SEA Series

Features

- 85℃, 2,000 hours assured, standard miniature type with 7 ~ 9mm height for compact circuits
- RoHS Compliance

Sleeve & Marking Color: Blue & Black

Specifications

Items	Performance
Category Temperature Range	-40℃ ~ +85℃
Capacitance Tolerance	±20% (at 120Hz, 20℃)
Leakage Current (at 20℃)	I = 0.01CV or 3 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF, V = rated DC working voltage in V
Tanδ (at 120Hz, 20℃)	
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.
Endurance	
Shelf Life Test	Test time: 500 hours; other items are the same as those for the Endurance.
Ripple Current and Frequency Multipliers	

Tanδ (at 120Hz, 20℃)

Rated Voltage	4	6.3	10	16	25	35	50	63
Tanδ (max)	0.35	0.23	0.20	0.16	0.14	0.12	0.10	0.10

Low Temperature Characteristics (at 120Hz)

Rated Voltage		4	6.3	10	16	25	35	50	63
Impedance Ratio	Z(-25℃)/Z(+20℃)	7	4	3	3	2	2	2	2
	Z(-40℃)/Z(+20℃)	14	10	8	6	4	4	4	4

Endurance

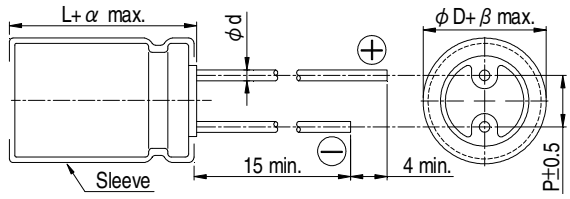
Test Time	2,000 Hrs
Capacitance Change	Within ±20% of initial value
Tanδ	Less than 200% of specified value
Leakage Current	Within specified value

* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied with rated ripple current for 2,000 hours at 85℃.

Ripple Current and Frequency Multipliers

Cap.(μF) \ Freq.(Hz)	60 (50)	120	500	1k	10k up
Under 47	0.70	1.00	1.20	1.30	1.45
100 to 1,000	0.80	1.00	1.10	1.15	1.20

Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

φD	4	5	6.3	8	10
P	1.5	2.0	2.5	3.5	5.0
φd	0.45	0.5			0.6
α	1.0				1.5
β	0.5				

Dimension and Permissible Ripple Current

Dimension: φD × L(mm)
Ripple Current: mA/rms at 120 Hz, 85℃

μF \ V_{DC}	Contents	4V (0G)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)	
		φD×L	mA	φD×L	mA	φD×L	mA	φD×L	mA	φD×L	mA	φD×L	mA	φD×L	mA	φD×L	mA
1	010													4×7	10	4×7	11
2.2	2R2													4×7	15	4×7	17
3.3	3R3													4×7	18	4×7	21
4.7	4R7											4×7	22	5×7*	23	5×7*	26
10	100							4×7	25	4×7	26	5×7*	30	6.3×7*	34	6.3×7*	40
22	220			4×7	31	4×7	32	5×7*	39	5×7*	41	6.3×7*	47	6.3×7	53	8×7*	70
33	330	4×7	32	4×7	32	4×7	35	5×7	43	6.3×7	53	8×7*	71	8×7*	76	8×7	80
47	470	4×7	38	4×7	38	5×7*	47	6.3×7*	59	6.3×7	65	8×7*	83	8×7	85	8×7	95
100	101	5×7	61	6.3×7*	75	6.3×7	80	6.3×7	90	8×7	125	8×7	115	8×9	130	10×9	170
220	221	6.3×7	90	6.3×7	99	8×7	140	8×7	146	8×9	190	10×9	215				
330	331	8×7	129	8×7	156	8×7	165	8×9	185	10×9	265						
470	471	8×7	154	8×7	175	8×9	215	10×9	255								
1,000	102	8×9	200	10×9	205												

Note: Case size in mark of " * " is available to product down size.

Part Numbering System

SEA Series	470μF	±20%	6.3V	Bulk Package	Gas Type	8φ×7L	Pb-free and PET sleeve
SEA	**471**	**M**	**0J**	**BK**	**-**	**0807**	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration & Package	Rubber Type	Case Size	Lead Wire and Sleeve type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.

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