

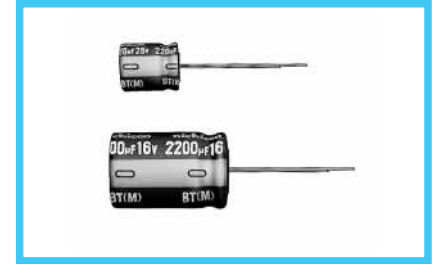
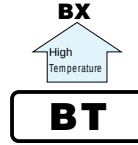
BT

High Temperature Range, For +125°C Use
series



Long Life
Anti-Solvent
Feature
(Through
100V only)

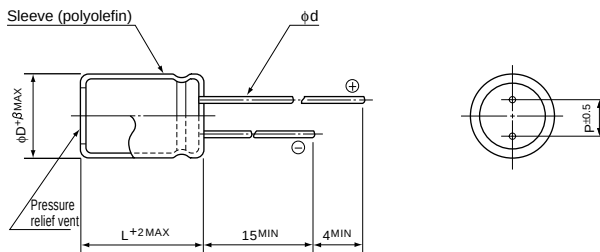
- Highly dependable reliability withstanding load life of 2000 to 10000 hours at +125°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Adapted to the RoHS directive (2002/95/EC).



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	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz, Temperature : 20°C											
	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	
Stability at Low Temperature	Measurement frequency : 120Hz											
	Rated voltage (V)		10	16	25	35	50	63	80	100	160 ~ 250	350 ~ 450
	Impedance ratio	Z-25°C / Z+20°C	3	2	2	2	2	2	2	2	3	6
	ZT / Z20 (MAX.)	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 leaving capacitors under no load at 125°C for 1000 hours, they meet the requirements for endurance characteristics listed above.											
Marking	Printed with white color letter on blue sleeve.											

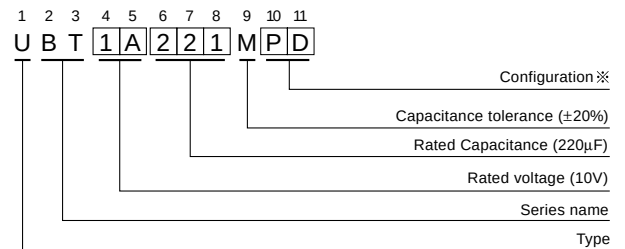
Radial Lead Type



	8	10	12.5	16	18
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. φd = 0.8mm.

Type numbering system (Example : 10V 220µF)



※ 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.

● Dimension table in next page.

■ Dimensions

Cap. (μF)	V(Code) Item Code	10 (1A)			16 (1C)			25 (1E)			35 (1V)			50 (1H)		
		Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)
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									

Cap. (μF)	V(Code) Item Code	63 (1J)			80 (1K)			100 (2A)		
		Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mA rms)
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 (mA rms) at 125°C 10kHz ~ 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

Cap. (μF)	V(Code) Item Code	160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
		Case size φD × L (mm)	Rated ripple (mA rms)	Case size φD × L (mm)	Rated ripple (mA rms)	Case size φD × L (mm)	Rated ripple (mA rms)	Case size φD × L (mm)	Rated ripple (mA rms)	Case size φD × L (mm)	Rated ripple (mA rms)	Case size φD × L (mm)	Rated ripple (mA rms)
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 (mA rms) 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