

SUBJECT: V-HA series Surface Mount Type Aluminum Electrolytic Capacitors
EEV parts

BULLETIN #: **NRFND.PG44.06.05.09-1**

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Details: V-HA 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-HA series (EEV-HA -> EEE-HA)

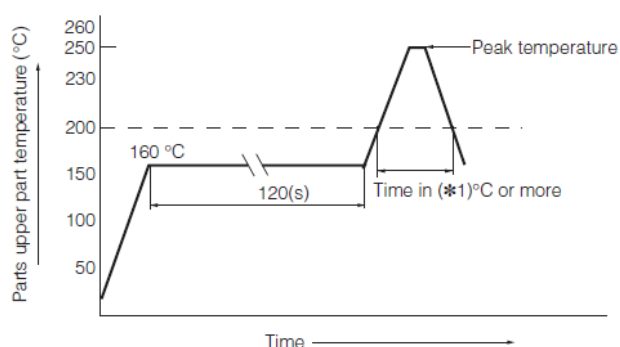
W.V. (V)	Cap (uF)	Case size	Part No.		Part No.		Part No.	
			RoHS: not compliant	Reflow	RoHS: compliant	Reflow	RoHS: compliant <i>high temp reflow (suffix - A)</i>	Reflow
6.3	22	B	EEV-HA0J220R	12	EEE-HA0J220R	1	EEE-HA0J220AR	5
6.3	33	B	EEV-HA0J330WR	12	EEE-HA0J330WR	1	EEE-HAJ330WAR	5
6.3	47	B	EEV-HA0J470WR	12	EEE-HA0J470WR	1		
6.3	47	C	EEV-HA0J470R	12	EEE-HA0J470R	1	EEE-HA0J470AR	5
6.3	100	C	EEV-HA0J101WR	12	EEE-HA0J101WR	1	EEE-HAJ101WAR	5
6.3	100	D	EEV-HA0J101P	12	EEE-HA0J101P	1	EEE-HA0J101AP	5
6.3	220	D	EEV-HA0J221WP	12	EEE-HA0J221WP	1		
6.3	330	D8	EEV-HA0J331XP	12	EEE-HA0J331XP	1	EEE-HAJ331XAP	5
6.3	330	E					EEE-HAJ331UAP	7
6.3	330	F	EEV-HA0J331P	13	EEE-HA0J331P	2	EEE-HA0J331AP	7
6.3	470	F	EEV-HA0J471UP	13	EEE-HA0J471UP	2	EEE-HAJ471UAP	7
6.3	1000	F	EEV-HA0J102UP	13	EEE-HA0J102UP	2		
6.3	1000	G	EEV-HA0J102P	13	EEE-HA0J102P	2	EEE-HA0J102AP	7
6.3	1500	G	EEV-HA0J152P	13	EEE-HA0J152P	2	EEE-HAJ152UAP	7
10	22	B	EEV-HA1A220WR	12	EEE-HA1A220WR	1	EEE-HAA220WAR	5
10	33	B	EEV-HA1A330WR	12	EEE-HA1A330WR	1	EEE-HAA330WAR	5
10	33	C	EEV-HA1A330R	12	EEE-HA1A330R	1	EEE-HA1A330AR	5
10	47	C	EEV-HA1A470WR	12	EEE-HA1A470WR	1	EEE-HAA470WAR	5
10	100	D	EEV-HA1A101WP	12	EEE-HA1A101WP	1	EEE-HAA101WAP	5
10	100	E	EEV-HA1A101P	13	EEE-HA1A101P	2	EEE-HA1A101AP	7
10	220	D8	EEV-HA1A221XP	12	EEE-HA1A221XP	1	EEE-HAA221XAP	5
10	220	F	EEV-HA1A221P	13	EEE-HA1A221P	2	EEE-HA1A221AP	7
10	470	F	EEV-HA1A471UP	13	EEE-HA1A471UP	2	EEE-HAA471UAP	7
10	470	G	EEV-HA1A471P	13	EEE-HA1A471P	2	EEE-HA1A471AP	7
10	1000	G	EEV-HA1A102P	13	EEE-HA1A102P	2	EEE-HAA102UAP	7
16	10	B	EEV-HA1C100R	12	EEE-HA1C100R	1	EEE-HA1C100AR	5
16	22	B	EEV-HA1C220WR	12	EEE-HA1C220WR	1	EEE-HAC220WAR	5
16	22	C	EEV-HA1C220R	12	EEE-HA1C220R	1	EEE-HA1C220AR	5
16	33	C	EEV-HA1C330WR	12	EEE-HA1C330WR	1	EEE-HAC330WAR	5
16	47	C	EEV-HA1C470WR	12	EEE-HA1C470WR	1	EEE-HAC470WAR	5
16	47	D	EEV-HA1C470P	12	EEE-HA1C470P	1	EEE-HA1C470AP	5
16	100	D	EEV-HA1C101WP	12	EEE-HA1C101WP	1	EEE-HAC101WAP	5
16	220	F	EEV-HA1C221UP	13	EEE-HA1C221UP	2	EEE-HAC221UAP	7
16	220	D8	EEV-HA1C221XP	12	EEE-HA1C221XP	1	EEE-HAC221XAP	5
16	220	G	EEV-HA1C221P	13	EEE-HA1C221P	2	EEE-HA1C221AP	7
16	330	F	EEV-HA1C331UP	13	EEE-HA1C331UP	2	EEE-HAC331UAP	7
16	330	G	EEV-HA1C331P	13	EEE-HA1C331P	2	EEE-HA1C331AP	7
16	470	F	EEV-HA1C471UP	13	EEE-HA1C471UP	2	EEE-HA1C471UAP	7
16	470	G	EEV-HA1C471P	13	EEE-HA1C471P	2	EEE-HA1C471AP	7
16	680	G	EEV-HA1C681P	13	EEE-HA1C681P	2	EEE-HAC681UAP	7
25	4.7	B	EEV-HA1E4R7R	12	EEE-HA1E4R7R	1	EEE-HA1E4R7AR	5
25	10	B	EEV-HA1E100WR	12	EEE-HA1E100WR	1	EEE-HAE100WAR	5
25	10	C	EEV-HA1E100R	12	EEE-HA1E100R	1	EEE-HA1E100AR	5
25	22	C	EEV-HA1E220WR	12	EEE-HA1E220WR	1	EEE-HAE220WAR	5
25	22	D	EEV-HA1E220P	12			EEE-HA1E220AP	5

25	33	C	EEV-HA1E330WR	12	EEE-HA1E330WR	1	EEE-HAE330WAR	5
25	33	D	EEV-HA1E330P	12	EEE-HA1E330P	1	EEE-HA1E330AP	5
25	47	D	EEV-HA1E470WP	12	EEE-HA1E470WP	1	EEE-HAE470WAP	5
25	47	E	EEV-HA1E470P	13	EEE-HA1E470P	2	EEE-HA1E470AP	7
25	100	D8	EEV-HA1E101XP	12	EEE-HA1E101XP	1	EEE-HAE101XAP	5
25	100	E	EEV-HA1E101UP	13	EEE-HA1E101UP	2	EEE-HAE101UAP	7
25	100	F	EEV-HA1E101P	13	EEE-HA1E101P	2	EEE-HA1E101AP	7
25	220	F	EEV-HA1E221UP	13	EEE-HA1E221UP	2	EEE-HAE221UAP	7
25	220	G	EEV-HA1E221P	13	EEE-HA1E221P	2	EEE-HA1E221AP	7
25	330	F	EEV-HA1E331UP	13	EEE-HA1E331UP	2	EEE-HAE331UAP	7
25	330	G	EEV-HA1E331P	13	EEE-HA1E331P	2	EEE-HA1E331AP	7
25	470	G	EEV-HA1E471P	13	EEE-HA1E471P	2	EEE-HAE471UAP	7
35	4.7	B	EEV-HA1V4R7R	12	EEE-HA1V4R7R	1	EEE-HA1V4R7AR	5
35	10	B	EEV-HA1V100WR	12	EEE-HA1V100WR	1	EEE-HAV100WAR	5
35	10	C	EEV-HA1V100R	12	EEE-HA1V100R	1	EEE-HA1V100AR	5
35	22	C	EEV-HA1V220WR	12	EEE-HA1V220WR	1	EEE-HAV220WAR	5
35	22	D	EEV-HA1V220P	12	EEE-HA1V220P	1	EEE-HA1V220AP	5
35	33	D	EEV-HA1V330WP	12	EEE-HA1V330WP	1	EEE-HAV330WAP	5
35	33	E	EEV-HA1V330P	13	EEE-HA1V330P	2	EEE-HA1V330AP	7
35	47	E	EEV-HA1V470UP	13	EEE-HA1V470UP	2	EEE-HAV470UAP	7
35	47	F	EEV-HA1V470P	13	EEE-HA1V470P	2	EEE-HA1V470AP	7
35	100	D8	EEV-HA1V101XP	12	EEE-HA1V101XP	1	EEE-HAV101XAP	5
35	100	F	EEV-HA1V101UP	13	EEE-HA1V101UP	2	EEE-HAV101UAP	7
35	100	G	EEV-HA1V101P	13	EEE-HA1V101P	2	EEE-HA1V101AP	7
35	220	F	EEV-HA1V221UP	13	EEE-HA1V221UP	2	EEE-HAV221UAP	7
35	220	G	EEV-HA1V221P	13	EEE-HA1V221P	2	EEE-HA1V221AP	7
35	330	G	EEV-HA1V331P	13	EEE-HA1V331P	2	EEE-HAV331UAP	7
50	0.1	B	EEV-HA1HR10R	12	EEE-HA1HR10R	1	EEE-HA1HR10AR	5
50	0.22	B	EEV-HA1HR22R	12	EEE-HA1HR22R	1	EEE-HA1HR22AR	5
50	0.33	B	EEV-HA1HR33R	12	EEE-HA1HR33R	1	EEE-HA1HR33AR	5
50	0.47	B	EEV-HA1HR47R	12	EEE-HA1HR47R	1	EEE-HA1HR47AR	5
50	1	B	EEV-HA1H1R0R	12	EEE-HA1H1R0R	1	EEE-HA1H1R0AR	5
50	2.2	B	EEV-HA1H2R2R	12	EEE-HA1H2R2R	1	EEE-HA1H2R2AR	5
50	3.3	B	EEV-HA1H3R3R	12	EEE-HA1H3R3R	1	EEE-HA1H3R3AR	5
50	4.7	C	EEV-HA1H4R7R	12	EEE-HA1H4R7R	1	EEE-HA1H4R7AR	5
50	10	C					EEE-HA1H100AP	5
50	10	D	EEV-HA1H100P	12	EEE-HA1H100P	1		
50	22	E	EEV-HA1H220P	13	EEE-HA1H220P	2	EEE-HA1H220AP	7
50	33	D8	EEV-HA1H330XP	12	EEE-HA1H330XP	1	EEE-HAH330XAP	5
50	33	E	EEV-HA1H330UP	13	EEE-HA1H330UP	2	EEE-HAH330UAP	7
50	33	F	EEV-HA1H330P	13	EEE-HA1H330P	2	EEE-HA1H330AP	7
50	47	D8	EEV-HA1H470XP	12	EEE-HA1H470XP	1	EEE-HAH470XAP	5
50	47	F	EEV-HA1H470UP	13	EEE-HA1H470UP	2	EEE-HAH470UAP	7
50	47	G	EEV-HA1H470P	13	EEE-HA1H470P	2	EEE-HA1H470AP	7
50	100	F	EEV-HA1H101UP	13	EEE-HA1H101UP	2	EEE-HAH101UAP	7
50	100	G	EEV-HA1H101P	13	EEE-HA1H101P	2	EEE-HA1H101AP	7
50	220	G	EEV-HA1H221P	13	EEE-HA1H221P	2	EEE-HAH221UAP	7
63	10	E	EEV-HA1J100P	13	EEE-HA1J100P	2		
63	22	E	EEV-HA1J220UP	13	EEE-HA1J220UP	2		
63	22	F	EEV-HA1J220P	13	EEE-HA1J220P	2		
63	33	G	EEV-HA1J330P	13	EEE-HA1J330P	2		

63	47	F	EEV-HA1J470UP	13	EEE-HA1J470UP	2		
63	47	G	EEV-HA1J470P	13	EEE-HA1J470P	2		
100	3.3	E	EEV-HA2A3R3P	13	EEE-HA2A3R3P	2		
100	4.7	E	EEV-HA2A4R7UP	13	EEE-HA2A4R7UP	2		
100	4.7	F	EEV-HA2A4R7P	13	EEE-HA2A4R7P	2		
100	10	F	EEV-HA2A100P	13	EEE-HA2A100P	2		
100	22	F	EEV-HA2A220UP	13	EEE-HA2A220UP	2		
100	22	G	EEV-HA2A220P	13	EEE-HA2A220P	2		
100	33	G	EEV-HA2A330P	13	EEE-HA2A330P	2		
100	47	G	EEV-HA2A470UP	13	EEE-HA2A470UP	2		

■ 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