

## NP Bi-Polar 双极性品

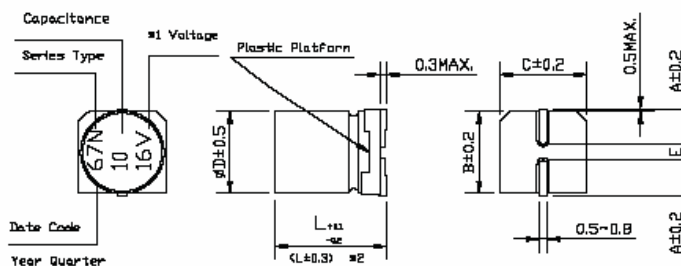
- Bi-polar with general temperature 85°C.
- Lead-free reflow soldering is available subject to customers' request.



### ◆ Specifications 特性

Items 项目	Performance Characteristics 主要特性																					
Operating Temperature Range 使用温度范围	-40~+85°C																					
Voltage Range 额定工作电压范围	6.3~50V																					
Capacitance Range 静电容量范围	0.1~100 μF																					
Capacitance Tolerance 静电容量允许偏差	±20% at 120 Hz, 20°C																					
Leakage Current 漏电流	After 2 minutes' application of rated voltage, leakage current is not more than 0.05CV or 10(μA), whichever is greater. 施加额定工作电压 2 分钟, LC≤0.05CV 或 10(μA), 取较大值。																					
Tan δ 损耗角正切	Measurement frequency 测试频率: 120Hz, Temperature 温度: 20°C <table border="1"> <tr> <td>Rated voltage(V.DC) 额定工作电压</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Tan δ 损耗角正切 (max)</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.17</td> <td>0.15</td> <td>0.15</td> </tr> </table>	Rated voltage(V.DC) 额定工作电压	6.3	10	16	25	35	50	Tan δ 损耗角正切 (max)	0.24	0.20	0.17	0.17	0.15	0.15							
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Stability at Low Temperature 低温特性	Measurement frequency 测试频率: 120Hz <table border="1"> <tr> <td>Rated voltage(V.DC) 额定工作电压</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio 阻抗比</td> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ZT/Z20 (max)</td> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> </tr> </table>	Rated voltage(V.DC) 额定工作电压	6.3	10	16	25	35	50	Impedance ratio 阻抗比	Z-25°C/Z+20°C	4	3	2	2	2	ZT/Z20 (max)	Z-40°C/Z+20°C	8	6	4	4	3
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Load Life 高温负荷特性	After 1000 hours' application of rated voltage at 85°C with the polarity inverted every 250 hours, capacitors meet the characteristics requirements listed at right 在 85°C 环境中施加额定工作电压 1000 小时 (每 250 小时电源转换一次极性) 后, 电容器的特性符合右表的要求 <table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ±20% of the initial value 初始值的±20%以内</td> </tr> <tr> <td>Tan δ 损耗角正切</td> <td>200% or less of the initial specified value 不大于规范值的 200%</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>Initial specified value or less 不大于规范值</td> </tr> </table>	Capacitance Change 静电容量变化率	Within ±20% of the initial value 初始值的±20%以内	Tan δ 损耗角正切	200% or less of the initial specified value 不大于规范值的 200%	Leakage Current 漏电流	Initial specified value or less 不大于规范值															
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Shelf Life 高温储存特性	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在 85°C 环境中无负荷放置 1000 小时后, 电容器的特性符合高温负荷特性中所列的规定值。																					
Resistance to Soldering Heat 耐焊接热特性	After reflow soldering and restored at room temperature, they meet the characteristics requirements listed at right. 经过回流焊并冷却至室温后, 电容器的特性符合右表的要求。 <table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ±10% of the initial value 初始值的±10%以内</td> </tr> <tr> <td>Tan δ 损耗角正切</td> <td>Initial specified value or less 不大于规范值</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>Initial specified value or less 不大于规范值</td> </tr> </table>	Capacitance Change 静电容量变化率	Within ±10% of the initial value 初始值的±10%以内	Tan δ 损耗角正切	Initial specified value or less 不大于规范值	Leakage Current 漏电流	Initial specified value or less 不大于规范值															
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Applicable Standards 适用标准	JIS C-5141 and JIS C-5102																					

### ◆ Dimensions & Marking 尺寸及印字



	(mm)			
DxL	Φ4x5.4	Φ5x5.4	Φ6.3x5.4	Φ6.3x7.7
A	1.8	2.1	2.4	2.4
B	4.3	5.3	6.6	6.6
C	4.3	5.3	6.6	6.6
E ± 0.2	1.0	1.3	2.2	2.2
L	5.4	5.4	5.4	7.7

\*1 Voltage mark for 6.3V is [6V]

\*2 Applicable to 6.3x7.7

Re: Date code and series type — 1<sup>st</sup> digit for Year; 2<sup>nd</sup> digit for Quarter, 4 quarter codes in one year are 1, 4, 7, 0;  
3<sup>rd</sup> character for Series; NP Series = N.

**NP** Series

◆ **Standard size & Maximum permissible ripple current** 规格壳号及最大允许纹波电流

WV 电压 容量 Cap. (μF)		6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											4×5.4	1.0
0.22	R22											4×5.4	2.0
0.33	R33											4×5.4	2.8
0.47	R47											4×5.4	4.0
1	010											4×5.4	8.4
2.2	2R2									4×5.4	8.4	5×5.4	13
3.3	3R3							5×5.4	12	5×5.4	16	5×5.4	17
4.7	4R7					4×5.4	12	5×5.4	16	5×5.4	18	6.3×5.4	20
10	100			4×5.4	17	5×5.4	23	6.3×5.4	27	6.3×5.4	29	6.3×7.7	36
22	220	5×5.4	28	6.3×5.4	33	6.3×5.4	37	6.3×7.7	50	6.3×7.7	54		
33	330	6.3×5.4	37	6.3×5.4	41	6.3×5.4	49	6.3×7.7	61				
47	470	6.3×5.4	45	6.3×7.7	61	6.3×7.7	75						
100	101	6.3×7.7	82	6.3×7.7	86							Case Size	Ripple Current

Ripple Current (mA rms) at 85°C 120Hz

◆ **Frequency Coefficient Factor of Rated Ripple Current** 纹波电流频率补偿系数

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	0.70	1.00	1.17	1.36	1.50