

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

BULLETIN #: [NRFND.PG44.06.05.09-2](#)

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Details: V-HB 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-HB 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 (suffix - A)</i>	Reflow
4	47	B	EEV-HB0G470R	12	EEE-HB0G470R	1		
4	100	C	EEV-HB0G101R	12	EEE-HB0G101R	1		
4	150	D	EEV-HB0G151P	12	EEE-HB0G151P	1		
4	220	D	EEV-HB0G221P	12	EEE-HB0G221P	1		
6.3	22	B	EEV-HB0J220R	12	EEE-HB0J220R	1	EEE-HB0J220AR	5
6.3	33	B	EEV-HB0J330R	12	EEE-HB0J330R	1	EEE-HB0J330AR	5
6.3	47	B					EEE-HBJ470UAR	5
6.3	47	C	EEV-HB0J470R	12	EEE-HB0J470R	1	EEE-HB0J470AR	5
6.3	100	C					EEE-HBJ101UAR	5
6.3	100	D	EEV-HB0J101P	12	EEE-HB0J101P	1	EEE-HB0J101AP	5
6.3	220	D					EEE-HBJ221UAP	5
6.3	220	F	EEV-HB0J221P	13	EEE-HB0J221P	2	EEE-HB0J221AP	7
6.3	330	E					EEE-HBJ331UAP	7
6.3	330	F	EEV-HB0J331P	13	EEE-HB0J331P	2	EEE-HB0J331AP	7
6.3	470	F					EEE-HBJ471UAP	7
6.3	1500	G					EEE-HBJ152UAP	7
10	33	B					EEE-HBA330UAR	5
10	33	C	EEV-HB1A330R	12	EEE-HB1A330R	1	EEE-HB1A330AR	5
10	68	D					EEE-HB1A680AP	5
10	100	D					EEE-HBA101UAR	5
10	100	E	EEV-HB1A101P	13	EEE-HB1A101P	2	EEE-HB1A101AP	7
10	150	D					EEE-HBA151UAR	5
10	220	E					EEE-HBA221UAR	7
10	220	F	EEV-HB1A221P	13	EEE-HB1A221P	2	EEE-HB1A221AP	7
10	470	F					EEE-HBA471UAR	7
10	470	G	EEV-HB1A471P	13	EEE-HB1A471P	2	EEE-HB1A471AP	7
16	10	B	EEV-HB1C100R	12	EEE-HB1C100R	1	EEE-HB1C100AR	5
16	22	B					EEE-HBC220UAR	5
16	22	C	EEV-HB1C220R	12	EEE-HB1C220R	1	EEE-HB1C220AR	5
16	33	D					EEE-HB1C330AP	5
16	47	C					EEE-HBC470UAR	5
16	47	D	EEV-HB1C470P	12	EEE-HB1C470P	1	EEE-HB1C470AP	5
16	47	D8					EEE-HBC470XAP	5
16	100	D					EEE-HBC101UAR	5
16	100	F	EEV-HB1C101P	13	EEE-HB1C101P	2	EEE-HB1C101AP	7
16	220	F					EEE-HBC221UAR	7
16	220	G	EEV-HB1C221P	13	EEE-HB1C221P	2	EEE-HB1C221AP	7
16	330	G	EEV-HB1C331P	13	EEE-HB1C331P	2	EEE-HB1C331AP	7
16	470	F					EEE-HBC471UAR	7
16	470	G					EEE-HB1C471AP	7
25	4.7	B	EEV-HB1E4R7R	12	EEE-HB1E4R7R	1	EEE-HB1E4R7AR	5
25	6.8	B	EEV-HB1E6R8R	12	EEE-HB1E6R8R	1	EEE-HB1E6R8AR	5
25	10	B					EEE-HBE100UAR	5
25	10	C					EEE-HB1E100AR	5
25	22	D					EEE-HB1E220AP	5
25	33	C					EEE-HBE330UAR	5
25	33	D	EEV-HB1E330P	12	EEE-HB1E330P	1	EEE-HB1E330AP	5

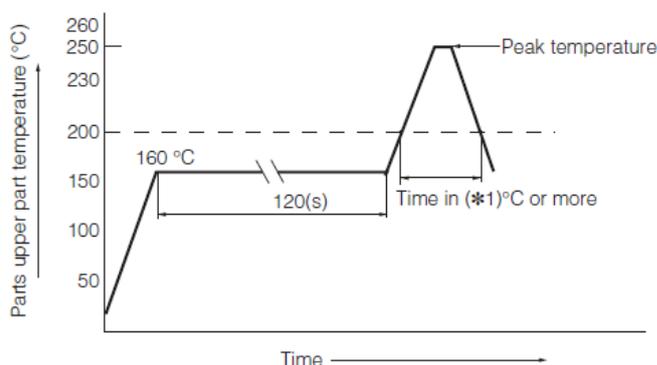
25	47	D					EEE-HBE470UAP	5
25	47	E	EEV-HB1E470P	13	EEE-HB1E470P	2	EEE-HB1E470AP	7
25	100	E					EEE-HBE101UAP	7
25	100	F	EEV-HB1E101P	13	EEE-HB1E101P	2	EEE-HB1E101AP	7
25	220	F					EEE-HBE221UAP	7
25	220	G	EEV-HB1E221P	13	EEE-HB1E221P	2	EEE-HB1E221AP	7
25	330	F					EEE-HBE331UAP	7
25	330	G					EEE-HB1E331AP	7
25	470	G					EEE-HBE471UAP	7
35	4.7	B					EEE-HB1V4R7AR	5
35	6.8	B					EEE-HBV6R8UAR	5
35	10	C	EEV-HB1V100R	12	EEE-HB1V100R	1	EEE-HB1V100AR	5
35	22	D	EEV-HB1V220P	12	EEE-HB1V220P	1	EEE-HB1V220AP	5
35	33	E	EEV-HB1V330P	13	EEE-HB1V330P	2	EEE-HB1V330AP	7
35	47	D8					EEE-HBV470YAP	5
35	47	E					EEE-HBV470UAP	7
35	47	F	EEV-HB1V470P	13	EEE-HB1V470P	2	EEE-HB1V470AP	7
35	100	F					EEE-HBV101UAP	7
35	100	G	EEV-HB1V101P	13	EEE-HB1V101P	2	EEE-HB1V101AP	7
35	220	G					EEE-HBV221UAP	7
50	0.1	B	EEV-HB1HR10R	12	EEE-HB1HR10R	1	EEE-HB1HR10AR	5
50	0.22	B	EEV-HB1HR22R	12	EEE-HB1HR22R	1	EEE-HB1HR22AR	5
50	0.33	B	EEV-HB1HR33R	12	EEE-HB1HR33R	1	EEE-HB1HR33AR	5
50	0.47	B	EEV-HB1HR47R	12	EEE-HB1HR47R	1	EEE-HB1HR47AR	5
50	0.68	B					EEE-HB1HR68AR	5
50	1	B	EEV-HB1H1R0R	12	EEE-HB1H1R0R	1	EEE-HB1H1R0AR	5
50	2.2	B	EEV-HB1H2R2R	12	EEE-HB1H2R2R	1	EEE-HB1H2R2AR	5
50	3.3	B	EEV-HB1H3R3R	12	EEE-HB1H3R3R	1	EEE-HB1H3R3AR	5
50	4.7	C	EEV-HB1H4R7R	12	EEE-HB1H4R7R	1	EEE-HB1H4R7AR	5
50	6.8	C	EEV-HB1H6R8R	12	EEE-HB1H6R8R	1	EEE-HB1H6R8AR	5
50	10	D	EEV-HB1H100P	12	EEE-HB1H100P	1	EEE-HB1H100AP	5
50	22	D					EEE-HBH220UAP	5
50	22	E	EEV-HB1H220P	13	EEE-HB1H220P	2	EEE-HB1H220AP	7
50	33	F	EEV-HB1H330P	13	EEE-HB1H330P	2	EEE-HB1H330AP	7
50	47	D8					EEE-HBH470YAP	5
50	47	F					EEE-HBH470UAP	7
50	47	G	EEV-HB1H470P	13	EEE-HB1H470P	2	EEE-HB1H470AP	7
50	100	G					EEE-HBH101UAP	7
50	220	G					EEE-HBH221UAP	7

### V-HB (Bi-polar) series

W.V. (V)	Cap (uF)	Case size	Part No.		Part No.	
			RoHS: not compliant	Reflow	RoHS: compliant	Reflow
6.3	47	D	EEV-HP0J470P	12	EEE-HP0J470P	1
10	10	B	EEV-HP1A100R	12	EEE-HP1A100R	1
10	33	D	EEV-HP1A330P	12	EEE-HP1A330P	1
16	10	C	EEV-HP1C100R	12	EEE-HP1C100R	1
25	3.3	B	EEV-HP1E3R3R	12	EEE-HP1E3R3R	1
25	4.7	B	EEV-HP1E4R7R	12	EEE-HP1E4R7R	1
25	10	D	EEV-HP1E100P	12	EEE-HP1E100P	1
25	22	D	EEV-HP1E220P	12	EEE-HP1E220P	1
35	2.2	B	EEV-HP1V2R2R	12	EEE-HP1V2R2R	1
50	0.22	B	EEV-HP1HR22R	12	EEE-HP1HR22R	1
50	0.33	B	EEV-HP1HR33R	12	EEE-HP1HR33R	1
50	0.47	B	EEV-HP1HR47R	12	EEE-HP1HR47R	1
50	1	B	EEV-HP1H1R0R	12	EEE-HP1H1R0R	1
50	3.3	D	EEV-HP1H3R3P	12	EEE-HP1H3R3P	1
50	4.7	D	EEV-HP1H4R7P	12	EEE-HP1H4R7P	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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[EEE-HBA101UAP](#) [EEE-HBA151UAP](#) [EEE-HBA221UAP](#) [EEE-HBA330UAR](#) [EEE-HBA471UAP](#) [EEE-HBC101UAP](#)  
[EEE-HBC220UAR](#) [EEE-HBC221UAP](#) [EEE-HBC470UAR](#) [EEE-HBC470XAP](#) [EEE-HBC471UAP](#) [EEE-HBE221UAP](#)  
[EEE-HBE330UAR](#) [EEE-HBE331UAP](#) [EEE-HBE471UAP](#) [EEE-HBH101UAP](#) [EEE-HBH221UAP](#) [EEE-HBH470UAP](#)  
[EEE-HBH470YAP](#) [EEE-HBJ152UAP](#) [EEE-HBJ221UAP](#) [EEE-HBJ331UAP](#) [EEE-HBJ470UAR](#) [EEE-HBJ471UAP](#)  
[EEE-HBV101UAP](#) [EEE-HBV221UAP](#) [EEE-HBV470UAP](#) [EEE-HBV470YAP](#) [EEE-HBV6R8UAR](#) [EEE-HB0J101AP](#)  
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[HB1A221AP](#) [EEE-HB1A330AR](#) [EEE-HB1A471AP](#) [EEE-HB1A680AP](#) [EEE-HB1C100AR](#) [EEE-HB1C101AP](#) [EEE-](#)  
[HB1C220AR](#) [EEE-HB1C221AP](#) [EEE-HB1C330AP](#) [EEE-HB1C331AP](#) [EEE-HB1C471AP](#) [EEE-HB1E100AR](#) [EEE-](#)  
[HB1E101AP](#) [EEE-HB1E220AP](#) [EEE-HB1E221AP](#) [EEE-HB1E330AP](#) [EEE-HB1E4R7AR](#) [EEE-HB1E470AP](#) [EEE-](#)  
[HB1E6R8AR](#) [EEE-HB1HR10AR](#) [EEE-HB1HR22AR](#) [EEE-HB1HR33AR](#) [EEE-HB1HR47AR](#) [EEE-HB1H100AP](#) [EEE-](#)  
[HB1H2R2AR](#) [EEE-HB1H220AP](#) [EEE-HB1H3R3AR](#) [EEE-HB1H330AP](#) [EEE-HB1H4R7AR](#) [EEE-HB1H6R8AR](#) [EEE-](#)  
[HB1V100AR](#) [EEE-HB1V101AP](#) [EEE-HB1V220AP](#) [EEE-HB1V330AP](#) [EEE-HB1V4R7AR](#) [EEE-HB1V470AP](#)