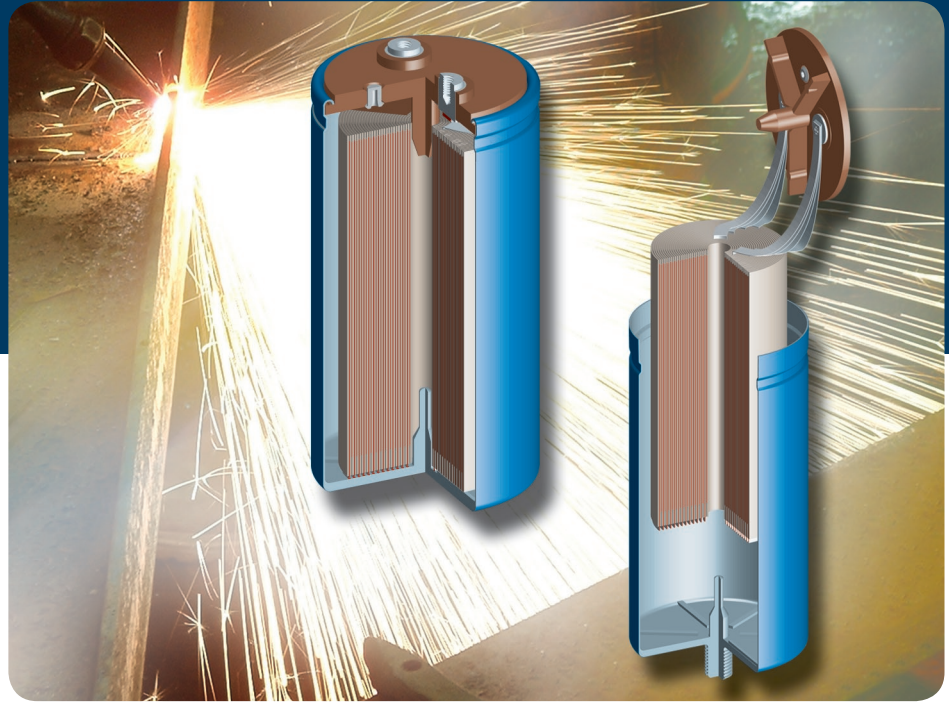




# ALUMINUM CAPACITORS

101/102 PHR-ST



## Power High Ripple Current Screw Terminals

### KEY BENEFITS

- Polarized aluminum electrolytic capacitors, non-solid electrolyte
- Large types, cylindrical aluminum case, insulated with a blue sleeve
- Pressure relief in the sealing
- Long useful life

### APPLICATIONS

- Computer, telecommunications and industrial systems
- Smoothing and filtering
- Standard and switched mode power supplies

# Aluminum Capacitors Power High Ripple Current Screw Terminals

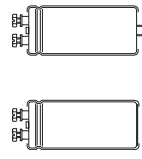


Fig. 1 Component outline

DESCRIPTION	VALUE
Nominal case size (D × L in mm)	35 × 60 to 76 × 146
Rated capacitance range (ES series), C <sub>n</sub>	220 to 330 000 µF
Tolerance on C <sub>n</sub>	± 20 %
Rated voltage range, U <sub>r</sub>	25 to 100 V / 200 to 450 V
Category temperature range	- 40 to + 85 °C
Endurance test at 85 °C	10000 hours
Useful life at 85 °C	15000 hours (D ≤ 50 mm) 40000 hours (D > 65 mm)
Useful life at 40 °C, 1 A I <sub>r</sub> applied	400000 hours (D ≤ 50 mm) 600000 hours (D > 65 mm)
Shear life at 0 V, 85 °C	500 hours
Based on sectional specification IEC 60 384-4/EN130300	
Climatic category IEC 60068	IEC 60 384-4/EN130300 40/065/56

### DIMENSIONS in millimeters AND AVAILABLE FORMS

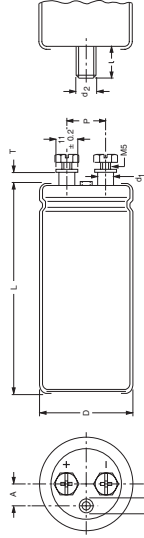


Fig. 2 Screw terminal (ST); screw terminal bolt (STB)

Maximum permissible torque which may be applied to the termination screws: 2 Nm.  
The capacitors are delivered with screws and washers.

Table 1

NOMINAL CASE SIZE ∅ D × L	DIMENSIONS in millimeters, MASS AND PACKAGING QUANTITIES								
	L <sub>max</sub>	P ± 0.3	A ± 0.5	d <sub>1</sub> ± 0.2	T ± 0.5	d <sub>2</sub> × I	MASS (per box)	PACKAGING QUANTITIES (per box)	CARDBOARD BOX DIMENSIONS L × W × H
35 × 60	63	13	8	8	5.9	M8 × 12	75	25	196 × 192 × 110
35 × 80	81	13	8	8	5.9	M8 × 12	95	25	196 × 192 × 115
35 × 105	105	13	8	8	5.9	M8 × 12	130	25	196 × 192 × 140
50 × 80	51.5	105	22	12	8	M12 × 16	200	25	293 × 273 × 115
50 × 105	51.5	105	22	12	8	M12 × 16	300	25	293 × 273 × 140
65 × 105	66	105	28.5	16	8*	M12 × 16	480	10	368 × 151 × 140
76 × 105	77	106	32	19	6*	M12 × 16	700	10	418 × 173 × 140
76 × 146	77	146	32	19	6*	M12 × 16	1000	10	418 × 173 × 180

- ### FEATURES
- Polarized aluminum electrolytic capacitors, non-solid electrolyte
  - Large types, cylindrical aluminum case, insulated with a blue sleeve
  - Pressure relief in the sealing
  - Long useful life

- ### APPLICATIONS
- Computer, telecommunications and industrial systems
  - Smoothing and filtering
  - Standard and switched mode power supplies

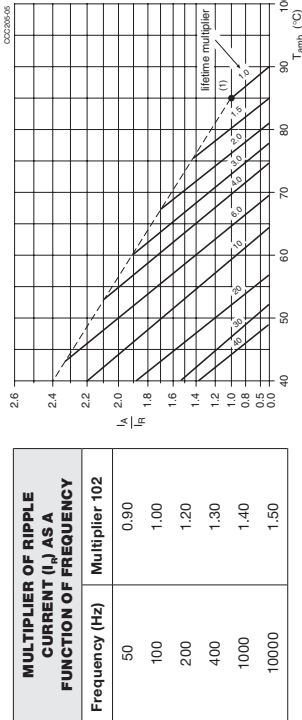
- ### MARKING
- The capacitors are marked with the following information:
- Rated capacitance (in µF)
  - Tolerance on rated capacitance, code letter in accordance with IEC 60062 (M for ± 20 %)
  - Rated voltage (in V)
  - Date code (YYMM)
  - Name of manufacturer
  - Code for factory of origin
  - '-' sign to identify the negative terminal, visible from the top and side of the capacitor
  - Code number
  - Climatic category in accordance with IEC 60068

### ELECTRICAL DATA AND ORDERING INFORMATION FOR 102 SERIES

U <sub>r</sub> (V)	C <sub>n</sub> 100 Hz (µF)	NOMINAL CASE SIZE ∅ D × L (mm)	I <sub>h</sub> 100 Hz 85 °C (A)	I <sub>s</sub> 5 min (mA)	ESR max 20 kHz (mΩ)	Z MAX 20 kHz (mΩ)	HIGH POST MS DISC CATALOG NUMBER STB	
							2222 102 .....	2222 102 .....
400	220	35 × 60	2.1	0.18	557	383	16231	56221
	330	35 × 80	2.5	0.26	383	254	16331	56331
	470	35 × 105	3.1	0.38	374	245	26331	66331
	680	35 × 105	3.3	0.38	271	160	16471	56471
	1000	50 × 80	3.9	0.55	265	175	26471	56471
	1500	50 × 105	4.5	0.54	191	128	16681	56681
	2200	50 × 105	5.7	0.80	136	86	26881	66881
	3300	50 × 105	6.0	0.80	128	86	16102	56102
	4700	50 × 105	7.1	1.20	88	59	26152	66152
	6800	65 × 105	10.0	1.76	60	40	26222	66222
		76 × 105	13.4	2.64	40	27	16332	56332
		76 × 105	15.0	3.76	31	21	26332	66332
		76 × 146	16.4	3.76	28	19	16472	56472
		76 × 146	18.3	5.44	22	15	26682	66682
450	220	35 × 60	2.1	0.20	503	313	17221	57221
	330	35 × 80	2.7	0.30	339	212	27331	67331
	470	35 × 105	3.4	0.42	241	151	17471	57471
	680	50 × 80	4.9	0.61	159	98	27681	67681
	1000	50 × 80	5.7	0.90	118	75	17102	57102
	1500	50 × 105	6.1	0.90	114	72	27102	67102
	2200	65 × 105	7.1	1.35	81	52	17152	57152
	3300	65 × 105	8.3	1.35	81	52	27152	67152
	4700	65 × 105	10.1	1.98	55	35	17222	57222
	6800	76 × 105	11.2	1.98	55	35	27222	67222
	10000	76 × 105	13.5	2.97	37	24	17332	57332
	15000	76 × 146	13.9	2.97	37	24	27332	67332
	22000	76 × 146	16.4	4.23	26	17	17472	57472
	33000	76 × 146	17.3	5.04	23	15	17562	57562

### ADDITIONAL ELECTRICAL DATA

Inductance	Equivalent series inductance (ESL)
case ∅ D = 35 mm	Max. 13 nH
case ∅ D = 50 mm	Max. 16 nH
case ∅ D = 65 mm	Max. 19 nH
case ∅ D = 76 mm	Max. 20 nH



I<sub>r</sub> = actual ripple current at 100 Hz  
I<sub>r</sub> = rated ripple current at 100 Hz and 85 °C  
(1) Usual like at 85 °C and 1s, neglect  
101 series, case ∅ D = 50, 10000 hours  
case ∅ D = 65, 15000 hours  
102 series, 10000 hours

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For technical questions, contact [aluminumcaps2@vishay.com](mailto:aluminumcaps2@vishay.com)