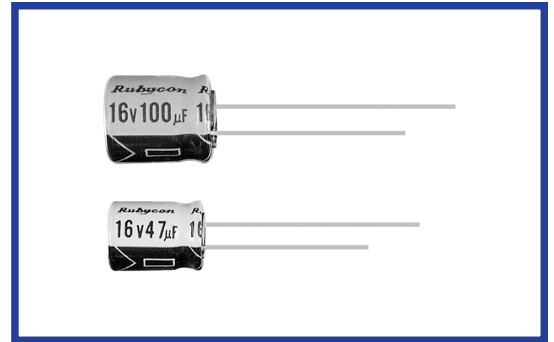


**TWL SERIES**
**Low Leakage Current**
**◆FEATURES**

\*RoHS compliance.


**◆SPECIFICATIONS**

Items	Characteristics																																
Category Temperature Range	-40~+85°C																																
Rated Voltage Range	6.3~50Vdc																																
Capacitance Tolerance	±20% (20°C, 120Hz)																																
Leakage Current(MAX)	I=0.002CV or 0.4µA whichever is greater.(After 2 minutes application of rated voltage) I=Leakage Current(µA)      C=Capacitance(µF)      V=Rated Voltage(Vdc)																																
(tanδ) Dissipation Factor(MAX)	<L=7> <table border="1"> <tr> <td>Rated Voltage (Vdc)</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>tanδ</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> <L≥11> <table border="1"> <tr> <td>Rated Voltage (Vdc)</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>tanδ</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 capacitance is over 1000µF, tanδ shall be added 0.02 to the listed value with increase of every 1000µF.	Rated Voltage (Vdc)	6.3	10	16	25	35	50	(20°C, 120Hz)	tanδ	0.24	0.20	0.16	0.14	0.12	0.10		Rated Voltage (Vdc)	6.3	10	16	25	35	50	(20°C, 120Hz)	tanδ	0.22	0.19	0.16	0.14	0.12	0.10	
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Endurance	After applying rated voltage with rated ripple current for specified time at 85°C, 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 (Vdc)</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>Z(-25°C)/Z(20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td></td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</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 (Vdc)	6.3	10	16	25	35	50	(120Hz)	Z(-25°C)/Z(20°C)	4	3	2	2	2	2		Z(-40°C)/Z(20°C)	8	6	6	4	4	3									
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Z(-25°C)/Z(20°C)	4	3	2	2	2	2																											
Z(-40°C)/Z(20°C)	8	6	6	4	4	3																											

**◆MULTIPLIER FOR RIPPLE CURRENT**

Frequency coefficient

Frequency (Hz)	60(50)	120	500	1k	10k≤	
Coefficient	0.47~1µF	0.50	1.00	1.20	1.30	1.50
	2.2~4.7µF	0.65	1.00	1.20	1.30	1.50
	10~47µF	0.80	1.00	1.20	1.30	1.50
	100~1000µF	0.80	1.00	1.10	1.15	1.20
	2200µF	0.80	1.00	1.05	1.10	1.15

**◆OPTION**

	Code
PET Sleeve	EFC

**◆PART NUMBER**

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



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[NEH330M25DC](#) [NEH1000M50FF](#) [NEH470M35ED-BULK](#) [NEH47M50CB-BULK](#) [NEH4700M50JB-BULK](#) [A142GL3R3Q450A](#)  
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