

●大容量，極低阻抗品  
**OPBシリーズ**

JIS C 5101  
CE-04

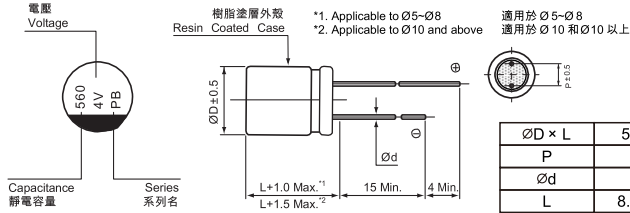
●High Capacitance, Ultra-low ESR  
TYPE **OPB**

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Higher capacitance, ultra-low ESR, high ripple current
- Load life of 2000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



ØD × L	5×8/9	5×12	5.5×9	6.3×8/9	6.3×11/12	8×8/9	8×11/12	10×12/16
P	2.0	2.0	2.0	2.5	2.5	3.5	3.5	5.0
Ød	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
L	8.0/9.0	12.0	9.0	8.0/9.0	11.0/12.0	8.0/9.0	11.0/12.0	12.0/16.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$ ZT/Z20 (max)										
耐久性	LOAD LIFE TEST	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table> <p>After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <td>Frequency(Hz)</td> <td>120Hz ≤ f ≤ 1KHz</td> <td>1KHz ≤ f ≤ 10KHz</td> <td>10KHz ≤ f ≤ 100KHz</td> <td>100KHz ≤ f ≤ 300KHz</td> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

■定格リプル電流補正係数

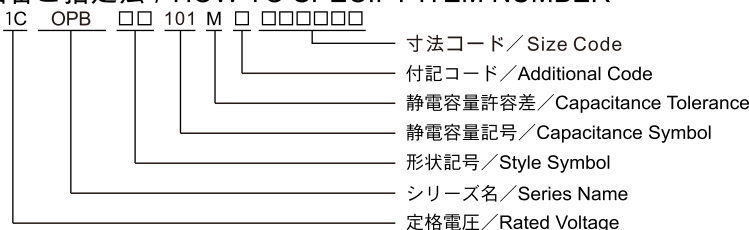
リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(µF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



**■ 寸法表 / CASE SIZE TABLE**
**■ Impedance [Max. Value Ω] at 20°C 100kHz**
**■ Ripple Current [Max. value mA] at 105°C 100kHz**

WV (V) Parameter Cap. (μF)		2.5 (0E)					4 (0G)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
560	561	6.3 × 8	0.08	280	7	5900	6.3 × 8	0.08	448	9	5900
680	681						6.3 × 8	0.08	544	9	5900
820	821	6.3 × 8 (8 × 8)	0.08 (0.08)	410 (410)	7 (7)	5900 (5900)	6.3 × 11	0.08	656	7	6150
1000	102	6.3 × 8	0.08	500	7	5900					
1200	122						6.3 × 11	0.08	960	7	6150
1500	152	8 × 8	0.08	750	7	6100					

WV (V) Parameter Cap. (μF)		6.3 (0J)					10 (1A)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
270	271	5 × 8	0.08	340	10	3200	6.3 × 8	0.08	540	10	4100
330	331	5 × 8	0.08	415	10	3200	6.3 × 8 (8 × 8)	0.08 (0.08)	660 (660)	12 (12)	4500 (4620)
		(6.3 × 5)	(0.08)	(415)	(9)	(4800)					
		(6.3 × 6)	(0.08)	(415)	(9)	(4800)					
390	391	6.3 × 8 (8 × 8)	0.08 (0.08)	491 (491)	12 (12)	3100 (3300)					
		5 × 9 (6.3 × 8)	0.08 (0.08)	592 (592)	12 (9)	3600 (5900)	6.3 × 8 (8 × 8)	0.08 (0.08)	940 (940)	9 (10)	5400 (5600)
560	561	6.3 × 8 (8 × 8)	0.08 (0.08)	705 (705)	9 (8)	5900 (5900)	8 × 8	0.08	1120	9	5600
680	681	5 × 12 (6.3 × 8)	0.08 (0.08)	857 (857)	15 (9)	5500 (5900)	6 × 12 (8 × 8) (8 × 11)	0.08 (0.08) (0.08)	1360 (1360) (1360)	13 (9) (9)	3650 (5600) (6100)
820	821	6.3 × 9 (6.3 × 11) (8 × 8) (8 × 11)	0.08 (0.08) (0.08) (0.08)	1033 (1033) (1033) (1033)	9 (7) (9) (9)	5900 (6150) (5900) (6150)	8 × 11	0.08	1640	9	6100
1000	102	6 × 11 (8 × 8) (8 × 11)	0.08 (0.08) (0.08)	1260 (1260) (1260)	12 (10) (9)	6150 (6000) (6150)	8 × 11	0.08	2000	9	6200
1200	122	6.3 × 12 (8 × 12)	0.08 (0.08)	1512 (1512)	9 (9)	6100 (6150)					
1500	152	8 × 12 (10 × 12)	0.08 (0.08)	1890 (1890)	9 (9)	6150 (6200)	8 × 12 (10 × 12)	0.08 (0.08)	3000 (3000)	10 (9)	5700 (6100)
2200	222	10 × 12	0.08	2772	9	6200	10 × 12	0.08	4400	9	6500

WV (V) Parameter Cap. (μF)		7.5 (0T)					12 (1R)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
330	331						5 × 9 (5.5 × 9) (6.3 × 8)	0.08 (0.08) (0.08)	792 (792) (792)	14 (14) (12)	3800 (3800) (2690)
500	501	5 × 9 (6.3 × 9)	0.08 (0.08)	750 (750)	11 (9)	3800 (5900)					
560	561	5 × 9 (6.3 × 9)	0.08 (0.08)	840 (840)	11 (9)	4000 (5900)					
680	681	6.3 × 9	0.08	1020	9	5900					
820	821	6.3 × 9	0.08	1230	9	5900					

■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz

■Ripple Current [Max. value mA] at 105°C 100kHz

WV (V)		16 (1C)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101	6.3 × 7	0.08	320	16	3250
270	271	6 × 8	0.08	864	10	4100
		(8 × 8)	(0.08)	(864)	(10)	(5000)
		(8 × 11)	(0.08)	(864)	(10)	(5000)
330	331	6.3 × 9	0.08	1056	12	4500
		(6.3 × 11)	(0.08)	(1056)	(12)	(4300)
		(8 × 8)	(0.08)	(1056)	(10)	(5000)
390	391	8 × 8	0.08	1248	10	5000
		6.3 × 11	0.08	1504	12	4100
		(6.3 × 12)	(0.08)	(1504)	(10)	(5200)
470	471	(8 × 8)	(0.08)	(1504)	(13)	(5000)
		(8 × 11)	(0.08)	(1504)	(10)	(5400)
		(10 × 12)	(0.08)	(1504)	(9)	(5800)
560	561	8 × 9	0.08	1792	12	5200
		(8 × 11)	(0.08)	(1792)	(10)	(5400)
680	681	8 × 11	0.08	2176	10	5400
820	821	8 × 12	0.08	2624	10	5700
		(10 × 12)	(0.08)	(2624)	(10)	(5800)
1000	102	8 × 12	0.08	3200	10	6000
		(10 × 12)	(0.08)	(3200)	(9)	(6500)
1200	122	10 × 12	0.08	3840	9	6500
1500	152	10 × 12	0.08	4800	9	6500
		(10 × 16)	(0.08)	(4800)	(9)	(6500)