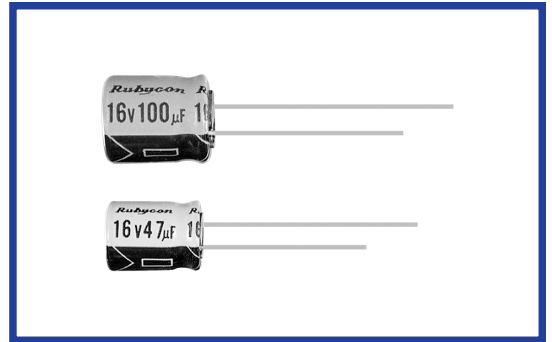


TWL SERIES
Low Leakage Current

 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)																																																						
Dissipation Factor(MAX) (tanδ)	<table border="1"> <tr> <td colspan="2">〈L=7〉</td> <td colspan="6"></td> <td>(20°C, 120Hz)</td> </tr> <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 colspan="2"></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 colspan="2"></td> </tr> <tr> <td colspan="2">〈L≥11〉</td> <td colspan="6"></td> <td>(20°C, 120Hz)</td> </tr> <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 colspan="2"></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 colspan="2"></td> </tr> </table> <p>When capacitance is over 1000µF, tanδ shall be added 0.02 to the listed value with increase of every 1000µF.</p>	〈L=7〉								(20°C, 120Hz)	Rated Voltage (Vdc)	6.3	10	16	25	35	50			tanδ	0.24	0.20	0.16	0.14	0.12	0.10			〈L≥11〉								(20°C, 120Hz)	Rated Voltage (Vdc)	6.3	10	16	25	35	50			tanδ	0.22	0.19	0.16	0.14	0.12	0.10		
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Endurance	<p>After applying rated voltage with rated ripple current for specified time at 85°C, the capacitors shall meet the following requirements.</p> <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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◆ 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

Mouser Electronics

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Rubycon:

[10TWL1000MEFC10X20](#) [10TWL100MEFC6.3X11](#) [10TWL2200MEFC12.5X25](#) [10TWL220MEFC8X11.5](#)
[10TWL22MEFC5X7](#) [10TWL330MEFC8X11.5](#) [6.3TWL33MEFC5X11](#) [6.3TWL33MEFC5X7](#) [6.3TWL470MEFC8X11.5](#)
[6.3TWL47MEFC5X11](#) [6.3TWL47MEFC5X7](#) [6.3TWL2200MEFC12.5X20](#) [6.3TWL220MEFC6.3X11](#)
[6.3TWL220MEFC8X7](#) [6.3TWL22MEFC4X7](#) [6.3TWL22MEFC5X11](#) [6.3TWL330MEFC8X11.5](#) [50TWL47MEFC8X11.5](#)
[50TWL4R7MEFC5X11](#) [50TWL4R7MEFC5X7](#) [6.3TWL1000MEFC10X16](#) [6.3TWL100MEFC5X11](#)
[6.3TWL100MEFC6.3X7](#) [50TWL2R2MEFC4X7](#) [50TWL2R2MEFC5X11](#) [50TWL330MEFC12.5X20](#)
[50TWL33MEFC6.3X11](#) [50TWL3R3MEFC4X7](#) [50TWL3R3MEFC5X11](#) [50TWL10MEFC6.3X7](#) [50TWL1MEFC4X7](#)
[50TWL1MEFC5X11](#) [50TWL220MEFC10X20](#) [50TWL22MEFC6.3X11](#) [50TWL22MEFC8X7](#) [35TWL4R7MEFC4X7](#)
[35TWL10MEFC5X11](#) [35TWL10MEFC5X7](#) [35TWL220MEFC10X16](#) [50TWL100MEFC10X12.5](#) [50TWL10MEFC5X11](#)
[35TWL22MEFC6.3X7](#) [35TWL330MEFC10X20](#) [35TWL33MEFC6.3X11](#) [35TWL33MEFC8X7](#) [35TWL470MEFC12.5X20](#)
[35TWL47MEFC6.3X11](#) [25TWL47MEFC6.3X11](#) [25TWL47MEFC8X7](#) [25TWL4R7MEFC4X7](#) [25TWL4R7MEFC5X11](#)
[35TWL100MEFC8X11.5](#) [35TWL22MEFC5X11](#) [25TWL22MEFC5X11](#) [25TWL22MEFC6.3X7](#) [25TWL330MEFC10X16](#)
[25TWL33MEFC5X11](#) [25TWL33MEFC6.3X7](#) [25TWL470MEFC10X20](#) [16TWL47MEFC6.3X7](#)
[25TWL1000MEFC12.5X25](#) [25TWL100MEFC8X11.5](#) [25TWL10MEFC5X11](#) [25TWL10MEFC5X7](#)
[25TWL220MEFC10X12.5](#) [16TWL22MEFC5X7](#) [16TWL330MEFC10X12.5](#) [16TWL33MEFC5X11](#) [16TWL33MEFC6.3X7](#)
[16TWL470MEFC10X16](#) [16TWL47MEFC5X11](#) [16TWL100MEFC6.3X11](#) [16TWL100MEFC8X7](#) [16TWL10MEFC4X7](#)
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