

## Radial Lead Type

Series : **EB** Type : **A**



Sales in Japanese domestic will end.

### Features

- Endurance : +105 °C 5000 h to 10000 h
- High ripple high frequency (High Voltage)
- RoHS compliant

### Specifications

Category temperature range	-40 °C to +105 °C	-25 °C to +105 °C
Rated voltage range	10 V.DC to 63 V.DC	160 V.DC to 450 V.DC
Capacitance range	2.2 μF to 3300 μF	10 μF to 330 μF
Capacitance tolerance	±20 % (120 Hz/+20 °C)	
Leakage current	I ≤ 0.01 CV or 3 (μA) After 2 minutes application of rated working voltage at +20 °C (Whichever is greater)	
Dissipation factor (tan δ)	Please see the attached characteristics list	
Endurance	After following life test with DC voltage and +105 °C±2 °C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below.	
	(10 V.DC to 63 V.DC) Duration : φ5×11 to φ8×11.5 : 5000 hours    φ8×15 to φ12.5×25 : 10000 hours	
	Capacitance change	Within ±30 % of the initial value
	tan δ	≤ 300 % of the initial limit
	DC leakage current	Within the initial limit
	(160 V.DC to 450 V.DC) Duration : 5000 hours	
Capacitance change	Within ±20 % of the initial value	
tan δ	≤ 200 % of the initial limit	
DC leakage current	Within the initial limit	
Shelf life	After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)	

### Frequency correction factor for ripple current

(10 V.DC ~ 63 V.DC)

Capacitance (μF)	Frequency (Hz)				
	60	120	1 k	10 k	100 k
2.2 to 10	0.75	1.00	1.40	1.55	1.65
22 to 470	0.85	1.00	1.20	1.25	1.30
1000 to 3300	0.95	1.00	1.05	1.10	1.15

Rated voltage (V.DC)	Frequency (Hz)			
	120	1 k	10 k to 30k	30 k to 100k
160 to 250	0.55	0.85	0.90	1.00
350 to 450	0.50	0.80	0.90	1.00

### Dimensions

\* L ≤ 16 : L±1.0 (φ8×15 only L±1.5)  
L ≥ 20 : L±2.0

(Unit : mm)

	5	6.3	8	10	12.5	16	18
φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5

## Characteristics list

Endurance : 105 °C  $\phi 5 \times 11$  to  $\phi 8 \times 11.5 = 5000$  h,  $\phi 8 \times 15$  to  $\phi 12.5 \times 25 = 10000$  h

Rated voltage (V.DC)	Cap. ( $\pm 20\%$ ) ( $\mu\text{F}$ )	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Qty		
		$\phi\text{D}$	L	Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	$\tan \delta$ (120 Hz) (+20 °C)	Endurance (hours)	Lead dia. $\phi\text{d}$	Lead space			Straight leads (pcs)	Taping (pcs)	
								Straight	Taping *B				Taping *H
10	100	5	11	66	0.30	5000	0.5	2.0	5.0	2.5	EEUEB1A101S( )	200	2000
	220	6.3	11.2	100	0.30	5000	0.5	2.5	5.0	2.5	EEUEB1A221S( )	200	2000
	470	8	15	278	0.30	10000	0.6	3.5	5.0		EEUEB1A471( )	200	1000
		8	11.5	180	0.30	5000	0.6	3.5	5.0		EEUEB1A471S( )	200	1000
	2200	12.5	20	540	0.32	10000	0.6	5.0	5.0		EEUEB1A222( )	200	500
	3300	12.5	25	802	0.34	10000	0.6	5.0	5.0		EEUEB1A332( )	200	500
16	1000	10	20	430	0.25	10000	0.6	5.0	5.0		EEUEB1C102( )	200	500
	2200	12.5	25	706	0.27	10000	0.6	5.0	5.0		EEUEB1C222( )	200	500
25	47	5	11	55	0.22	5000	0.5	2.0	5.0	2.5	EEUEB1E470S( )	200	2000
	100	6.3	11.2	95	0.22	5000	0.5	2.5	5.0	2.5	EEUEB1E101S( )	200	2000
	220	8	11.5	125	0.22	5000	0.6	3.5	5.0		EEUEB1E221S( )	200	1000
	330	8	15	255	0.22	10000	0.6	3.5	5.0		EEUEB1E331( )	200	1000
	470	10	16	321	0.22	10000	0.6	5.0	5.0		EEUEB1E471( )	200	500
	1000	12.5	20	498	0.22	10000	0.6	5.0	5.0		EEUEB1E102( )	200	500
35	33	5	11	46	0.18	5000	0.5	2.0	5.0	2.5	EEUEB1V330S( )	200	2000
	220	8	15	197	0.18	10000	0.6	3.5	5.0		EEUEB1V221( )	200	1000
	330	10	16	278	0.18	10000	0.6	5.0	5.0		EEUEB1V331( )	200	500
	470	10	20	349	0.18	10000	0.6	5.0	5.0		EEUEB1V471( )	200	500
	1000	12.5	25	586	0.18	10000	0.6	5.0	5.0		EEUEB1V102( )	200	500
50	2.2	5	11	15	0.15	5000	0.5	2.0	5.0	2.5	EEUEB1H2R2S( )	200	2000
	3.3	5	11	18	0.15	5000	0.5	2.0	5.0	2.5	EEUEB1H3R3S( )	200	2000
	4.7	5	11	18	0.15	5000	0.5	2.0	5.0	2.5	EEUEB1H4R7S( )	200	2000
	10	5	11	27	0.15	5000	0.5	2.0	5.0	2.5	EEUEB1H100S( )	200	2000
	22	5	11	39	0.15	5000	0.5	2.0	5.0	2.5	EEUEB1H220S( )	200	2000
	47	6.3	11.2	61	0.15	5000	0.5	2.5	5.0	2.5	EEUEB1H470S( )	200	2000
	100	8	11.5	99	0.15	5000	0.6	3.5	5.0		EEUEB1H101S( )	200	1000
	220	10	16	234	0.15	10000	0.6	5.0	5.0		EEUEB1H221( )	200	500
	330	10	20	293	0.15	10000	0.6	5.0	5.0		EEUEB1H331( )	200	500
	470	12.5	20	370	0.15	10000	0.6	5.0	5.0		EEUEB1H471( )	200	500
63	2.2	5	11	16.5	0.12	5000	0.5	2.0	5.0	2.5	EEUEB1J2R2S( )	200	2000
	3.3	5	11	20	0.12	5000	0.5	2.0	5.0	2.5	EEUEB1J3R3S( )	200	2000
	4.7	5	11	23	0.12	5000	0.5	2.0	5.0	2.5	EEUEB1J4R7S( )	200	2000
	10	5	11	30	0.12	5000	0.5	2.0	5.0	2.5	EEUEB1J100S( )	200	2000
	22	6.3	11.2	40	0.12	5000	0.5	2.5	5.0	2.5	EEUEB1J220S( )	200	2000
	33	6.3	11.2	50	0.12	5000	0.5	2.5	5.0	2.5	EEUEB1J330S( )	200	2000
	47	8	15	94	0.12	10000	0.6	3.5	5.0		EEUEB1J470( )	200	1000
		8	11.5	80	0.12	5000	0.6	3.5	5.0		EEUEB1J470S( )	200	1000
	100	8	15	180	0.12	10000	0.6	3.5	5.0		EEUEB1J101( )	200	1000
	220	10	20	292	0.12	10000	0.6	5.0	5.0		EEUEB1J221( )	200	500
	330	12.5	20	381	0.12	10000	0.6	5.0	5.0		EEUEB1J331( )	200	500
	470	12.5	25	454	0.12	10000	0.6	5.0	5.0		EEUEB1J471( )	200	500

- When requesting taped product, please put the letter "B" or "H" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm, H=2.5 mm.
- Please refer to the page of "Taping dimensions".

## Characteristics list

Endurance : 105 °C 5000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Q'ty		
		φD	L	Ripple current (120 Hz) (+105 °C) (mA r.m.s.)	tan δ (120 Hz) (+20 °C)	Endurance (hours)	Lead dia. φd	Lead space			Straight leads (pcs)	Taping (pcs)	
								Straight	Taping *B				
160	22	10	20	470	0.15	5000	0.6	5.0	5.0	EEUEB2C220( )	200	500	
	33	10	20	470	0.15	5000	0.6	5.0	5.0	EEUEB2C330( )	200	500	
	47	12.5	20	600	0.15	5000	0.6	5.0	5.0	EEUEB2C470( )	200	500	
	68	12.5	25	750	0.15	5000	0.6	5.0	5.0	EEUEB2C680( )	200	500	
		16	20	750	0.15	5000	0.8	7.5	7.5	EEUEB2C680S( )	100	250	
	100	16	25	1060	0.15	5000	0.8	7.5	7.5	EEUEB2C101( )	100	250	
		18	20	1060	0.15	5000	0.8	7.5	7.5	EEUEB2C101S( )	100	250	
	150	16	31.5	1280	0.15	5000	0.8	7.5	–	EEUEB2C151	100	–	
		18	25	1280	0.15	5000	0.8	7.5	7.5	EEUEB2C151S( )	100	250	
	220	16	31.5	1280	0.15	5000	0.8	7.5	–	EEUEB2C221	100	–	
18		25	1280	0.15	5000	0.8	7.5	7.5	EEUEB2C221S( )	100	250		
330	18	31.5	1690	0.15	5000	0.8	7.5	–	EEUEB2C331	50	–		
200	22	10	20	470	0.15	5000	0.6	5.0	5.0	EEUEB2D220( )	200	500	
	33	12.5	20	600	0.15	5000	0.6	5.0	5.0	EEUEB2D330( )	200	500	
	47	12.5	20	600	0.15	5000	0.6	5.0	5.0	EEUEB2D470( )	200	500	
	68	12.5	25	750	0.15	5000	0.6	5.0	5.0	EEUEB2D680( )	200	500	
		16	20	750	0.15	5000	0.8	7.5	7.5	EEUEB2D680S( )	100	250	
	100	16	25	1060	0.15	5000	0.8	7.5	7.5	EEUEB2D101( )	100	250	
		18	20	1060	0.15	5000	0.8	7.5	7.5	EEUEB2D101S( )	100	250	
	150	16	31.5	1280	0.15	5000	0.8	7.5	–	EEUEB2D151	100	–	
		18	25	1280	0.15	5000	0.8	7.5	7.5	EEUEB2D151S( )	100	250	
	220	18	31.5	1690	0.15	5000	0.8	7.5	–	EEUEB2D221	50	–	
250	22	12.5	20	560	0.15	5000	0.6	5.0	5.0	EEUEB2E220( )	200	500	
	33	12.5	20	560	0.15	5000	0.6	5.0	5.0	EEUEB2E330( )	200	500	
	47	12.5	25	710	0.15	5000	0.6	5.0	5.0	EEUEB2E470( )	200	500	
		16	20	710	0.15	5000	0.8	7.5	7.5	EEUEB2E470S( )	100	250	
	68	16	25	990	0.15	5000	0.8	7.5	7.5	EEUEB2E680( )	100	250	
		18	20	990	0.15	5000	0.8	7.5	7.5	EEUEB2E680S( )	100	250	
	100	16	31.5	1200	0.15	5000	0.8	7.5	–	EEUEB2E101	100	–	
		18	25	1200	0.15	5000	0.8	7.5	7.5	EEUEB2E101S( )	100	250	
	150	18	31.5	1470	0.15	5000	0.8	7.5	–	EEUEB2E151	50	–	
	350	10	10	20	270	0.20	5000	0.6	5.0	5.0	EEUEB2V100( )	200	500
22		12.5	20	350	0.20	5000	0.6	5.0	5.0	EEUEB2V220( )	200	500	
33		16	20	480	0.20	5000	0.8	7.5	7.5	EEUEB2V330S( )	100	250	
47		16	25	640	0.20	5000	0.8	7.5	7.5	EEUEB2V470( )	100	250	
		18	20	640	0.20	5000	0.8	7.5	7.5	EEUEB2V470S( )	100	250	
68		16	31.5	780	0.20	5000	0.8	7.5	–	EEUEB2V680	100	–	
		18	25	780	0.20	5000	0.8	7.5	7.5	EEUEB2V680S( )	100	250	
100		18	31.5	970	0.20	5000	0.8	7.5	–	EEUEB2V101	50	–	
400		10	10	20	250	0.24	5000	0.6	5.0	5.0	EEUEB2G100( )	200	500
		22	12.5	25	410	0.24	5000	0.6	5.0	5.0	EEUEB2G220( )	200	500
	16		20	410	0.24	5000	0.8	7.5	7.5	EEUEB2G220S( )	100	250	
	33	16	25	600	0.24	5000	0.8	7.5	7.5	EEUEB2G330( )	100	250	
		18	20	600	0.24	5000	0.8	7.5	7.5	EEUEB2G330S( )	100	250	
	47	16	31.5	730	0.24	5000	0.8	7.5	–	EEUEB2G470	100	–	
		18	25	730	0.24	5000	0.8	7.5	7.5	EEUEB2G470S( )	100	250	
	450	10	12.5	20	310	0.24	5000	0.6	5.0	5.0	EEUEB2W100( )	200	500
		22	16	25	560	0.24	5000	0.8	7.5	7.5	EEUEB2W220( )	100	250
			18	20	560	0.24	5000	0.8	7.5	7.5	EEUEB2W220S( )	100	250
33		16	31.5	680	0.24	5000	0.8	7.5	–	EEUEB2W330( )	100	–	
		18	25	680	0.24	5000	0.8	7.5	7.5	EEUEB2W330S( )	100	250	
47		18	31.5	850	0.24	5000	0.8	7.5	–	EEUEB2W470	50	–	

· When requesting taped product, please put the letter "B" between the "( )". Lead wire pitch \*B=5 mm, 7.5 mm.

· Please refer to the page of "Taping dimensions".

## Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

- If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.
- The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.
- If you use our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you set up protection circuits and redundancy circuits in order to ensure safety of your equipment.
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- The technical information in this online catalog provides examples of our products' typical operations and application circuits. We do not guarantee the non-infringement of third party's intellectual property rights and we do not grant any license, right, or interest in our intellectual property.
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- The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.
- When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

**We do not take any responsibility for the use of our products outside the scope of the specifications, descriptions, guidelines and precautions described in this online catalog.**

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