ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

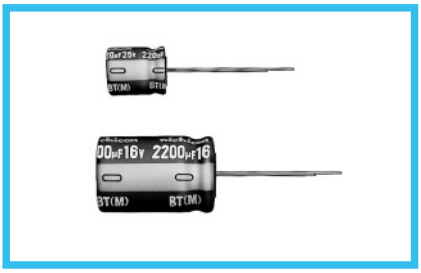
BT

High Temperature Range, For +125°C Use

series

Long Life

Anti-Solvent Feature (Through 100V only)



- Highly dependable reliability withstanding load life of 2000 to 10000 hours at +125°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Compliant to the RoHS directive (2002/95/EC).

BW

High Temperature

BT

■Specifications

Item	Performance Characteristics		
Category Temperature Range	−40 to +125°C (10 to 250V), −25 to +125°C (350 to 450V)		
Rated Voltage Range	10 to 450V		
Rated Capacitance Range	1 to 4700μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	Rated Voltage (V)	10 to 100	160 to 450
	Leakage current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.	CV ≦ 1000 : I = 0.1CV+40 (μA) max. (1 minute's) CV > 1000 : I = 0.04CV+100 (μA) max. (1 minute's)

Tangent of loss angle (tan δ)

Rated voltage (V)	10	16	25	35	50	63	80	100	160 to 250	350 to 450
tan δ (MAX.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.20	0.24

120Hz, 20°C

For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

Stability at Low Temperature

120Hz

Rated voltage (V)		10	16	25	35	50	63	80	100	160 to 250	350 to 450
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	3	2	2	2	2	2	2	2	3	6
	Z−40°C / Z+20°C	4	4	4	4	4	4	4	4	6	–

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for less than 50V (φD = 8 : 2000 hours, φD = 10 : 5000 hours, φD ≧ 12.5 : 10000 hours), 63 to 100V (φD = 8 : 2000 hours, φD = 10 : 3000 hours, φD ≧ 12.5 : 5000 hours), more than 160V (2000 hours) at 125°C, the peak voltage shall not exceed the rated voltage.

Capacitance change	Within ±30% of the initial capacitance value (10 to 100V) Within ±20% of the initial capacitance value (160 to 450V)
Dissipation Factor	300% or less than the initial specified value (10 to 100V) 200% or less than the initial specified value (160 to 450V)
Leakage current	Less than or equal to the initial specified value

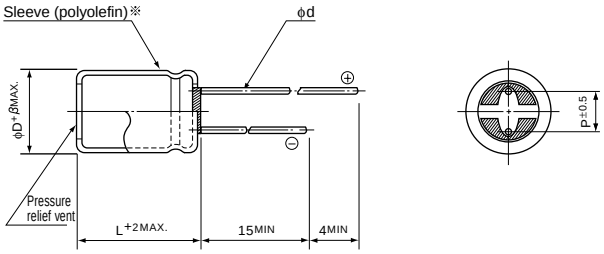
Shelf Life

After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with white color letter on blue sleeve.

■Radial Lead Type



※ P.E.T. sleeve product is also available upon request.

(mm)

φD	8	10	12.5	16	18
β	0.8	0.8	1.0	1.0	1.0
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6*	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

• Please refer to page 20 about the end seal configulation.

Type numbering system (Example : 10V 220μF)

1	2	3	4	5	6	7	8	9	10	11
U	B	T	1	A	2	2	1	M	P	D

- 11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6 7 8: Rated capacitance (220μF)
- 4 5: Rated voltage (10V)
- 3: Series name
- 1: Type

※ Configuration

φ D	Pb-free leadwire Pb-free Polyolefin sleeve
8 · 10	PD
12.5 to 18	HD

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

BT series

■Dimensions

V(Code) / Item / Code / Cap. (μF)	10 (1A)			16 (1C)			25 (1E)			35 (1V)			50 (1H)		
	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
1 010													8×11.5	2.00	35
2.2 2R2													8×11.5	1.80	50
3.3 3R3													8×11.5	1.50	60
4.7 4R7													8×11.5	1.15	85
10 100													8×11.5	0.75	180
22 220													8×11.5	0.50	250
33 330													8×11.5	0.45	300
47 470													8×11.5	0.35	440
100 101				8×11.5	0.32	340	8×11.5	0.13	500	10×12.5	0.15	620	10×12.5	0.18	555
220 221	8×11.5	0.26	340	10×12.5	0.15	620	10×12.5	0.10	680	10×16	0.094	790	10×20	0.098	930
330 331	10×12.5	0.15	620	10×12.5	0.10	680	10×16	0.075	945	10×20	0.075	950	12.5×20	0.070	1330
470 471	10×12.5	0.10	680	10×16	0.075	945	10×20	0.057	1100	12.5×20	0.058	1330	12.5×25	0.055	1650
1000 102	10×20	0.057	1100	12.5×20	0.042	1490	12.5×25	0.033	1750	16×25	0.031	2010	16×31.5	0.031	2430
2200 222	12.5×25	0.033	1750	16×25	0.024	2300	16×31.5	0.020	2710	18×35.5	0.025	2790			
3300 332	16×25	0.024	2300	16×31.5	0.020	2710	18×31.5	0.017	3310						
4700 472	16×31.5	0.020	2710	18×31.5	0.018	3270									

V(Code) / Item / Code / Cap. (μF)	63 (1J)			80 (1K)			100 (2A)		
	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
4.7 4R7							8× 11.5	2.00	130
10 100							8×11.5	1.50	150
22 220	8×11.5	2.00	130	8×11.5	1.50	150	10×12.5	0.80	480
33 330	8×11.5	1.50	150	10×12.5	0.80	480	10×12.5	0.80	480
47 470	10×12.5	0.59	530	10×12.5	0.80	480	10×16	0.55	630
100 101	10×16	0.41	690	10×20	0.39	790	12.5×20	0.25	990
220 221	12.5×20	0.16	1050	12.5×25	0.18	1240	16×25	0.11	1500
330 331	12.5×25	0.12	1290	12.5×31.5	0.16	1390	16×31.5	0.079	1790
470 471	12.5×31.5	0.097	1460	16×25	0.11	1500			

Rated ripple current (mArms) at 125°C 100kHz
Impedance (Ω) MAX. at 20°C 100kHz

●Frequency coefficient of rated ripple current

V	Frequency / CV	120Hz	300Hz	1kHz	10kHz or more
10 to 100	1000 > CV	0.50	0.64	0.83	1.00
	1000 ≦ CV	0.67	0.79	0.91	1.00

V(Code) / Item / Cap. / Code	160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)
4.7 4R7							10 × 20	53	10 × 20	53	10 × 25	58
10 100			10 × 20	78	10 × 20	78	10 × 25	85	10 × 25	86	12.5 × 20	86
22 220	10 × 20	115	10 × 25	126	12.5 × 20	128	12.5 × 25	139	12.5 × 31.5	142	16 × 25	154
33 330	10 × 25	154	12.5 × 20	157	12.5 × 25	171	16 × 25	189	16 × 25	189	16 × 31.5	203
47 470	12.5 × 20	187	12.5 × 25	204	16 × 25	225	16 × 31.5	243	16 × 31.5	243		
68 680	12.5 × 25	245	16 × 20	250	16 × 31.5	292						
100 101	16 × 25	329	16 × 25	329								
150 151	16 × 31.5	434										

Rated ripple current (mArms) at 125°C 120Hz

●Frequency coefficient of rated ripple current

V	Frequency / Cap. (μF)	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz
160 to 450	4.7 to 33	0.75	1.00	1.25	1.50	1.75	1.80
	47 to 150	0.80	1.00	1.15	1.30	1.40	1.50