ORE Series

Features
- 105℃, 5,000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS compliant

Marking color: Blue

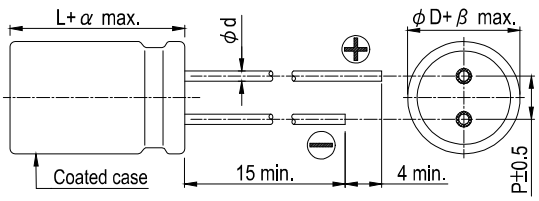
Specifications

Items	Performance
Category Temperature Range	-55℃ ~ +105℃
Capacitance Tolerance	± 20% (at 120 Hz, 20℃)
Leakage Current (at 20℃)*	Rated voltage applied, after 2 minutes at 20℃. See Standard Ratings
Tanδ (at 120 Hz, 20℃)	See Standard Ratings
ESR (at 100k ~ 300k Hz, 20℃)	See Standard Ratings
Endurance	Test Time: 5,000 Hrs Capacitance Change: Within ± 20% of initial value Tanδ: Less than 150% of specified value ESR: Less than 150% 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 for 5,000 hours at 105℃.
Moisture Resistance	Test Time: 1,000 Hrs Capacitance Change: Within ± 20% of initial value Tanδ: Less than 150% of specified value ESR: Less than 150% of specified value Leakage Current: Within specified value * The above specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them at 60℃, 90 ~ 95% RH for 1,000 hours. Leakage current should be tested after voltage treatment*.
Resistance to Soldering Heat * (Please refer to page 18 for soldering conditions)	Capacitance Change: Within ± 10% of initial value Tanδ: Within specified value ESR: Within specified value Leakage Current: Within specified value
Ripple Current and Frequency Multipliers	Frequency (Hz): 120 ≦ f < 1k / 1k ≦ f < 10k / 10k ≦ f < 100k / 100k ≦ f < 500k Multiplier: 0.05 / 0.3 / 0.7 / 1.0

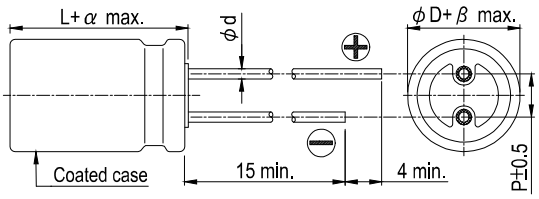
* For any doubt about measured values, measure the leakage current again after the following voltage treatment.
Voltage treatment: DC rated voltage is applied to the capacitors for 2 hours at 105 ℃.

Diagram of Dimensions

5φ, 6.3φ and 8φ × 6.5 ~ 8L



8φ×12L and 10φ×12L

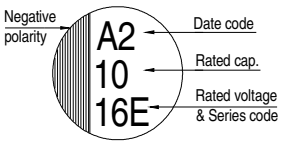


Lead Spacing and Diameter Unit: mm

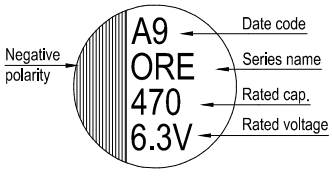
φD	5	6.3	6.3	8	8	8	10
L	8	5.5	8	6.5	8	12	12
P	2.0	2.5		3.5			5.0
φd	0.5	0.45	0.6				
α	1.0	0.5	1.0	0.5	1.0		
β	0.5						

Marking

φD = 5 ~ 6.3



φD = 8 ~ 10



Dimension: φD×L(mm)

Standard Ratings

Ripple Current: mA/rms at 100k Hz, 105℃

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μF)	Size φD×L(mm)	Tanδ (120 Hz, 20℃)	L C (μA)	E S R (mΩ/at 100k ~ 300k Hz, 20℃ max.)	Rated R. C. (mA/rms at 100k Hz, 105℃)
2.5V (0E)	2.9	100	5 × 8	0.10	500	7	4,180
		330	5 × 8			7	4,180
			6.3 × 8			5	5,900
		390	6.3 × 5.5	0.12		10	3,900
		470	5 × 8	0.10		7	4,180
			6.3 × 8			5	5,900
		560	5 × 8			7	4,180
			6.3 × 5.5	0.12		10	3,900
			6.3 × 8	0.10		5	5,900
			8 × 8		280	8	4,700
		820	6.3 × 8		500	5	5,900
			8 × 8			7	6,100
			8 × 12				
		1,000	8 × 8				
		2,700	10 × 12		1,350	10	5,560
4V(0G)	4.6	560	6.3 × 8	0.10	500	7	5,600
			8 × 8				6,100
			8 × 12				
		680	8 × 12		544		
		820	10 × 12		656		6,640
6.3V (0J)	7.2	470	6.3 × 8	0.10	592	7	5,600
			8 × 8			8	5,700
			8 × 12			8	5,700
		560	6.3 × 8		706	7	5,600
			8 × 8		706		6,100
		680	10 × 12		857		6,640
		1,500	10 × 12		1,890	10	5,560
10V(1A)	12.0	270	8 × 6.5	0.12	500	22	3,220
16V (1C)	18.0	100	6.3 × 5.5	0.10	320	24	2,490
			6.3 × 8		480	10	4,680
		150	6.3 × 5.5		500	24	2,490
			8 × 6.5	0.12	500	22	3,220
		180	8 × 8	0.10	576	10	5,000
			8 × 12		576	16	4,360
		220	8 × 6.5		500	13	4,150
		270	6.3 × 8		864	10	5,080
			8 × 6.5			13	4,150
			8 × 8			10	5,000
			8 × 12			11	5,000
		470	8 × 8	0.12	1,504	8	5,400
			10 × 12	0.10	1,504	10	6,100
		560	8 × 12	0.12	1,792	14	4,950
		1,000	10 × 12	0.12	3,200	12	5,400

Dimension: φD×L(mm)

Standard Ratings

Ripple Current: mA/rms at 100k Hz, 105℃

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μF)	Size φD×L(mm)	Tanδ (120 Hz, 20℃)	L C (μA)	E S R (mΩ/at 100k ~ 300k Hz, 20℃ max.)	Rated R. C. (mA/rms at 100k Hz, 105℃)
20V(1D)	23.0	120	6.3 × 5.5	0.12	480	25	3,200
		180	8 × 6.5		720	25	3,200
		390	8 × 12		1,560	14	4,970
		560	10 × 12		2,240	12	5,600
25V(1E)	29.0	56	6.3 × 5.5	0.12	280	30	2,800
		82	8 × 6.5		410	28	3,000
		180	8 × 12		900	16	4,650
		220	8 × 12		1,100	16	4,650
		330	10 × 12		1,650	14	5,000
		390	10 × 12		1,950	14	5,000
35V(1V)	40.0	22	6.3 × 5.5	0.12	154	35	2,600
		39	8 × 6.5		273	30	2,800
		82	8 × 12		574	20	4,000
		120	10 × 12		840	18	4,400

Part Numbering System

ORE Series	470μF	± 20%	2.5V	Bulk Package	Gas Type	6.3φ×8L	General Purpose
ORE	**471**	**M**	**0E**	**BK**	**-**	**0608**	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration and Package	Rubber Type	Case Size	Application

Note: For more details, please refer to “Part Numbering System” on page 20.