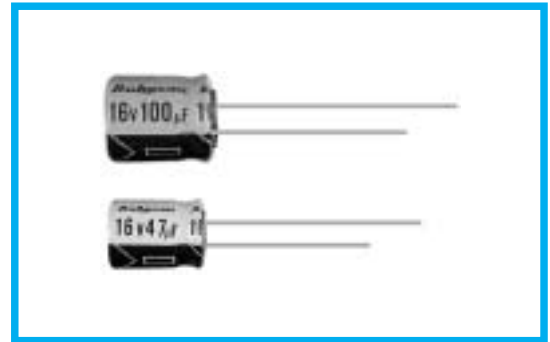


**TWL SERIES**
**Low Leakage Current**
**◆FEATURES**

- RoHS compliance.


**◆SPECIFICATIONS**

Items	Characteristics																																
Category Temperature Range	-40~+85°C																																
Rated Voltage Range	6.3~50V.DC																																
Capacitance Tolerance	±20% (20°C, 120Hz)																																
Leakage Current(MAX)	$I=0.002CV$ or $0.4\mu A$ whichever is greater. (After 2 minutes application of rated voltage) $I$ =Leakage Current( $\mu A$ ) $C$ =Rated Capacitance( $\mu F$ ) $V$ =Rated Voltage(V)																																
Dissipation Factor(MAX) ( $\tan \delta$ )	<math>\langle L=7 \rangle</math> <table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>(20°C, 120Hz)</td> </tr> <tr> <td><math>\tan \delta</math></td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td></td> </tr> </table> <math>\langle L \geq 11 \rangle</math> <table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>(20°C, 120Hz)</td> </tr> <tr> <td><math>\tan \delta</math></td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td></td> </tr> </table> When rated capacitance is over 1000 $\mu F$ , $\tan \delta$ shall be added 0.02 to the listed value with increase of every 1000 $\mu F$ .	Rated Voltage (V)	6.3	10	16	25	35	50	(20°C, 120Hz)	$\tan \delta$	0.24	0.20	0.16	0.14	0.12	0.10		Rated Voltage (V)	6.3	10	16	25	35	50	(20°C, 120Hz)	$\tan \delta$	0.22	0.19	0.16	0.14	0.12	0.10	
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Endurance	After life test with rated ripple current at conditions stated in the table below, the capacitors shall meet the following requirements. <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value.</td> <td>Case Size</td> <td>Life Time (hrs)</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> <td>L=7</td> <td>1000</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> <td>L≥11</td> <td>2000</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value.	Case Size	Life Time (hrs)	Dissipation Factor	Not more than 200% of the specified value.	L=7	1000	Leakage Current	Not more than the specified value.	L≥11	2000																				
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Low Temperature Stability Impedance Ratio(MAX)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>(120Hz)</td> </tr> <tr> <td><math>Z(-25^\circ C)/Z(20^\circ C)</math></td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td></td> </tr> <tr> <td><math>Z(-40^\circ C)/Z(20^\circ C)</math></td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td></td> </tr> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	(120Hz)	$Z(-25^\circ C)/Z(20^\circ C)$	4	3	2	2	2	2		$Z(-40^\circ C)/Z(20^\circ C)$	8	6	6	4	4	3									
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$Z(-40^\circ C)/Z(20^\circ C)$	8	6	6	4	4	3																											

**◆MULTIPLIER FOR RIPPLE CURRENT**

Frequency coefficient

Frequency (Hz)		60(50)	120	500	1k	10k≤
Coefficient	0.1~1 $\mu F$	0.50	1.00	1.20	1.30	1.50
	2.2~4.7 $\mu F$	0.65	1.00	1.20	1.30	1.50
	10~47 $\mu F$	0.80	1.00	1.20	1.30	1.50
	100~1000 $\mu F$	0.80	1.00	1.10	1.15	1.20
	2200 $\mu F$	0.80	1.00	1.05	1.10	1.15

**◆PART NUMBER**

□□□	TWL	□□□□□	□	□□□	□□	DXL
Rated Voltage	Series	Rated Capacitance	Capacitance Tolerance	Option	Lead Forming	Case Size

