

●125°C高温，高可靠品
HPRシリーズ

JIS C 5101
CE-04

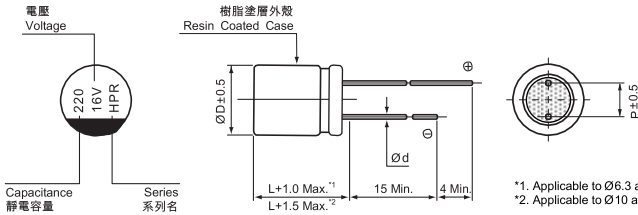
●125°C High Temperature, High Reliability
TYPE **HPR**

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■FEATURES

- Operating with wide temperature range -55~+125°C
- High reliability & high voltage are realized by hybrid electrolyte
- Load life of 4000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



ØD × L	6.3 × 7	6.3 × 11.5	8 × 12	10 × 12
P	2.5	2.5	3.5	5.0
Ød	0.5	0.6	0.6	0.6
L	7.0	11.5	12.0	12.0

*1. Applicable to Ø6.3 and Ø8
*2. Applicable to Ø10 and above
適用於Ø6.3和Ø8
適用於Ø10和Ø10以上

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +125°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120kHz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	Leakage current ≤0.01CV (after 2 minutes application of rated voltage at 20°C) C: Nominal capacitance (µF) V: Rated voltage (V)										
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 $Z(-25°C)/Z(20°C) \leq 1.5$ $Z(-55°C)/Z(20°C) \leq 2.0$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table> <p>After 4000 hours application of the rated voltage at 125 °C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±30% of initial value	Dissipation Factor	200% or less of initial specified value	ESR	200% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±30% of initial value										
Dissipation Factor	200% or less of initial specified value											
ESR	200% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for Endurance characteristics listed above.										
定格リップル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1kHz</th> <th>1kHz ≤ f ≤ 10kHz</th> <th>10kHz ≤ f ≤ 100kHz</th> <th>100kHz ≤ f ≤ 300kHz</th> </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								

■定格リップル電流補正係数

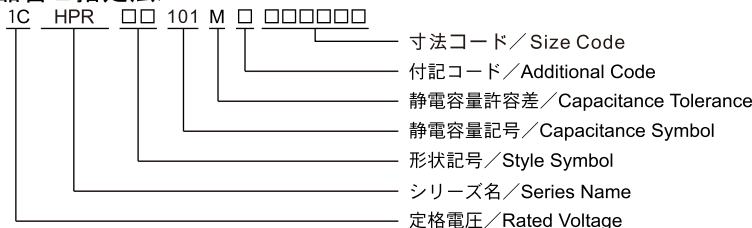
リップル周波数が標準品一覽表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

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)		16 (1C)					25 (1E)				
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) 125°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
100	101						6.3 × 7	0.14	25	30	1400
150	151						6.3 × 7	0.14	37.5	30	1400
220	221	6.3 × 7	0.16	35.2	27	1450	6.3 × 11.5	0.14	55	27	1650
330	331	6.3 × 11.5	0.16	52.8	25	1600					
470	471						8 × 12	0.14	117.5	23	1900
680	681						10 × 12	0.14	170	15	2700
820	821	8 × 12	0.16	131.2	20	1850					
1500	152	10 × 12	0.16	240	14	3000					

WV (V)		35 (1V)					50 (1H)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
33	330						6.3 × 7	0.10	16.5	40	1100
47	470						6.3 × 11.5	0.10	23.5	36	1250
100	101	6.3 × 7	0.12	35	35	1400					
120	121						8 × 12	0.10	60	28	1400
150	151	6.3 × 11.5	0.12	52.5	32	1650					
220	221	8 × 12	0.12	77	24	1800	10 × 12	0.10	110	23	1800
470	471	10 × 12	0.12	164.5	16	2600					

WV (V)		63 (1J)					80 (1K)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
22	220	6.3 × 7	0.08	13.9	80	900					
33	330	6.3 × 11.5	0.08	20.8	70	1000					
47	470						8 × 12	0.08	37.6	42	1200
82	820						10 × 12	0.08	65.6	33	1350
100	101	8 × 12	0.08	63	36	1300					
150	151	10 × 12	0.08	94.5	26	1600					

WV (V)		100 (2A)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
47	470	10 × 12	0.08	47	60	1050