

FEATURES

- Long life (2000 hours @ 85°C).
- Expanded applications for automatic mounting.
- Solvent resistant.

PART NUMBERING

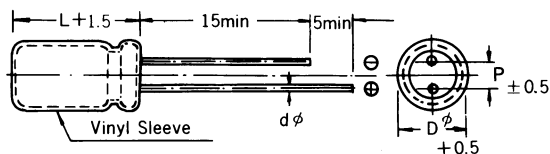
Part Number Example: 711-050/100M5X11F							
711	-	050	/	100	M	5X11	F
Type		Rated DC Voltage		Capacitance Code (μF)*	Tolerance Code	Size	RoHs Compliant

* Capacitance Code: First two digits represent significant figures, third digit represents multiplier (number of zeros).

SPECIFICATIONS

Performance Characteristics											
Operating Temperature Range	-40°C ~ +85°C @ 6.3VDC ~ 400VDC. -25°C ~ +85°C @ 450VDC.										
Temperature Characteristics (120Hz)	Impedance Ratio										
	Rated Voltage (WVDC)	6.3	10	16	25	35	50 ~ 100	160 ~ 200	250	315 ~ 400	450
	Z (-25°C) / Z (+20°C)	4	3	2	2	2	2	3	3	3	5
	Z (-40°C) / Z (+20°C)	10	8	6	4	3	3	6	6	6	
Voltage Range	6.3VDC ~ 450VDC.										
Capacitance Range	0.1μF ~ 15000μF.										
Capacitance Tolerance (20°C, 120Hz)	±20%.										
Maximum Dissipation Factor (20°C, 120Hz)	Rated Voltage (WVDC)	6.3	10	16	25	35	50	63	100	160 ~ 350	400 ~ 450
	DF %	22	19	16	14	12	10	9	6	20	20
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.										
Maximum Leakage Current	6.3VDC ~ 100VDC.						160VDC ~ 450VDC.				
	0.03CV or 3μA, whichever is greater, after 1 minute application of rated voltage. 0.01CV or 3μA, whichever is greater, after 2 minutes application of rated voltage.						1 minute. I ≤ 0.03 CV (μA).				
Applicable Standards	Characteristics of JIS C-5141.										
Load Life Test (85°C)	After 2000 hours' application of rated voltage, capacitors meet the characteristics requirements mentioned below.										
	Capacitance Change	Within ±20% of initial value.									
	DF	200% or less of initial specified value.									
	Leakage Current	Initial specified value or less.									
Shelf Life (85°C)	After leaving capacitors under no load for 1000 hours and applying voltage according to JIS C-5102 4-3, they meet the specified value for load life characteristics listed above.										

DIMENSIONS



DIMENSIONS (UNIT: mm)

D	5	6.3	8	10	13	16	18	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10
dφ	0.5		0.6			0.8			

ALLOWABLE RIPPLE CURRENT VS. AMBIENT TEMPERATURE

Ambient Temperature (°C)	+70	+85
Compensating Coefficient	1.27	1.0

CASE SIZE OF STANDARD PRODUCTS (DXL (mm))

Cap. (µF)		WVDC						
		6.3	10	16	25	35	50	63
0.1~0.47	R47						5 x 11	5 x 11
1.0	010						5 x 11	5 x 11
2.2	2R2						5 x 11	5 x 11
3.3	3R3						5 x 11	5 x 11
4.7	4R7				5 x 11	5 x 11	5 x 11	5 x 11
10	100			5 x 11	5 x 11	5 x 11	5 x 11	5 x 11
22	220		5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6.3 x 11
33	330	5 x 11	5 x 11	5 x 11	5 x 11	5 x 11	6.3 x 11	8 x 11.5
47	470	5 x 11	5 x 11	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5
100	101	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5	8 x 11.5	10 x 13
220	221	6.3 x 11	6.3 x 11	8 x 11.5	8 x 11.5	10 x 12	10 x 16	10 x 20
330	331	6.3 x 11.5	8 x 11.5	8 x 11.5	10 x 12	10 x 16	10 x 20	13 x 20
470	471	8 x 11.5	8 x 11.5	8 x 11.5	10 x 13	10 x 20	13 x 20	13 x 25
1000	102	8 x 11.5	10 x 12.5	10 x 16	10 x 20	13 x 21	16 x 25	16 x 31.5
1500	152	10 x 16	10 x 20	13 x 20	13 x 25	16 x 26	16 x 32	18 x 35.5
2200	222	10 x 20	10 x 20	13 x 20	13 x 25	16 x 31.5	16 x 35.5	18 x 41
3300	332	13 x 20	13 x 25	13 x 25	16 x 31.5	16 x 35.5	18 x 35.5	22 x 41
4700	472	13 x 25	13 x 25	16 x 25	16 x 31.5	18 x 35.5	22 x 41	
6800	682	16 x 25	16 x 25	16 x 31.5	18 x 35.5			
10000	103	16 x 31.5	18 x 35.5	18 x 41	22 x 41			
15000	223	18 x 35.5	22 x 36.5	25 x 41				

CASE SIZE OF STANDARD PRODUCTS (DXL (mm)) (CONT.)

Cap. (µF)		WVDC						
		100	160	200	250	315	400	450
0.1~0.47	R47	5 x 11	5 x 11	5 x 11	5 x 11		6.3 x 11	6.3 x 11
1.0	010	5 x 11	5 x 11	6.3 x 11	6.3 x 11	6.3 x 11	6.3 x 11	8 x 12
2.2	2R2	5 x 11	6.3 x 11	6.3 x 11	6.3 x 11	8 x 11.5	10 x 12.5	10 x 13
3.3	3R3	5 x 11	6.3 x 11.5	6.3 x 11.5	8 x 12	10 x 13	10 x 16	10 x 20
4.7	4R7	5 x 11	8 x 11.5	8 x 12.5	10 x 13	10 x 16	10 x 16	10 x 20
10	100	6.3 x 11	10 x 12.5	10 x 16	10 x 17	10 x 20	12.5 x 20	12.5 x 25
22	220	8 x 11.5	10 x 17	10 x 20	10 x 20	12.5 x 25	16 x 25	16 x 31.5
33	330	10 x 12.5	10 x 20	12.5 x 21	12.5 x 25	16 x 25	16 x 25	16 x 35.5
47	470	10 x 16	12 x 21	12.5 x 25	12.5 x 25	16 x 31.5	16 x 31.5	16 x 35.5
100	101	10 x 20	16 x 25	16 x 25.5	16 x 31.5	18 x 40	22 x 41	
220	221	16 x 25	16 x 35.5	18 x 35.5	20 x 36	22 x 46		
330	331	16 x 25	22 x 36	22 x 41	22 x 46			
470	471	16 x 31.5	22 x 46					
1000	102	18 x 41						
1500	152							
2200	222							
3300	332							
4700	472							
6800	682							
10000	103							
15000	223							

MAXIMUM RIPPLE ((mA) 85°C, 120Hz)

Cap. (µF)		WVDC										
		6.3	10	16	25	35	50	63	100	160	200	250
0.1~0.47	R47						9	9	10	11	11	11
1.0	010						17	17	22	16	16	16
2.2	2R2						25	28	32	25	25	30
3.3	3R3						35	35	40	35	35	40
4.7	4R7				31	40	42	45	48	40	45	45
10	100			60	60	60	65	70	80	65	70	75
22	220		70	75	90	95	100	115	135	110	110	130
33	330	65	75	85	95	105	125	140	170	150	160	160
47	470	80	95	130	130	140	150	190	230	140	190	210
100	101	130	180	185	190	230	250	300	400	310	340	360
220	221	240	250	320	320	370	440	490	710	520	530	540
330	331	300	330	360	420	490	580	680	860	640	680	720
470	471	350	400	470	540	640	760	880	1100	850		
1000	102	580	630	790	950	1100	1350	1550	1800			
1500	152	720	830	790	1100	1350	1520	1730				
2200	222	1050	1100	1350	1550	1800	2090	2120				
3300	332	1250	1400	1700	1950	2220	2280	2360				
4700	472	1700	1800	2100	2360	2380	2500					
6800	682	1900	2150	2500	2600							
10000	103	2250	2500	2600	2700							
15000	223	2680	2560	2830								

MAXIMUM RIPPLE ((mA) 85°C, 120Hz) (CONT.)

Cap. (µF)		WVDC		
		315	400	450
0.1~0.47	R47		11	9
1.0	010	16	16	18
2.2	2R2	30	25	30
3.3	3R3	40	35	40
4.7	4R7	50	45	50
10	100	75	75	80
22	220	130	130	140
33	330	180	170	180
47	470	230	220	220
100	101	350	330	
220	221	590		
330	331			
470	471			

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

WVDC	Capacitance (µF)	Frequency				
		50Hz	120Hz	300Hz	1KHz	10KHz
6.3 ~ 100	~ 47	0.75	1	1.35	1.57	2.00
	100 ~ 470	0.80	1	1.23	1.34	1.50
	1000 ~ 22000	0.85	1	1.10	1.13	1.15
160 ~ 450	0.47 ~ 220	0.80	1	1.25	1.40	1.60
	330 ~ 470	0.90	1	1.10	1.13	1.15

Capacitors in 13mm Diameter size and rated voltage 160V are available in either 5 or 7.5mm lead spacing:
P = 5.0mm (standard), P/N ex. 711-025/102M13 x 20.
P = 7.5mm (optional), P/N ex. 711-025/102M13x20/7.