ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

BT series

High Temperature Range, For +125°C Use

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.
- Adapted to the RoHS directive (2002/95/EC).

BW
High Temperature
BT

■Specifications

Item	Performance Characteristics
Category Temperature Range	–40 ~ +125°C (10 ~ 250V), –25 ~ +125°C (350 ~ 450V)
Rated Voltage Range	10 ~ 450V
Rated Capacitance Range	1 ~ 4700μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	Rated Voltage (V): 10 ~ 100 / 160 ~ 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)

tan δ

Rated voltage (V)	10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 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 ~ 250	350 ~ 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

After an application of D.C. bias voltage plus the rated ripple current for less than 50V (φD = 8 : 2000 hours, φD = 10 : 5000 hours, φD ≧ 12.5 : 10000 hours), 63~100V (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 D.C. voltage, capacitors meet the characteristics requirements listed at right.

Capacitance change	Within ±30% of initial value (10 ~ 100V) Within ±20% of initial value (160 ~ 450V)
Dissipation Factor	300% or less of initial specified value (10 ~ 100V) 200% or less of initial specified value (160 ~ 450V)
Leakage current	Initial specified value or less

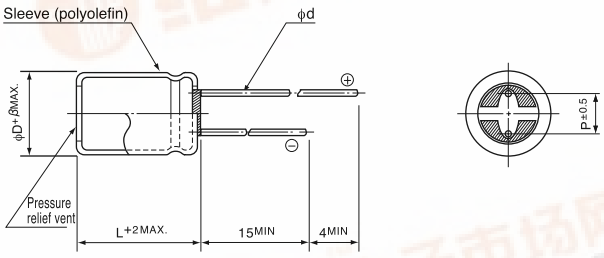
Shelf Life

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

Marking

Printed with white color letter on blue sleeve.

■Radial Lead Type



(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 21 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

Configuration※
Capacitance tolerance (±20%)
Rated Capacitance (220μF)
Rated voltage (10V)
Series name
Type

※ Configuration

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

Please refer to page 21, 22, 23 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

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■Dimensions

V(Code) / Item / Cap. (μF) / Code	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 / Cap. (μF) / Code	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 (mArms) at 125°C 100kHz
Impedance (Ω) MAX. at 20°C 100kHz

● Frequency coefficient of rated ripple current

V	CV \ Frequency	120Hz	300Hz	1kHz	10kHz ~
10 ~ 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 (mArms) at 125°C 120Hz

● Frequency coefficient of rated ripple current

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