

# UBY

High Temperature Range,  
For +125°C or 135°C Use



- Higher capacitance and higher ripple current than UBT and UBW.
- Ideal for automobile control circuits such as electric power steering and direct injection engine drive.
- Compliant to the RoHS directive(2011/65/EU).
- AEC-Q200 compliant. Please contact us for details.



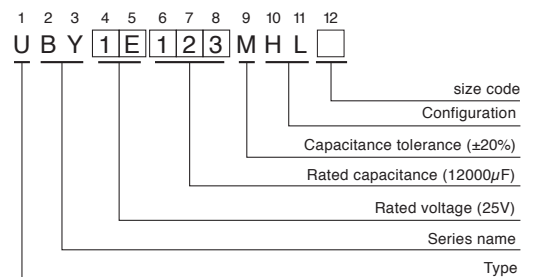
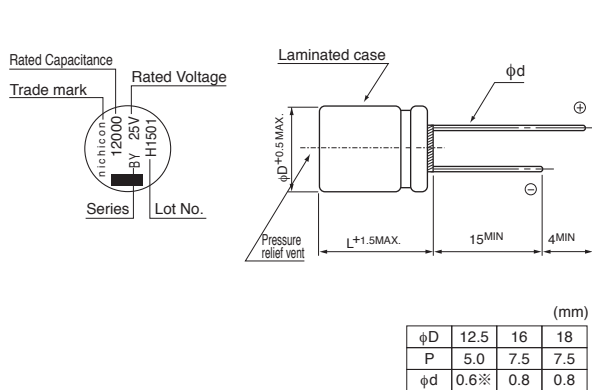
## Specifications

Item	Performance Characteristics																																			
Category Temperature Range	-40 to +135°C																																			
Rated Voltage Range	25 to 100V																																			
Rated Capacitance Range	160 to 12000μF																																			
Capacitance Tolerance	±20% at 120Hz, 20°C																																			
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV (μA)																																			
Tangent of loss angle (tan δ)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> </tr> </table> <p>120Hz, 20°C</p> <p>For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.</p>	Rated voltage (V)	25	35	50	63	80	100	tan δ (MAX.)	0.14	0.12	0.10	0.10	0.08	0.08																					
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Stability at Low Temperature	<table border="1"> <tr> <td colspan="2">Rated voltage (V)</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td rowspan="2">Impedance ratio ZT / Z20 (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> </tr> </table> <p>120Hz</p>	Rated voltage (V)		25	35	50	63	80	100	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	2	2	2	2	2	2	Z-40°C / Z+20°C	4	4	4	4	4	4												
Rated voltage (V)		25	35	50	63	80	100																													
Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	2	2	2	2	2	2																													
	Z-40°C / Z+20°C	4	4	4	4	4	4																													
Endurance	<table border="1"> <tr> <td>Rated voltage (V)</td> <td colspan="3">25 to 50V</td> <td colspan="3">63 to 100V</td> </tr> <tr> <td>—</td> <td colspan="3">The specifications listed below shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours at 125°C or 135°C, the peak voltage shall not exceed the rated voltage.</td> <td colspan="3">The specifications listed below shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours at 125°C or 2000 hours at 135°C, the peak voltage shall not exceed the rated voltage.</td> </tr> <tr> <td>Capacitance change</td> <td colspan="3">Within ±30% of the initial capacitance value</td> <td colspan="3"></td> </tr> <tr> <td>tan δ</td> <td colspan="3">300% or less than the initial specified value</td> <td colspan="3"></td> </tr> <tr> <td>Leakage current</td> <td colspan="3">Less than or equal to the initial specified value</td> <td colspan="3"></td> </tr> </table>	Rated voltage (V)	25 to 50V			63 to 100V			—	The specifications listed below shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours at 125°C or 135°C, the peak voltage shall not exceed the rated voltage.			The specifications listed below shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 3000 hours at 125°C or 2000 hours at 135°C, the peak voltage shall not exceed the rated voltage.			Capacitance change	Within ±30% of the initial capacitance value						tan δ	300% or less than the initial specified value						Leakage current	Less than or equal to the initial specified value					
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Capacitance change	Within ±30% of the initial capacitance value																																			
tan δ	300% or less than the initial specified value																																			
Leakage current	Less than or equal to the initial specified value																																			
Shelf Life	After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.																																			
Marking	Black print on the case top.																																			

The UBY series places emphasis on high ripple current, as a result the lifetime calculation is different than other series. Please contact Nichicon for details.

## Radial Lead Type

Type numbering system (Example : 25V 12000μF)



Please refer to page 20, 21, 22 about the formed or taped product spec. Please refer to page 4 for the minimum order quantity.

• Dimension table in next page.

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■ Dimensions

V (Code) Item Cap. (μF) Code		25(1E)					35(1V)				
		Case size φD × L (mm)	ESR (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	ESR (Ω) MAX.		Rated ripple (mArms)	
			20°C /100kHz	-40°C /100kHz	125°C /100kHz	135°C /100kHz		20°C /100kHz	-40°C /100kHz	125°C /100kHz	135°C /100kHz
1300	132					12.5 × 20	0.042	0.48	2760	1690	
1800	182					12.5 × 25	0.033	0.30	3480	2010	
2000	202	12.5 × 20	0.042	0.48	2760	1690					
2200	222					12.5 × 31.5	0.028	0.24	4490	2900	
						▲16 × 20	0.031	0.27	3040	1860	
2700	272					12.5 × 35.5	0.025	0.21	5140	3190	
						▲18 × 20	0.030	0.22	3250	1870	
3000	302	12.5 × 25	0.033	0.30	3480	2010	16 × 25	0.026	0.22	4260	2870
3300	332	16 × 20	0.031	0.27	3040	1860	12.5 × 40	0.024	0.19	5810	3470
3600	362	12.5 × 31.5	0.028	0.24	4490	2900					
3900	392					16 × 31.5	0.023	0.18	5480	3400	
						▲18 × 25	0.025	0.19	4500	2900	
4300	432	18 × 20	0.030	0.22	3250	1870					
4700	472	16 × 25	0.026	0.22	4260	2870	16 × 35.5	0.020	0.14	6070	3630
5100	512	12.5 × 40	0.024	0.19	5810	3470	18 × 31.5	0.022	0.16	5600	3470
5600	562					16 × 40	0.019	0.12	6810	3930	
6200	622	16 × 31.5	0.023	0.18	5480	3400	18 × 35.5	0.019	0.12	6280	3750
		▲18 × 25	0.025	0.19	4500	2900					
7500	752	16 × 35.5	0.020	0.14	6070	3630	18 × 40	0.018	0.10	7070	4080
8200	822	18 × 31.5	0.022	0.16	5600	3470					
9100	912	16 × 40	0.019	0.12	6810	3930					
10000	103	18 × 35.5	0.019	0.12	6280	3750					
12000	123	18 × 40	0.018	0.10	7070	4080					

V (Code) Item Cap. (μF) Code		50 (1H)					63 (1J)				
		Case size φD × L (mm)	ESR (Ω) MAX.		Rated ripple (mArms)		Case size φD × L (mm)	ESR (Ω) MAX.		Rated ripple (mArms)	
			20°C /100kHz	-40°C /100kHz	125°C /100kHz	135°C /100kHz		20°C /100kHz	-40°C /100kHz	125°C /100kHz	135°C /100kHz
390	391					12.5 × 20	0.074	0.56	1640	1420	
560	561					12.5 × 25	0.054	0.39	2520	2050	
620	621	12.5 × 20	0.056	0.52	2400	1470					
750	751					12.5 × 31.5	0.042	0.30	3110	2630	
						▲16 × 20	0.053	0.34	2140	1910	
820	821	12.5 × 25	0.044	0.35	3350	2260					
950	951					12.5 × 35.5	0.038	0.25	3760	2970	
						▲18 × 20	0.048	0.26	2350	2100	
1000	102	16 × 20	0.039	0.30	2960	1870	16 × 25	0.038	0.23	2940	2680
1100	112	12.5 × 31.5	0.037	0.26	4220	2520	12.5 × 40	0.031	0.22	4610	3260
1300	132	12.5 × 35.5	0.033	0.23	4810	2780	16 × 31.5	0.034	0.20	3860	3050
		▲16 × 25	0.033	0.22	4040	2500	▲18 × 25	0.035	0.19	3080	2810
		※18 × 20	0.038	0.20	3130	2110					
1600	162	12.5 × 40	0.032	0.20	5240	3020					
1700	172					16 × 35.5	0.027	0.15	4590	3420	
1800	182	16 × 31.5	0.029	0.19	5130	2960	18 × 31.5	0.028	0.15	4080	3220
		▲18 × 25	0.032	0.19	4230	2530					
2000	202					16 × 40	0.025	0.14	5190	3670	
2200	222	16 × 35.5	0.025	0.14	5480	3160	18 × 35.5	0.023	0.12	5220	3690
2400	242	18 × 31.5	0.025	0.16	5240	3020					
2500	252					18 × 40	0.021	0.11	5660	3820	
2700	272	16 × 40	0.022	0.13	5930	3420					
3000	302	18 × 35.5	0.022	0.12	5870	3390					
3600	362	18 × 40	0.020	0.10	6420	3700					

▲ : In this case, [6] will be put at 12th digit of type numbering system.  
 ※ : In this case, [3] will be put at 12th digit of type numbering system.

## UBY

### ■ Dimensions

Cap.( $\mu$ F)	V (Code)	Item	80 (1K)				100 (2A)					
			Case size $\phi$ D $\times$ L (mm)	ESR ( $\Omega$ ) MAX.		Rated ripple (mArms)		Case size $\phi$ D $\times$ L (mm)	ESR ( $\Omega$ ) MAX.		Rated ripple (mArms)	
				20°C/100kHz	-40°C/100kHz	125°C /100kHz	135°C /100kHz		20°C/100kHz	-40°C/100kHz	125°C /100kHz	135°C /100kHz
Code												
160	161						12.5 $\times$ 20	0.074	0.56	1640	1420	
220	221						12.5 $\times$ 25	0.054	0.39	2520	2050	
270	271	12.5 $\times$ 20	0.074	0.56	1640	1420	16 $\times$ 20	0.053	0.34	2140	1910	
300	301						12.5 $\times$ 31.5	0.042	0.30	3110	2630	
360	361						12.5 $\times$ 35.5	0.038	0.25	3760	2970	
390	391	12.5 $\times$ 25	0.054	0.39	2520	2050	$\blacktriangle$ 18 $\times$ 20	0.048	0.26	2350	2100	
430	431						16 $\times$ 25	0.038	0.23	2940	2680	
470	471	16 $\times$ 20	0.053	0.34	2140	1910	12.5 $\times$ 40	0.031	0.22	4610	3260	
510	511	12.5 $\times$ 31.5	0.042	0.30	3110	2630	16 $\times$ 31.5	0.034	0.20	3860	3050	
560	561						18 $\times$ 25	0.035	0.19	3080	2810	
620	621	12.5 $\times$ 35.5	0.038	0.25	3760	2970	16 $\times$ 35.5	0.027	0.15	4590	3420	
680	681	$\blacktriangle$ 18 $\times$ 20	0.048	0.26	2350	2100						
750	751	16 $\times$ 25	0.038	0.23	2940	2680	18 $\times$ 31.5	0.028	0.15	4080	3220	
820	821	12.5 $\times$ 40	0.031	0.22	4610	3260	16 $\times$ 40	0.025	0.14	5190	3670	
950	951	16 $\times$ 31.5	0.034	0.20	3860	3050	18 $\times$ 35.5	0.023	0.12	5220	3690	
1000	102	$\blacktriangle$ 18 $\times$ 25	0.035	0.19	3080	2810						
1100	112	18 $\times$ 25	0.038	0.23	2940	2680	18 $\times$ 40	0.021	0.11	5660	3820	
1300	132	16 $\times$ 35.5	0.027	0.15	4590	3420						
1600	162	18 $\times$ 31.5	0.028	0.15	4080	3220						
		16 $\times$ 40	0.025	0.14	5190	3670						
		$\blacktriangle$ 18 $\times$ 35.5	0.023	0.12	5220	3690						
		18 $\times$ 40	0.021	0.11	5660	3820						

$\blacktriangle$ : In this case,  $\square$  will be put at 12th digit of type numbering system.

### ● Frequency coefficient of rated ripple current

Cap. ( $\mu$ F)	Frequency	120Hz	1kHz	10kHz	100kHz or more
160		0.40	0.75	0.90	1.00
220 to 620		0.50	0.85	0.94	1.00
680 to 2000		0.60	0.87	0.95	1.00
2200 to 4300		0.75	0.90	0.95	1.00
4700 to 12000		0.85	0.95	0.98	1.00