



Sub-Miniature Radial Electrolytics

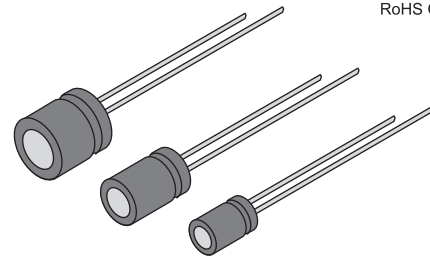
MLRH Series

FEATURES

- Ultraminiature and low profile size
- Low leakage current
- $\pm 20\%$ tolerance standard, $\pm 10\%$ tolerance available
- Can be replacement for tantalum
- Satisfies characteristic W of JIS-C-5141 standard
- RoHS Compliant



RoHS Compliant



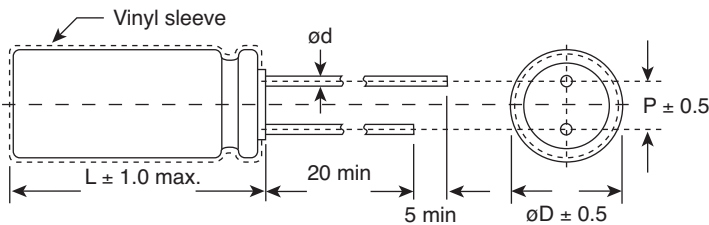
CHARACTERISTICS

Items	Performance								
Operating Temperature Range	-40°C ~ +105°C								
Capacitance Tolerance	±20% at +20°C, 120Hz								
Leakage Current (at 20°C)	I = 0.01CWV or 3μA whichever is greater after 5 minutes of applied rated DC working voltage at 20°C Where: C = rated capacitance in μF. WV = rated DC working voltage								
Dissipation Factor (Tan δ at +20°C 120Hz)	Working voltage (WV)	6.3	10	16	25	35	50	63	
	Tan δ	0.23	0.20	0.17	0.15	0.12	0.10	0.10	
	For compacitors whose capacitance exceeds 1,000μF, the specification of tan δ is increased by 0.02 for every addition of 1,000μF								
Surge voltage	Working voltage (WV)	6.3	10	16	25	35	50	63	
	Surge voltage (SV)	8	13	20	32	44	63	79	
Low Temperature Characteristics	1. Capacitance at -40°C shall not be less than 80% of the value at 20°C								
	2. Impedance ratio at 120Hz								
	Working voltage (WV)	6.3	10	16	25	35	50	63	
	Imp. ratio	Z-25°C/Z+20°C	4	3	3	2	2	2	2
	@ 120Hz	Z-40°C/Z+20°C	10	8	6	4	4	4	4
Shelf Life Test	When returned to ±20°C after 1,000 hours application of working voltage at +105°C, the capacitor will meet the following limits: Capacitance change is < ±25% of initial value; tan δ is < 200% of initial specified value; leakage current is initial specified value								
Standards	When returned to ±20°C after 1,000 hours at +105°C, with no voltage applied, the capacitor will meet the following limits: Capacitance change is ≤ ±25% of initial value; tan δ is ≤ 200% of initial specified value; leakage current is ≤ 200% of initial specified value								

PART NUMBERING SYSTEM

1	4	0	—	M	L	R	H	1	0	V	1	0	0	—	R	C
Prefix				Series				Voltage			Capacitance (μ F)				Suffix (RoHS Compliant)	

DIMENSIONS AND PERMISSIBLE RIPPLE CURRENT



Lead Spacing and Diameter (mm)

øD	4	5	6.3	8
P	1.5	2.0	2.5	3.5
ød	0.45	0.50	0.50	0.50

Value (μ F)	Working Voltage (WV); Dimensions: D x H (mm); Ripple Current: mA/rms @ 120Hz, 105°C													
	6.3		10		16		25		35		50		63	
	D x L	mA	D x L	mA	D x L	mA	D x L	mA	D x L	mA	D x L	mA	D x L	mA
0.1											4 x 7	2	4 x 7	2
0.15													4 x 7	2
0.22											4 x 7	3	4 x 7	3
0.33											4 x 7	4	4 x 7	4.4
0.47											4 x 7	5	4 x 7	7.9
0.68													4 x 7	6
1											4 x 7	10	4 x 7	11
1.5													4 x 7	11
2.2											4 x 7	15	4 x 7	17
3.3											4 x 7	18	4 x 7	21
4.7									4 x 7	22	4 x 7	22	4 x 7	26
6.8							4 x 7	16	5 x 7	16	6 x 7	23		
10					4 x 7	25	4 x 7	26	5 x 7	26	5 x 7	31	6.3 x 7	40
15					4 x 7	21	5 x 7	24	5 x 7	29				
22	4 x 7	31	4 x 7	32	4 x 7	33	4 x 7	34	6.3 x 7	47	6.3 x 7	53	8 x 7	40
33	4 x 7	32	4 x 7	35	5 x 7	43	6.3 x 7	53	8 x 7	83	6.3 x 7	65		
47	4 x 7	38	5 x 7	39	6.3 x 7	49	6.3 x 7	65	8 x 9	63	8 x 7	85		
68	5 x 7	48	6 x 7	58	6 x 7	53	8 x 9	51						
100	5 x 7	63	6.3 x 7	80	6.3 x 7	90	8 x 7	125						
150	6 x 7	99	8 x 9	84										
220	6.3 x 7	99	8 x 7	140	8 x 7	146								

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