

### FEATURES

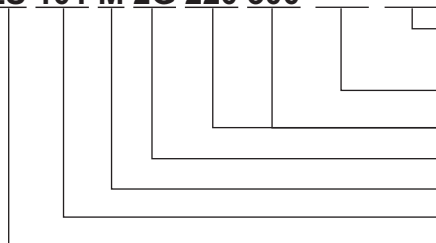
- Has a snap-in terminal which can solder directly to a PCB
- Suitable for electronic equipment with medium-high voltage circuits
- Printed circuit board terminal snap-in type and lug terminal type available

### SPECIFICATIONS

Items	Performance													
Operating Temperature Range	-40 °C ~ +85 °C													
Capacitance Tolerance	+20% (at 120Hz, 20 °C)													
Leakage Current (at 20°C)	I = 0.02CV or 1.5 mA whichever is smaller (after 5 minutes) Where, C= rated capacitance in $\mu$ F. V= rated DC working voltage in V.													
Dissipation Factor (Tan $\delta$ at 120Hz, 20°C)	Rated Voltage	16	25	35	50	63	100	160	200	250	350	400	450	
	Tan $\delta$ (max)	0.40	0.30	0.25	0.20	0.15	0.15	0.1	0.1	0.1	0.15	0.15	0.15	
*: 0.15 for $\Phi$ D = 35mm														
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.													
	Rated Voltage	16	25	35	50	63	100	160	200	250	350	400	450	
	Impedance Ratio	Z (-25°C)/Z(+20°C)	4	3	3	2	2	2	4	4	4	4	8	8
		Z(-40°C)/Z(+20°C)	15	10	8	6	6	5	4	8	10	16	18	20
Load Life Test	Test Time	2,000 Hrs												
	Capacitance Change	$\leq \pm 20\%$												
	Dissipation Factor	Less than 200% of specified value												
	Leakage Current	Within specified value												
* The specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 hrs at 85°C														
Shelf Life Test	Test Time	1,000 Hrs												
	Capacitance Change	$\leq \pm 20\%$												
	Dissipation Factor	Less than 200% of specified value												
	Leakage Current	Within specified value												
* The specification shall be satisfied when the capacitors are restored to 20°C after exposing them for 2,000 hrs at 85°C														
Ripple Current & Frequency Multipliers	Freq. (Hz)	60	120	500	1k	10k up								
		W. V. (V)	Under 100	0.92	1.0	1.13	1.19	1.20						
		160 and Up	0.81	1.0	1.32	1.45	1.50							
		350 and Up	0.77	1.0	1.30	1.41	1.43							
Ripple Current & Temperature Multipliers	Temperature (°C)	40	55	70	85									
	Multiplier	2.1	1.8	1.5	1.0									
Other Standards	Satisfies Characteristic W fo JIS C 5141													

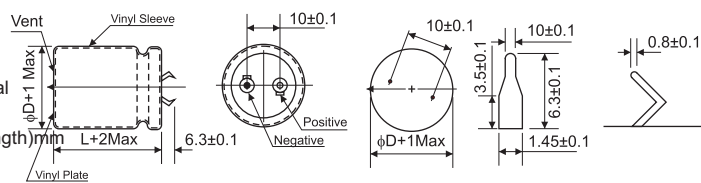
### PART NUMBER EXAMPLE

**LS 101 M 2G 220 300**

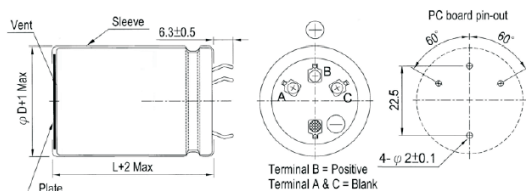


Blank = 6.3mm Terminal  
A = 4mm Terminal  
Blank = Standard 2 Terminal  
L4 for 4 Terminal Type  
Case Size (Diameter X Length)  
Rate Voltage (400V)  
Capacitance tolerance ( $\pm 20\%$ )  
Capacitance (100 $\mu$ F)  
Series name

### SNAP-IN TERMINAL TYPE (2 TERMINAL)



### SNAP-IN TERMINAL (4 TERMINAL)



**DIMENSIONS & PERMISSIBLE RIPPLE CURRENT**

Dimension:  $\Phi$ DxL (mm); Ripple Current: A/RMS at 120Hz, 85°C

WV $\mu$ F	D	16V(1C)				25V(1E)											
		22 $\phi$	25 $\phi$	30 $\phi$	35 $\phi$	22 $\phi$	25 $\phi$	30 $\phi$	35 $\phi$								
5,600						22 x 25	2.31										
6,800						22 x 25	2.38	25 x 25	2.78								
						22 x 30	2.56										
8,200		22 x 25	2.56			22 x 25	2.43	25 x 25	2.78								
						22 x 35	2.81										
10,000		22 x 25	2.6	25 x 25	2.81			22 x 30	2.97	25 x 25	2.93	30 x 25	3.21				
		22 x 30	2.81	25 x 30	3.03			22 x 35	3.18	25 x 30	3.16						
12,000		22 x 25	2.88	25 x 25	2.96			22 x 35	3.33	25 x 30	3.24	30 x 25	3.59	35 x 25	3.58		
		22 x 30	3.13					22 x 40	3.53	25 x 35	3.48	30 x 30	3.86				
15,000		22 x 30	3.45	25 x 25	3.38	30 x 25	3.73			22 x 40	3.68	25 x 35	3.77	30 x 25	3.60	35 x 25	3.96
		22 x 35	3.69	25 x 30	3.64					22 x 50	4.08	25 x 40	4.00	30 x 35	4.12		
18,000		22 x 30	3.47	25 x 25	3.47					22 x 50	4.54	25 x 40	4.42	30 x 30	4.40	35 x 25	4.34
		22 x 40	3.98	25 x 35	3.98							25 x 45	4.68	30 x 35	4.66	35 x 30	4.68
22,000		22 x 35	3.84	25 x 30	3.93	30 x 25	4.08	35 x 25	4.15			25 x 45	4.71	30 x 35	4.70	35 x 25	4.60
		22 x 50	4.52	25 x 40	4.44	30 x 30	4.38							30 x 45	5.26	35 x 35	5.20
27,000		22 x 50	4.84														
33,000		22 x 50	5.2														

WV $\mu$ F	D	35V(1V)				50V(1H)										
		22 $\phi$	25 $\phi$	30 $\phi$	35 $\phi$	22 $\phi$	25 $\phi$	30 $\phi$	35 $\phi$							
2,200						22 x 25	1.93									
2,700						22 x 25	2.05									
						22 x 30	2.21									
3,300						22 x 30	2.41	25 x 25	2.38							
						22 x 30	2.51	25 x 25	2.46							
3,900						22 x 35	2.72	25 x 30	2.68							
		22 x 25	2.21	25 x 25	2.42			22 x 35	2.83	25 x 30	3.03	30 x 25	3.01			
4,700		22 x 30	2.41					22 x 40	3.01							
		22 x 30	2.69	25 x 25	2.69			22 x 40	3.21	25 x 35	3.37	30 x 25	3.17	35 x 25	3.47	
5,600		22 x 35	2.79					22 x 45	3.43			30 x 30	3.43			
		22 x 35	2.70	25 x 25	2.67	30 x 25	3.09			22 x 45	3.73	25 x 35	3.59	30 x 30	3.56	35 x 25
6,800		22 x 40	2.89	25 x 30	2.89			22 x 50	3.94	25 x 40	3.87	30 x 35	3.87			
		22 x 35	3.09	25 x 30	3.12	30 x 25	3.04			25 x 40	4.10	30 x 30	4.12	35 x 25	4.07	
8,200		22 x 45	3.47	25 x 35	3.33	30 x 30	3.29			25 x 45	4.37	30 x 35	4.42	35 x 30	4.41	
		22 x 40	3.22	25 x 35	3.37	30 x 25	3.36	35 x 25	3.32		25 x 50	4.91	30 x 35	4.68	35 x 30	4.59
10,000		22 x 50	3.59	25 x 40	3.59	30 x 30	3.61					30 x 40	5.02	35 x 35	4.92	
		22 x 45	3.71	25 x 40	3.79	30 x 30	3.74	35 x 25	3.75			30 x 40	5.10	35 x 35	5.30	
12,000			25 x 45	4.01	30 x 35	4.01	35 x 30	4.02				30 x 50	5.60	35 x 40	5.60	
			25 x 45	4.55	30 x 35	4.54	35 x 25	4.37						35 x 40	6.03	
15,000					30 x 40	4.80	35 x 35	5.01						35 x 45	6.44	
					30 x 40	4.87	35 x 30	5.03								
18,000			25 x 50	4.84	30 x 40	4.87	35 x 30	5.03								
					30 x 45	5.18	35 x 40	5.71								
22,000					30 x 45	5.79	35 x 35	5.71								
							35 x 45	6.38								

### DIMENSIONS & PERMISSIBLE RIPPLE CURRENT

Dimension:  $\Phi$ DxL (mm); Ripple Current: A/RMS at 120Hz, 85°C

WV μF D	35V(1V)								50V(1H)							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
2,200									22 x 25	1.93						
2,700									22 x 25	2.05						
									22 x 30	2.21						
3,300									22 x 30	2.41	25 x 25	2.38				
3,900									22 x 30	2.51	25 x 25	2.46				
									22 x 35	2.72	25 x 30	2.68				
4,700	22 x 25	2.21	25 x 25	2.42					22 x 35	2.83	25 x 30	3.03	30 x 25	3.01		
	22 x 30	2.41							22 x 40	3.01						
5,600	22 x 30	2.69	25 x 25	2.69					22 x 40	3.21	25 x 35	3.37	30 x 25	3.17	35 x 25	3.47
	22 x 35	2.79							22 x 45	3.43			30 x 30	3.43		
6,800	22 x 35	2.70	25 x 25	2.67	30 x 25	3.09			22 x 45	3.73	25 x 35	3.59	30 x 30	3.56	35 x 25	3.64
	22 x 40	2.89	25 x 30	2.89					22 x 50	3.94	25 x 40	3.87	30 x 35	3.87		
8,200	22 x 35	3.09	25 x 30	3.12	30 x 25	3.04					25 x 40	4.10	30 x 30	4.12	35 x 25	4.07
	22 x 45	3.47	25 x 35	3.33	30 x 30	3.29					25 x 45	4.37	30 x 35	4.42	35 x 30	4.41
10,000	22 x 40	3.22	25 x 35	3.37	30 x 25	3.36	35 x 25	3.32			25 x 50	4.91	30 x 35	4.68	35 x 30	4.59
	22 x 50	3.59	25 x 40	3.59	30 x 30	3.61							30 x 40	5.02	35 x 35	4.92
12,000	22 x 45	3.71	25 x 40	3.79	30 x 30	3.74	35 x 25	3.75					30 x 40	5.10	35 x 35	5.30
			25 x 45	4.01	30 x 35	4.01	35 x 30	4.02					30 x 50	5.60	35 x 40	5.60
15,000			25 x 45	4.55	30 x 35	4.54	35 x 25	4.37							35 x 40	6.03
					30 x 40	4.80	35 x 35	5.01							35 x 45	6.44
18,000			25 x 50	4.84	30 x 40	4.87	35 x 30	5.03								
					30 x 45	5.18	35 x 40	5.71								
22,000					30 x 45	5.79	35 x 35	5.71								
							35 x 45	6.38								

WV μF D	63V(1J)								100V(2A)							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
1,200									22 x 30	2.12	25 x 25					
1,500									22 x 35	2.45	25 x 30		30 x 25	2.46		
1,800	22 x 25	1.90							22 x 40	2.77	25 x 35		30 x 25	2.65		
2,200	22 x 30	2.35	25 x 25	2.30					22 x 45	3.12	25 x 40		30 x 30	3.10	35 x 25	3.14
2,700	22 x 35	2.50	25 x 25	2.29							25 x 45		30 x 35	3.60	35 x 30	3.71
	22 x 30		25 x 30	2.52												
3,300	22 x 35	2.62	25 x 30	2.69	30 x 25	2.78					25 x 50		30 x 40	4.05	35 x 35	4.07
3,900	22 x 40	2.90	25 x 35	3.09	30 x 30	3.09							30 x 45	4.60	35 x 35	4.50
	22 x 45	3.10														
4,700	22 x 50	3.49	25 x 40	3.37	30 x 30	3.37	35 x 25	3.36					30 x 50	5.13	35 x 40	5.12
5,600			25 x 45	3.77	30 x 35	3.75	35 x 30	3.88							35 x 45	5.75
6,800			25 x 50	4.41	30 x 40	4.41	35 x 30	4.04							35 x 50	6.01
						4.90	35 x 35	4.33								
8,200					30 x 45	5.49	35 x 35	4.80								
10,000					30 x 50		35 x 40	5.47								
12,000							35 x 45	5.97								
							35 x 50	6.30								

### DIMENSIONS & PERMISSABLE RIPPLE CURRENT

Dimension:  $\Phi$ DxL (mm); Ripple Current: A/RMS at 120Hz, 85°C

WV μF	160V(2C)								200V(2D)							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
150	22 x 25	0.95							22 x 25	0.95						
180	22 x 25	1.04							22 x 25	1.04						
220	22 x 25	1.15							22 x 25	1.15						
270	20 x 25	1.12														
	22 x 25	1.27							22 x 25	1.30						
330	20 x 30	1.28							22 x 30	1.40	25 x 25	1.43				
	22 x 25	1.4														
390	22 x 30	1.62							22 x 30	1.65	25 x 25	1.63				
									22 x 35	1.76	25 x 30	1.74				
470	22 x 30	1.77	25 x 25	1.77					22 x 35	1.88	25 x 30	1.86	30 x 25	1.85		
									22 x 40	1.97						
560	22 x 30	1.92	25 x 25	1.92	30 x 25	2.02			22 x 40	2.08	25 x 30	2.05	30 x 25	2.05		
	22 x 35	2.05	25 x 30	2.05					22 x 45	2.18	25 x 35	2.16	30 x 30	2.15		
680	22 x 35	2.12	25 x 30	2.22	30 x 25	2.22			22 x 45	2.36	25 x 35	2.36	30 x 30	2.36	35 x 25	2.10
	22 x 40	2.24	25 x 35	2.31					22 x 50	2.47	25 x 40	2.43	30 x 35	2.43		
820	22 x 40	2.32	25 x 30	2.32	30 x 25	2.31	35 x 25	2.50	22 x 50	2.68	25 x 40	2.66	30 x 30	2.62	35 x 30	2.72
	22 x 45	2.55	25 x 35	2.52	30 x 30	2.51					25 x 45	2.79	30 x 35	2.77	35 x 25	2.39
1,000	22 x 50	2.88	25 x 40	2.86	30 x 30	2.82	35 x 25	2.79			25 x 45	2.96	30 x 35	3.00	35 x 30	2.96
			25 x 45	2.98	30 x 35	2.94	35 x 30	2.92			25 x 50	3.12	30 x 40	3.10	35 x 35	3.09
1,200			25 x 45	3.27	30 x 35	3.25	35 x 30	3.24			25 x 50	3.44	30 x 40	3.44	35 x 35	3.40
			25 x 50	3.43	30 x 40	3.42	35 x 35	3.40					30 x 45	3.53	35 x 40	3.50
1,500					30 x 40	3.77	35 x 35	3.75					30 x 50	3.93	35 x 40	3.87
					30 x 45	3.92	35 x 40	3.90							35 x 45	3.95
1,800					30 x 45	4.10	35 x 35	4.08							35 x 45	4.37
					30 x 50	4.32	35 x 40	4.30							35 x 50	4.45
2,200							35 x 45	4.72							35 x 50	5.00
							35 x 50	4.88								

WV μF	250V(2E)								350V(2V)							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
82									22 x 25	0.81						
100									22 x 25	0.90						
120									20 x 30	0.95	25 x 25	1.04				
									22 x 25	0.99						
150									22 x 30	1.05						
	22 x 25	0.91							20 x 35	1.05	25 x 25	1.16	30 x 25	1.24		
180									22 x 30	1.14						
	22 x 25	1.01							22 x 35	1.24	25 x 30	1.24				
220									20 x 40	1.23	25 x 30	1.30	30 x 25	1.37		
	22 x 25	1.18	25 x 25	1.24					22 x 35	1.28						
270									22 x 40	1.38	25 x 35	1.37				
	22 x 25	1.43	25 x 25	1.49					20 x 45	1.36	25 x 35	1.46	30 x 25	1.47		
330									22 x 40	1.40						
	22 x 30	1.58	25 x 25	1.53	30 x 25	1.59			22 x 45	1.49	25 x 40	1.51	30 x 30	1.52		
390									22 x 45	1.62	25 x 35	1.65	30 x 30	1.71	35 x 25	1.72
	22 x 30	1.67	25 x 30	1.62					22 x 50	1.69	25 x 40	1.73	30 x 35	1.76		
470									22 x 50	1.94	25 x 40	1.88	30 x 35	1.93	35 x 25	1.77
	22 x 35	1.79	25 x 30	1.79	30 x 25	1.77					25 x 45	1.96	30 x 40	1.98	35 x 30	1.96
560											25 x 45	2.04	30 x 35	2.12	35 x 30	2.19
	22 x 40	1.89	25 x 35	1.87	30 x 30	1.85							30 x 40	2.18	35 x 35	2.24
680									22 x 40	2.05	25 x 35	2.05	30 x 25	1.80		
	22 x 40	2.05	25 x 35	2.05	30 x 25	1.80			22 x 45	2.14			30 x 40	2.41	35 x 35	2.43
820													30 x 45	2.48	35 x 40	2.50
	22 x 50	2.43	25 x 40	2.32	30 x 30	2.24	35 x 25	2.21					30 x 45	2.60	35 x 35	2.62
960															35 x 40	2.69
															35 x 40	2.80
1,100															35 x 45	3.08
1,200																

### DIMENSIONS & PERMISSIBLE RIPPLE CURRENT

Dimension:  $\Phi$ DxL (mm); Ripple Current: A/RMS at 120Hz, 85°C

WV μF	400V(2G)								450V(2W)							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
56									20 x 25	0.57						
									22 x 25	0.68						
68	20 x 25	0.66							20 x 25	0.62						
	22 x 25	0.72							22 x 25	0.72						
82									22 x 30	0.80						
	20 x 25	0.72							20 x 30	0.74	25 x 25	0.85				
100	22 x 25	0.81							22 x 30	0.87						
	22 x 30	0.94	25 x 25	0.97					20 x 35	0.87	25 x 25	0.98				
120									22 x 30	0.87						
	22 x 30	1.04	25 x 25	1.08					22 x 35	1.00						
150	22 x 35	1.12	25 x 30	1.16					20 x 40	0.96	25 x 30	1.09	30 x 25	1.10		
									22 x 40	1.15	25 x 35	1.12				
180	20 x 35	1.00	25 x 30	1.21					20 x 45	1.13	25 x 30	1.16	30 x 25	1.16		
	22 x 35	1.18			30 x 25	1.24			22 x 35	1.20	25 x 35	1.27	30 x 30	1.32		
220	22 x 40	1.25							22 x 40	1.25	25 x 40	1.35				
	20 x 40	1.17	25 x 30	1.23	30 x 25	1.45			20 x 50	1.29	25 x 35	1.31			35 x 25	1.35
270	22 x 40	1.34	25 x 35	1.37	30 x 30	1.52	35 x 25	1.54	22 x 45	1.36	25 x 40	1.45	30 x 30	1.43	35 x 30	1.49
	22 x 45	1.40							22 x 50	1.51	25 x 45	1.50	30 x 35	1.49		
330	20 x 50	1.43	25 x 35	1.56	30 x 30	1.58	35 x 25	1.6			25 x 40	1.47	30 x 30	1.45	35 x 25	1.43
	22 x 50	1.56	25 x 40	1.62	30 x 35	1.64					25 x 45	1.65	30 x 35	1.63	35 x 30	1.61
390	22 x 50	1.56									25 x 50	1.73	30 x 40	1.72		
	22 x 50	1.74	25 x 40	1.70	30 x 30	1.56	35 x 25	1.53			25 x 45	1.59	30 x 35	1.65	35 x 30	1.71
470			25 x 45	1.76	30 x 35	1.76	35 x 30	1.95			25 x 50	1.76	30 x 40	1.93	35 x 30	1.88
			25 x 50	1.90	30 x 40	1.97	35 x 35	2.02					30 x 45	2.10	35 x 35	2.06
560					30 x 45	2.02							30 x 50	2.19	35 x 40	2.13
			25 x 50	1.95	30 x 40	2.15	35 x 30	1.97					30 x 45	2.03	35 x 35	2.00
680					30 x 45	2.22	35 x 35	2.17					30 x 50	2.24	35 x 40	2.11
							35 x 40	2.24							35 x 45	2.34
820					30 x 45	2.23	35 x 35	2.20					30 x 50	2.33	35 x 45	2.43
					30 x 50	2.40	35 x 40	2.42							35 x 50	2.63
1000						35 x 45	2.48									
					30 x 50	2.44	35 x 40	2.49							35 x 45	2.60
1200						35 x 45	2.71									
						35 x 50	2.78									
1500						35 x 45	2.68								35 x 50	2.91
						35 x 50	2.95									

WV μF	500V(2H)							
	22 φ		25 φ		30 φ		35 φ	
56	22 x 25	0.70						
68	22 x 30	0.82						
82	22 x 35	0.96	25 x 30	0.97				
100	22 x 40	1.14	25 x 35	1.15	30 x 30	1.16		
120	22 x 45	1.30	25 x 35	1.25	30 x 30	1.26	35 x 25	1.20
150	22 x 50	1.52	25 x 40	1.48	30 x 35	1.50	35 x 30	1.34
180			25 x 50	1.65	30 x 40	1.60	35 x 30	1.55
220					30 x 45	1.90	35 x 30	1.85
270							35 x 40	1.95
330							35 x 45	2.00

### DIMENSIONS & PERMISSIBLE RIPPLE CURRENT

Dimension:  $\Phi$ DxL (mm); Ripple Current: A/RMS at 120Hz, 85°C

Items below available only in 4 Terminal Types (L4)

WV μF	160V(2C)				200V(2D)				160V(2C)			
	35 φ		40 φ		35 φ		40 φ		35 φ		40 φ	
1,500											40 x 40	4.04
1,800									35 x 70	4.60	40 x 50	4.5
2,200							40 x 40	4.92	35 x 80	4.90	40 x 60	4.90
2,700					35 x 70	5.40	40 x 50	5.00	35 x 90	5.40	40 x 80	6.30
3,300	35 x 70	4.80	40 x 60	5.00	35 x 80	5.90	40 x 60	5.90	35 x 90	6.10	40 x 80	7.00
3,900	35 x 80	5.40	40 x 70	5.60	35 x 80	6.30	40 x 80	6.40	35 x 100	7.47	40 x 90	8.00
4,700			40 x 80	6.60	35 x 90	7.10	40 x 80	7.38			40 x 100	8.88
5,600					35 x 100	8.90	40 x 90	8.00				
6,800							40 x 100	8.65				

WV μF	400V(2G)				420V(2P)				450V(2W)			
	35 φ		40 φ		35 φ		40 φ		35 φ		40 φ	
680	35 x 60	3.70	40 x 50	3.7	35 x 60	3.7	40 x 50	3.7	35 x 70	4.0	40 x 50	3.7
820	35 x 60	4.10	40 x 50	4.0	35 x 70	4.4	40 x 60	4.3	35 x 80	4.6	40 x 60	4.3
1,000	35 x 70	4.80	40 x 60	4.8	35 x 80	5.1	40 x 60	4.8	35 x 100	5.6	40 x 70	5.1
1,200	35 x 100	6.10	40 x 70	5.5			40 x 70	5.5			40 x 80	5.8
1,500	35 x 100	6.80	40 x 80	6.5			40 x 100	7.2			40 x 100	7.2
1,800			40 x 100	7.8			40 x 100	7.8				