ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

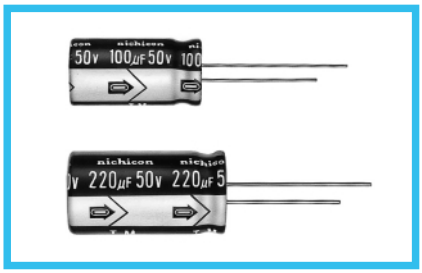
TM Timer Circuit Use series

Low Leakage Current | Anti-Solvent Feature

- Ideally suited for timer circuits.
- Excellent leakage current stability, even subjected to load or no load at high temperature for a long time.
- Compliant to the RoHS directive (2002/95/EC).

Products which are scheduled to be discontinued.
Not recommended for new designs

KL → High Stability → TM



■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	10 to 50V
Rated Capacitance Range	1 to 470μF
Capacitance Tolerance	±20% (M) (±10% (K) semi-standard) at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage, leakage current is 0.001CV+1 (μA) or less.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	10	16	25	50
tan δ (MAX.)	0.17	0.13	0.10	0.08

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		10	16	25	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	2	2	1.5	1.5
	Z−40°C / Z+20°C	4	3	2	2

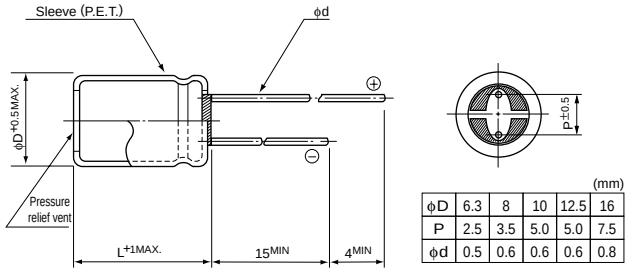
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.

Capacitance change	Within ±10% of the initial capacitance value
tan δ	150% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 85°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 black sleeve.

■Radial Lead Type



(mm)

φD	6.3	8	10	12.5	16
P	2.5	3.5	5.0	5.0	7.5
φd	0.5	0.6	0.6	0.6	0.8

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

Type numbering system (Example : 10V 33μF)

1	2	3	4	5	6	7	8	9	10	11
U	T	M	1	A	3	3	0	M	P	D

- 10 Configuration ※
- 9 Capacitance tolerance (M : ±20%, K : ±10%)
- 6 7 8 Rated capacitance (33μF)
- 4 5 Rated voltage (10V)
- 3 Series name
- 1 2 Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
6.3	ED
8 · 10	PD
12.5 · 16	HD

■Dimensions

φD×L (mm)

Cap. (μF) \ V	Code	10	16	25	50
		1A	1C	1E	1H
1	010				6.3×11
2.2	2R2				6.3×11
3.3	3R3			6.3×11	6.3×11
4.7	4R7			6.3×11	8×11.5
10	100		6.3×11	8×11.5	10×12.5
22	220	6.3×11	8×11.5	10×12.5	10×16
33	330	8×11.5	10×12.5	10×16	10×20
47	470	8×11.5	10×12.5	10×16	12.5×20
100	101	10×16	10×20	12.5×20	12.5×25
220	221	10×20	12.5×25	16×25	16×31.5
330	331	12.5×25	16×25	16×25	
470	471	12.5×25	16×25	16×31.5	

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