

SMD Aluminum Electrolytic Vibration Proof Capacitors

AEVA Series



FEATURES

- Long life
- Endurance: 1500 - 4000 hours at 125°C
- Peak Acceleration 30G
- RoHS Compliance and Halogen-free

APPLICATIONS

- Industrial
- High Temperature Applications



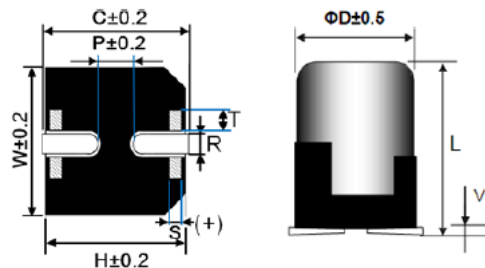
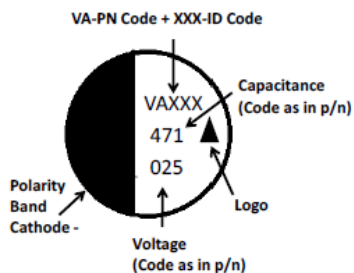
HOW TO ORDER

A	EVA	1213	471	M	025	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 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc 100 = 100Vdc	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
1821	18.00 (0.709)	21.50 (0.846)	19.00 (0.748)	19.00 (0.748)	20.00 (0.787)	1.70-2.10 (0.067-0.083)	6.40 (0.252)	3.00 (0.118)	2.00 (0.079)	0.40 (0.016)	11.00

MARKING



SMD Aluminum Electrolytic Vibration Proof Capacitors

AEVA Series



TECHNICAL SPECIFICATIONS

Category Temperature Range:		-55°C to +125°C
Capacitance Range:	At 25°C, 120Hz	10µF to 4700µF
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 3 minutes at rated working voltage at 25°C	$I \leq 0.01CV$ or 3µA, whichever is greater

CAPACITANCE AND RATED VOLTAGE RANGE (FIGURE DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V _R)							
µF	Code	6.3V	10V	16V	25V	35V	50V	63V	100V
10	100								0810
22	220							0810	0810
33	330						0810	0810	1010
47	470					0810	1010	0810, 1010	1213
100	101			0810	0810	1010	1213	1010, 1213	1616
220	221		0810	0810	1010	1213		1213, 1616	
330	331	0810	0810	1010	1010, 1213		1213, 1616		
470	471	0810	1010	1213	1213	1616		1616	
680	681	1010	1213	1213	1213		1616		
1000	102	1213	1213		1616	1616		1821	
1500	152	1213	1213	1616					
2200	222	1213	1616						
3300	332	1616	1616						
4700	472	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
6.3 Volt									
AEVA0810331M006R	0810	330	6.3	20	30	160	400	2000	1
AEVA0810471M006R	0810	470	6.3	29	30	160	400	2000	1
AEVA1010681M006R	1010	680	6.3	42	30	220	300	2000	1
AEVA1213102M006R	1213	1000	6.3	63	30	550	120	2000	1
AEVA1213152M006R	1213	1500	6.3	94	30	550	120	2000	1
AEVA1213222M006R	1213	2200	6.3	138	30	550	120	2000	1
AEVA1616332M006R	1616	3300	6.3	207	30	900	80	2000	1
AEVA1616472M006R	1616	4700	6.3	296	30	900	80	2000	1
10 Volt									
AEVA0810221M010R	0810	220	10	22	24	160	400	2000	1
AEVA0810331M010R	0810	330	10	33	24	160	400	2000	1
AEVA1010471M010R	1010	470	10	47	24	220	300	2000	1
AEVA1213681M010R	1213	680	10	68	24	550	120	2000	1
AEVA1213102M010R	1213	1000	10	100	24	550	120	2000	1
AEVA1213152M010R	1213	1500	10	150	24	550	120	2000	1
AEVA1616222M010R	1616	2200	10	220	24	900	80	2000	1
AEVA1616332M010R	1616	3300	10	330	24	900	80	2000	1
16 Volt									
AEVA0810101M016R	0810	100	16	16	20	160	400	2000	1
AEVA0810221M016R	0810	220	16	35	20	160	400	2000	1
AEVA1010331M016R	1010	330	16	52	20	220	300	2000	1
AEVA1213471M016R	1213	470	16	75	20	550	120	2000	1
AEVA1213681M016R	1213	680	16	108	20	550	120	2000	1
AEVA1616152M016R	1616	1500	16	240	20	900	80	2000	1
25 Volt									
AEVA0810101M025R	0810	100	25	25	16	160	400	2000	1
AEVA1010221M025R	1010	220	25	55	16	220	300	2000	1
AEVA1010331M025R	1010	330	25	82	16	220	300	2000	1
AEVA1213331M025R	1213	330	25	82	16	550	120	2000	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.



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

SMD Aluminum Electrolytic Vibration Proof Capacitors

AEVA Series

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
AEVA1213471M025R	1213	470	25	117	16	550	120	2000	1
AEVA1213681M025R	1213	680	25	170	16	550	120	2000	1
AEVA1616102M025R	1616	1000	25	250	16	900	80	2000	1
35 Volt									
AEVA0810470M035R	0810	47	35	16	14	160	400	2000	1
AEVA1010101M035R	1010	100	35	35	14	220	300	2000	1
AEVA1213221M035R	1213	220	35	77	14	550	120	2000	1
AEVA1616471M035R	1616	470	35	164	14	900	80	2000	1
AEVA1616102M035R	1616	1000	35	350	14	900	80	2000	1
50 Volt									
AEVA0810330M050R	0810	33	50	16	14	140	700	2000	1
AEVA1010470M050R	1010	47	50	23	14	240	500	2000	1
AEVA1213101M050R	1213	100	50	50	14	490	230	2000	1
AEVA1213331M050R	1213	330	50	165	14	490	230	2000	1
AEVA1616331M050R	1616	330	50	165	14	800	150	2000	1
AEVA1616681M050R	1616	680	50	340	14	800	150	2000	1
63 Volt									
AEVA0810220M063R	0810	22	63	13	12	100	1000	1500	1
AEVA0810330M063R	0810	33	63	20	12	100	1000	1500	1
AEVA0810470M063R	0810	47	63	29	12	100	1000	1500	1
AEVA1010470M063R	1010	47	63	29	12	150	500	1500	1
AEVA1010101M063R	1010	100	63	63	12	150	500	1500	1
AEVA1213101M063R	1213	100	63	63	12	350	250	1500	1
AEVA1213221M063R	1213	220	63	138	12	350	250	1500	1
AEVA1616221M063R	1616	220	63	138	12	500	180	1500	1
AEVA1616471M063R	1616	470	63	296	12	500	180	1500	1
AEVA1821102M063R	1821	1000	63	630	12	2600	68	4000	1
100 Volt									
AEVA0810100M100R	0810	10	100	10	10	70	1000	1500	1
AEVA0810220M100R	0810	22	100	22	10	70	1000	1500	1
AEVA1010330M100R	1010	33	100	33	10	115	800	1500	1
AEVA1213470M100R	1213	47	100	47	10	350	330	1500	1
AEVA1616101M100R	1616	100	100	100	10	500	240	1500	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

Rated Voltage (Vdc)	100 ≤ F(Hz) < 1K	1K ≤ F(Hz) < 10K	10K ≤ F(Hz) < 100K	100K(Hz) ≤ F
C ≤ 22	0.50	0.80	0.90	1.00
22 < C ≤ 150	0.65	0.85	0.92	1.00
150 < C	0.70	0.85	0.95	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.

QUALIFICATION TABLE

Test	AEVA series (Temperature range -55°C to +125°C)									
	Condition	Characteristics								
Low Temperature Characteristics (Max. Impedance Ratio)	At 120Hz	Rated Voltage (V)	6.3	10	16	25	35	50	63	100
		Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2
		Z(-55°C)/Z(+20°C)	8	6	4	3	3	3	3	3
Endurance	6.3V-50V 2000 hours, 63V-100V 1500 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)									

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REFLOW

Diameter (mm)	Φ8-18
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

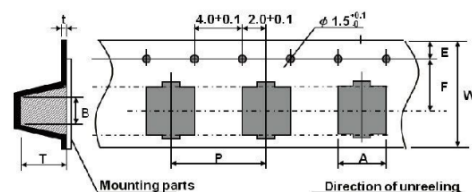
- It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C (if between 35°C to 85°C, it should be less than three months) and the relative humidity of 75% or below.
- Confirm that the environment does not have any of the following conditions:
 - Damp conditions such as water, 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

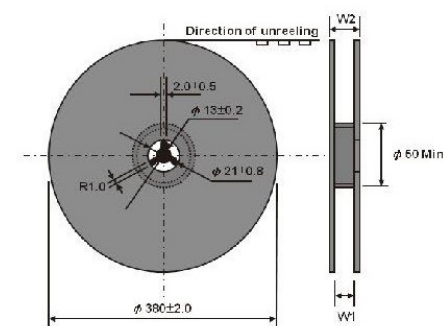
- Years from manufacturing date code.
- KYOCERA AVX does not guarantee or assume responsibility for product behavior after 3 years of storage.
- Ageing procedure should be performed as follows:
 - Connect the capacitor in series to a 1kΩ resistor, and apply half rated voltage for 2 hours.
 - After half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

PACKAGE TAPE DIMENSIONS units (mm)

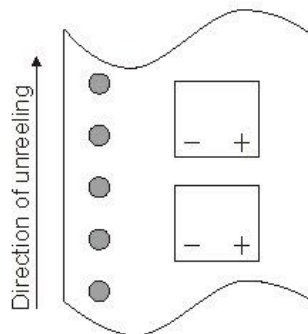
Size Code	A±0.20	B±0.20	W±0.30	F±0.10	E±0.10	P±0.10	t	T ₂ ±0.20
0810	9.4	9.4	24.0	11.5	1.75	16.0	0.6	11.4
1010	11.4	11.4	24.0	11.5	1.75	16.0	0.6	11.4
1213	13.7	13.7	32.0	14.2	1.75	24.0	0.6	15.0
1616	17.5	17.5	44.0	20.2	1.75	28.0	0.6	17.5
1821	19.5	19.5	44.0	20.2	1.75	32.0	0.6	23.0



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
1821	46.0	51.0	100

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
1821	5.0	8.6	9.5

