5mm	No	Sn-Pb	240degC			200degC	20 seconds	Once
12	EEV-	P	6.3mm	No	Sn-Pb	240degC			200degC	20 seconds	Once
13	ECE-V	P	8mm to 10mm	No	Sn-Pb	230degC			200degC	20 seconds	Once
13	EEV-	P	8mm to 10mm	No	Sn-Pb	230degC			200degC	20 seconds	Once

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