On-Site Components, LLC
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GRD / GRDL Radial 85°C Standard

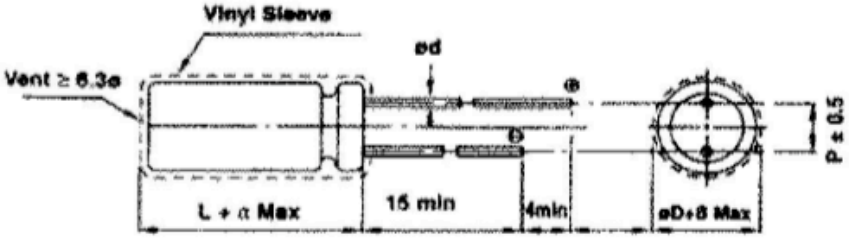
Features

- Standard low voltage general purpose use.
- Campact size
- Low cost

Specifications

Diagram Of Dimensions

Internal Structure



Lead Spacing and Diameter

Unit : mm

ø D	5	6.3	8	10	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.5
ø d	0.5			0.6		0.8		1.0
α	1.0			1.0 for L ≤ 16, 2.0 for L > 20				
β	0.5					1.0		

Dimensions and Permissible Ripple Current

Dimension : Ø DxL(mm) Ripple Current : mA/RMS at 120 Hz 85°C

W.V (S.V) / code / μF		6.3 (8)		10 (13)		16 (20)		25 (32)		35 (44)		50 (63)		63 (79)		100 (125)	
		øDXL	mA	øDXL	mA	øDXL	mA	øDXL	mA	øDXL	mA	øDXL	mA	øDXL	mA	øDXL	mA
0.1	OR1											5 x 11	1.5	5 x 11	3.0	5 x 11	3.0
0.22	R22											5 x 11	3.5	5 x 11	4.5	5 x 11	4.5
0.33	R33											5 x 11	5.0	5 x 11	7.5	5 x 11	7.5
0.47	R47											5 x 11	6.0	5 x 11	9.0	5 x 11	9.0
1	010											5 x 11	10	5 x 11	15	5 x 11	15
2.2	2R2											5 x 11	20	5 x 11	30	5 x 11	30
3.3	3R3											5 x 11	30	5 x 11	38	5 x 11	38
4.7	4R7											5 x 11	41	5 x 11	43	5 x 11	46
10	100									5 x 11	54	5 x 11	60	5 x 11	63	6.3 x 11	71
22	220					5 x 11	70	5 x 11	75	5 x 11	81	5 x 11	95	6.3 x 11	100	8 x 12.5	123
33	330					5 x 11	86	5 x 11	92	5 x 11	106	6.3 x 11	116	6.3 x 11	143	10 x 12.5	170
47	470			5 x 11	92	5 x 11	102	5 x 11	110	5 x 11	126	6.3 x 11	162	6.3 x 11	170	10 x 16	224

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100	101	5 x 11	125	5 x 11	134	5 x 11	160	6.3 x 11	171	6.3 x 11	215	8 x 11.5	236	10 x 12.5	297	10 x 20	342
220	221	6.3 x 11	198	6.3 x 11	212	6.3 x 11	277	8 x 11.5	319	10 x 12.5	381	10 x 16	434	10 x 16	479	13 x 25	554
330	331	6.3 x 11	383	8 x 11.5	303	8 x 11.5	339	10 x 12.5	449	10 x 16	508	10 x 20	570	13 x 21	669	16 x 26	787
470	471	8 x 11.5	337	8 x 11.5	362	8 x 12.5	402	10 x 12.5	536	10 x 16	606	13 x 21	724	13 x 21	829	16 x 31	942
1000	102	8 x 14.5	508	10 x 12.5	630	10 x 16	701	10 x 20	866	13 x 21	948	13 x 25	1112	16 x 26	1162	18 x 40	1345
2200	222	10 x 20	919	10 x 20	1041	13 x 21	1115	13 x 21	1334	16 x 26	1440	16 x 36	1689	18 x 41	1820		
3300	332	10 x 20	1139	13 x 21	1278	13 x 25	1444	16 x 26	1600	16 x 36	1692	18 x 36	2006	22 x 41	2230		
4700	472	13 x 21	1437	13 x 25	1541	16 x 26	1639	16 x 31	1870	18 x 36	2185	22 x 41	2231	25 x 41	2650		
10000	103	16 x 26	1994	16 x 36	2337	18 x 36	2478	18 x 41	2700								
22000	223	18 x 41	3066														

* Alternative D X L available upon request

Specifications

Items	Performance	
	GRD	GRDL
Life	At 85℃ 1000 Hrs	At 85℃ 2000 Hrs
Operating Temperature Range	−40℃ ~ +85℃	
Capacitance Tolerance	±20%	(at 20℃, 120 Hz)
Leakage Current	I=0.01 CV or 3(μA) whichever is greater. (At 20℃, after 2 minutes) Where, C=rated capacitance in μF, V=rated DC working voltage in V.	

Dissipation Factor (Tan δ, At 20℃, 120Hz)

Rated voltage(V)	6.3	10	16	25	35	50	63	100
Tan δ	0.26	0.20	0.17	0.15	0.13	0.11	0.10	0.08

Add 0.02 per 1000 μF for more than 1000 μF

Temperature Characteristics

Rated Voltage			6.3	10	16	25	35	50	63	100
Impedance Ratio	Z-25℃/Z+20℃	φD<16	6	4	3	3	2	2	2	2
		φD≧16	8	6	4	4	3	3	3	3
	Z-40℃/Z+20℃	φD<16	10	8	6	6	4	3	3	3
		φD≧16	18	16	12	10	8	8	6	6

Life Test (after application of the rated voltage at 85℃)

Test Time		1000 Hrs		2000 Hrs	
Test Item		Load Life	Shelf Life	Load Life	Shelf Life
Leakage Current		Within specified value			
Dissipation Factor		Less than 200% of specified value			
Capacitance Change	6.3 ~ 25V	±20%		±25%	
	35 ~ 100V	±20%		±20%	

Ripple Current & frequency Multipliers

Freq. (Hz) / Cap. (μF)	60(50)	120	500	1K	10K/up
under 100	0.70	1.0	1.30	1.40	1.50
100 to 1000	0.75	1.0	1.20	1.30	1.35
1000 and up	0.80	1.0	1.10	1.12	1.15

Ripple Current & Temperature Multipliers

Temperature(℃)	under 50	70	85
Multiplier	1.78	1.40	1.0

Standards	Satisfies Characteristic W of JIS-C-5141