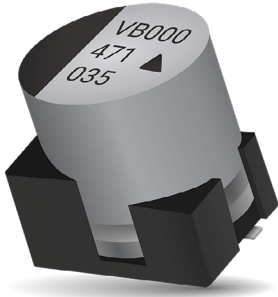


SMD Aluminum Electrolytic Vibration Proof Capacitors

AEVB Series



FEATURES

- Long life
- Endurance: 2000 - 5000 hours at 125°C
- Peak Acceleration 30G
- RoHS Compliance and Halogen-free

APPLICATIONS

- Industrial
- High Temperature Applications



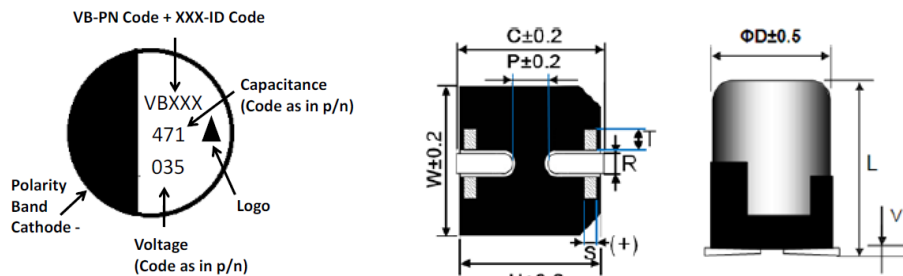
HOW TO ORDER

A	EVB	1213	471	M	035	R	-
Product Type Aluminum	Series Type	Case Size See table below	Capacitance Code μF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Tolerance M = ±20%	Rated DC Voltage 016 = 16Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Packaging R = 15" Reel (Material details available upon request)	Special No Code = std

CASE DIMENSIONS millimeters (inches)

Code	D±0.50 (0.020)	L±1.00 (0.039)	W±0.20 (0.008)	H±0.20 (0.008)	C±0.20 (0.008)	R	P±0.20 (0.008)	S	T	V max	Typical Weight (g)
0810	8.00 (0.314)	10.50±0.50 (0.413±0.020)	8.30 (0.327)	8.30 (0.327)	9.00 (0.354)	0.70-1.10 (0.028-0.043)	3.20 (0.126)	0.70 (0.028)	1.30 (0.051)	0.30 (0.012)	0.75
1010	10.00 (0.394)	10.50±0.50 (0.413±0.020)	10.30 (0.406)	10.30 (0.406)	11.00 (0.433)	1.00-1.40 (0.039-0.055)	4.50 (0.177)	0.70 (0.028)	1.30 (0.051)	0.30 (0.012)	1.37
1213	12.50 (0.492)	13.50 (0.531)	13.50 (0.531)	13.50 (0.531)	14.20 (0.559)	1.10-1.40 (0.043-0.055)	4.50 (0.177)	2.20 (0.087)	2.40 (0.094)	0.40 (0.016)	2.67
1616	16.00 (0.630)	16.50 (0.650)	17.00 (0.669)	17.00 (0.669)	18.00 (0.709)	1.40-1.80 (0.055-0.071)	6.40 (0.252)	3.00 (0.118)	2.00 (0.079)	0.40 (0.016)	5.33

MARKING



TECHNICAL SPECIFICATIONS

Category Temperature Range:		-40°C to +125°C
Capacitance Range:	At 25°C, 120Hz	47μF to 2200μF
Capacitance Tolerance:	At 25°C, 120Hz	±20%
Dissipation Factor (%)	Measurement Frequency: 120Hz at 25°C	Please see the Ratings and Part Number Reference Table below
Leakage Current	After 2 minutes at rated working voltage at 25°C	I ≤ 0.01CV or 3μA, whichever is greater

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CAPACITANCE AND RATED VOLTAGE RANGE (FIGURE DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R)			
μF	Code	16V	25V	35V	50V
47	470				0810
100	101			0810	1010
160	161			0810	
220	221		0810	1010	1213
270	271		0810		
300	301			1010	
330	331	0810	0810	1213	
390	391	0810			
470	471	1010	1010	1213	1616
620	621			1213	
680	681	1010	1010	1616	
910	911		1213		
1000	102	1213	1213		
1500	152	1213	1616		
2200	222	1616			

Released ratings

RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	100kHz RMS Current (mA)/125°C	ESR Max. @ 100kHz (mΩ)	Lifetime (h)	MSL
16 Volt									
AEVB0810331M016R	0810	330	16	52	20	300	180	2000	1
AEVB0810391M016R	0810	390	16	62	20	300	180	2000	1
AEVB1010471M016R	1010	470	16	75	20	500	110	2000	1
AEVB1010681M016R	1010	680	16	108	20	500	110	2000	1
AEVB1213102M016R	1213	1000	16	160	20	1200	80	3000	1
AEVB1213152M016R	1213	1500	16	240	20	1200	80	3000	1
AEVB1616222M016R	1616	2200	16	352	20	1800	50	5000	1
25 Volt									
AEVB0810221M025R	0810	220	25	55	20	300	180	2000	1
AEVB0810271M025R	0810	270	25	67	20	300	180	2000	1
AEVB0810331M025R	0810	330	25	82	20	300	180	2000	1
AEVB1010471M025R	1010	470	25	117	20	500	110	2000	1
AEVB1010681M025R	1010	680	25	170	20	500	110	2000	1
AEVB1213911M025R	1213	910	25	227	20	1200	80	3000	1
AEVB1213102M025R	1213	1000	25	250	20	1200	80	3000	1
AEVB1616152M025R	1616	1500	25	375	20	1800	50	5000	1
35 Volt									
AEVB0810101M035R	0810	100	35	35	14	300	180	2000	1
AEVB0810161M035R	0810	160	35	56	14	300	180	2000	1
AEVB1010221M035R	1010	220	35	77	14	500	110	2000	1
AEVB1010301M035R	1010	300	35	105	14	500	110	2000	1
AEVB1213331M035R	1213	330	35	115	14	1200	80	3000	1
AEVB1213471M035R	1213	470	35	164	14	1200	80	3000	1
AEVB1213621M035R	1213	620	35	217	14	1200	80	3000	1
AEVB1616681M035R	1616	680	35	238	14	1800	50	5000	1
50 Volt									
AEVB0810470M050R	0810	47	50	23	14	250	500	2000	1
AEVB1010101M050R	1010	100	50	50	14	350	300	2000	1
AEVB1213221M050R	1213	220	50	110	14	700	150	3000	1
AEVB1616471M050R	1616	470	50	235	14	1000	90	5000	1

All technical data relates to an ambient temperature of +20°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 2 minutes.

FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

100 ≤ F(Hz) < 1K	1K ≤ F(Hz) < 10K	10K ≤ F(Hz) < 100K	100K(Hz) ≤ F
0.60	0.85	0.93	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

SMD Aluminum Electrolytic Vibration Proof Capacitors

AEVB Series

QUALIFICATION TABLE

Test	AEVB series (Temperature range -55°C to +125°C)					
	Condition	Characteristics				
Low Temperature Characteristics (Max. Impedance Ratio)	At 120Hz	Rated Voltage (V)	16	25	35	50
		Z(-25°C)/Z(+20°C)	5	2	2	2
		Z(-40°C)/Z(+20°C)	8	4	3	3
Endurance	(D=8-10: 2000 hours; D=12.5: 3000 hours, D=16: 5000 hours) with application of rated voltage at 125°C	ΔC/C	Within ±30% of the initial limit			
		DF	300% or less of the initial specified limit			
		DCL	Initial specified limit or less			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours 125°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.	ΔC/C	Within ±30% of the initial limit			
		DF	300% or less of the initial specified limit			
		DCL	Initial specified limit or less			
Standards	JIS C 5101-4-1 (IEC 60384)					

REFLOW

Diameter (mm)	Φ8-16
Peak Temperature	245°C, 5 sec. max.
Preheat Temperature	150°C to 180°C, 120 sec. max.
Duration at 217°C or higher	40 sec. max.
Reflow Number	Twice or less

STORAGE

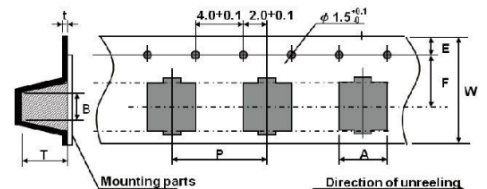
- It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C (if between 35°C to 85°C, it should be less than three months) and the relative humidity of 75% or below.
- Confirm that the environment does not have any of the following conditions:
 - Damp conditions such as water, saltwater spray, oil spray or fumes. High humidity or humidity condensation situations.
 - In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
 - Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
 - Being exposed to acidic or alkaline solutions.
 - Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
- Shelf life

Years		
0-1	1-2	>2
Ok	Ok	Performance check

- Years from manufacturing date code.
- KYOCERA AVX does not guarantee or assume responsibility for product behavior after 3 years of storage.
- Ageing procedure should be performed as follows:
 - Connect the capacitor in series to a 1kΩ resistor, and apply half rated voltage for 2 hours.
 - After half rated voltage for 2 hours applied, increase and apply rated voltage for another 2 hours.

PACKAGE TAPE DIMENSIONS units (mm)

Size Code	A±0.20	B±0.20	W±0.30	F±0.10	E±0.10	P±0.10	t±0.10	T ₂ ±0.20
0810	9.4	9.4	24.0	11.5	1.75	16.0	0.6	11.4
1010	11.4	11.4	24.0	11.5	1.75	16.0	0.6	11.4
1213	13.7	13.7	32.0	14.2	1.75	24.0	0.6	15.0
1616	17.5	17.5	44.0	20.2	1.75	28.0	0.6	17.5

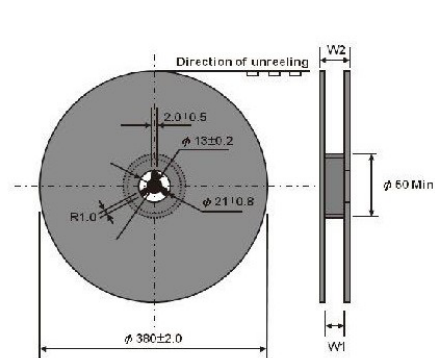


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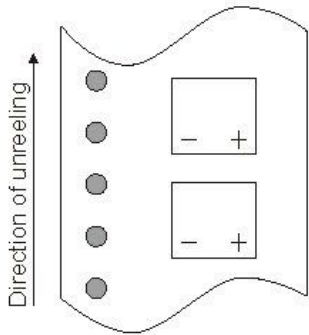
AEVB Series



REEL



POLARITY



DIMENSIONS units (mm)

Size Code	W1±1.00	W2±1.00	Qty./Reel
0810	26.0	31.0	500
1010	26.0	31.0	500
1213	34.0	39.0	250
1616	46.0	51.0	200

RECOMMENDED LAND PATTERN DIMENSION OF PCB

Size Code	A (mm)	B (mm)	C (mm)
0810	2.5	4.5	4.7
1010	3.8	4.8	4.7
1213	3.8	6.1	6.9
1616	5.0	8.0	9.5

