Aluminum Capacitors
+85 °C, Tubular, Axial Lead, General Purpose

FEATURES

- General purpose capacitor
- Rugged construction
- Largest CV ratings in axial leaded capacitor
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

QUICK REFERENCE DATA

DESCRIPTION	VALUE
Nominal case size Ø D x L in mm	0.75" x 1.125" [19.05 x 28.575] to 1.375" x 4.125" [34.925 x 104.775]
Operating temperature	-40 °C to +85 °C
Rated capacitance range, C_R	15 µF to 220 000 µF
Tolerance on C_R	-10 %, +50 %; -10 %, +75 %
Rated voltage range, U_R	6.3 WV_{DC} to 450 WV_{DC}
Termination	Axial leads
Life validation test at 85 °C	1000 h: ΔCAP ≤ 15 % from initial measurement. ΔESR ≤ 1.5 x initial specified limit. ΔDCL ≤ initial specified limit.
Shelf life at 85 °C	500 h: ΔCAP ≤ 10 % from initial measurement. ΔESR ≤ 1.3 x initial specified limit. ΔDCL ≤ 2.0 x initial specified limit.
DC leakage current (after 5 min charge)	$I = k\sqrt{CV}$ k = 6.0 at +25 °C; k = 36.0 at +85 °C I in µA, C in µF, V in Volts

RIPPLE CURRENT MULTIPLIERS

TEMPERATURE			
AMBIENT TEMPERATURE	MULTIPLIERS		
+75 °C	1.4		
+65 °C	1.7		
+45 °C and below	2.0		
FREQUENCY (Hz)			
WV_{DC}	50 TO 60	300 TO 400	1000 AND UP
0 to 50	0.85	1.10	1.15
51 to 299	0.85	1.15	1.20
300 to up	0.80	1.30	1.40

LOW TEMPERATURE PERFORMANCE

CAPACITANCE RATIO $C^{-40\ °C}/C^{+25\ °C}$ MINIMUM AT 120 Hz	
Rated Voltage (WV_{DC})	Capacitance Remaining
0 to 40	35
41 to 63	45
64 to 100	60
101 to 350	20
351 to 450	15
ESR RATIO $ESR^{-40\ °C}/ESR^{+25\ °C}$ MAXIMUM AT 120 Hz	
Rated Voltage (WV_{DC})	Multiplier
0 to 40	60
41 to 63	55
64 to 100	65
101 to 350	180
351 to 450	190

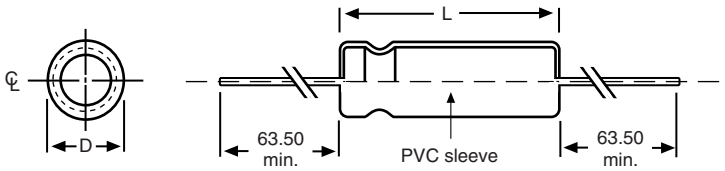
DIMENSIONS in inches [millimeters]

CASE CODE	STYLE 6 AND 7		TYPICAL WEIGHT	CASE CODE	STYLE 6 AND 7		TYPICAL WEIGTH
	D	L			D	L	
GE	0.760 ± 0.020 [19.3 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	0.46 oz. (13 g)	GL	0.760 ± 0.020 [19.3 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	0.74 oz. (21 g)
GJ	0.760 ± 0.020 [19.3 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	0.67 oz. (19 g)	GP	0.760 ± 0.020 [19.3 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	0.88 oz. (25 g)
GS	0.760 ± 0.020 [19.3 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	1.16 oz. (33 g)	KS	1.135 ± 0.020 [28.8 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	2.54 oz. (72 g)
GT	0.760 ± 0.020 [19.3 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	1.34 oz. (38 g)	KT	1.135 ± 0.020 [28.8 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	2.96 oz. (84 g)
HE	0.885 ± 0.020 [22.5 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	0.63 oz. (18 g)	KD	1.135 ± 0.020 [28.8 ± 0.51]	4.141 ± 0.062 [105.2 ± 1.58]	3.35 oz. (95 g)

For technical questions, contact: aluminumcaps4@vishay.com

DIMENSIONS in inches [millimeters]							
CASE CODE	STYLE 6 AND 7		TYPICAL WEIGHT	CASE CODE	STYLE 6 AND 7		TYPICAL WEIGTH
	D	L			D	L	
HJ	0.885 ± 0.020 [22.5 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	0.95 oz. (27 g)	LE	1.260 ± 0.020 [32.0 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	1.13 oz. (32 g)
HL	0.885 ± 0.020 [22.5 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	1.02 oz. (29 g)	LJ	1.260 ± 0.020 [32.0 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	1.62 oz. (46 g)
HP	0.885 ± 0.020 [22.5 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	1.38 oz. (39 g)	LL	1.260 ± 0.020 [32.0 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	2.11 oz. (60 g)
HS	0.885 ± 0.020 [22.5 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	1.73 oz. (49 g)	LP	1.260 ± 0.020 [32.0 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	2.65 oz. (75 g)
HT	0.885 ± 0.020 [22.5 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	2.08 oz. (59 g)	LS	1.260 ± 0.020 [32.0 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	3.14 oz. (89 g)
JE	1.010 ± 0.020 [25.7 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	0.81 oz. (23 g)	LT	1.260 ± 0.020 [32.0 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	3.63 oz. (103 g)
JJ	1.010 ± 0.020 [25.7 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	1.02 oz. (29 g)	LD	1.260 ± 0.020 [32.0 ± 0.51	4.141 ± 0.062 [105.2 ± 1.58]	4.16 oz. (118 g)
JL	1.010 ± 0.020 [25.7 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	1.55 oz. (44 g)	ME	1.375 ± 0.020 [34.9 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	1.38 oz. (39 g)
JP	1.010 ± 0.020 [25.7 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	1.87 oz. (53 g)	MJ	1.375 ± 0.020 [34.9 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	1.98 oz. (56 g)
JS	1.010 ± 0.020 [25.7 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	2.22 oz. (63 g)	ML	1.375 ± 0.020 [34.9 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	2.57 oz. (73 g)
JT	1.010 ± 0.020 [25.7 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	2.54 oz. (72 g)	MP	1.375 ± 0.020 [34.9 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	3.21 oz. (91 g)
KE	1.135 ± 0.020 [28.8 ± 0.51]	1.141 ± 0.062 [29.0 ± 1.58]	0.92 oz. (26 g)	MS	1.375 ± 0.020 [34.9 ± 0.51]	3.141 ± 0.062 [79.8 ± 1.58]	3.81 oz. (108 g)
KJ	1.135 ± 0.020 [28.8 ± 0.51]	1.641 ± 0.062 [41.7 ± 1.58]	1.31 oz. (37 g)	MT	1.375 ± 0.020 [34.9 ± 0.51]	3.641 ± 0.062 [92.5 ± 1.58]	4.44 oz. (126 g)
KL	1.135 ± 0.020 [28.8 ± 0.51]	2.141 ± 0.062 [54.4 ± 1.58]	1.73 oz. (49 g)	MD	1.375 ± 0.020 [34.9 ± 0.51]	4.141 ± 0.062 [105.2 ± 1.58]	5.04 oz. (143 g)
KP	1.135 ± 0.020 [28.8 ± 0.51]	2.641 ± 0.062 [67.1 ± 1.58]	2.15 oz. (61 g)	-	-	-	-

DIMENSIONS AND AVAILABLE FORMS



Lead diameter
No. 18 AWG (0.040" [1.016 mm] Dia.)

ORDERING EXAMPLE

Electrolytic capacitor 53D series: 53D 282 G 025 GJ 6

DESCRIPTION	
CODE	EXPLANATION
53D	Product type
282	Capacitance value (2800 µF)
G	Tolerance (G = -10 %/+75 %; F = -10 %/+50 %)
025	Voltage rating at 85 °C (025 = 25 V)
GJ	Can size (see Dimensions table)
6	Sleeve and sealing (6 = P.V.C. sleeve)

Note

- For lead (Pb)-free/RoHS compliant products add suffix “E3” to part number.
  Example: 53D282G025GJ6E3

ELECTRICAL DATA AND ORDERING INFORMATION

CAPACITANCE (µF)	CASE CODE	PART NUMBER	MAX. ESR AT +25 °C 120 Hz (mΩ)	MAX. RMS RIPPLE AT +85 °C 120 Hz (mA)
16 WV_{DC} AT +85 °C, SURGE = 18 V				
6900.0	HJ	53D692G016HJ6	73	2150
10 000.0	HL	53D103G016HL6	52	2840
25 WV_{DC} AT +85 °C, SURGE = 35 V				
2800.0	GJ	53D282G025GJ6	103	1650
4300.0	HJ	53D432G025HJ6	72	2170
6200.0	HL	53D622G025HL6	51	2870
11 000.0	JP	53D113G025JP6	33	4230
35 WV_{DC} AT +85 °C, SURGE = 45 V				
1100.0	GE	53D112G035GE6	219	980
2100.0	GJ	53D212G035GJ6	111	1590
3200.0	HJ	53D322G035HJ6	77	2090
4700.0	HL	53D472G035HL6	54	2780
8300.0	JP	53D832G035JP6	34	4110
50 WV_{DC} AT +85 °C, SURGE = 70 V				
1000.0	GE	53D102G050GE6	231	950
1300.0	GJ	53D132G050GJ6	131	1470
1900.0	HJ	53D192G050HJ6	94	1900
2800.0	HL	53D282G050HL6	65	2540
3800.0	JL	53D382G050JL6	51	3090
5000.0	JP	53D502G050JP6	40	3810
63 WV_{DC} AT +85 °C, SURGE = 80 V				
1000.0	GJ	53D102G063GJ6	145	1400
2200.0	HL	53D222G063HL6	86	2210
200 WV_{DC} AT +85 °C, SURGE = 250 V				
350.0	JL	53D351F200JL6	499	1000
460.0	JP	53D461F200JP6	379	1250
250 WV_{DC} AT +85 °C, SURGE = 300 V				
56.0	GE	53D560F250GE6	3035	263
100.0	GJ	53D101F250GJ6	1593	420
130.0	HJ	53D131F250HJ6	1238	520
400 WV_{DC} AT +85 °C, SURGE = 450 V				
100.0	JL	53D101F400JL6	1524	560
140.0	JS	53D141F400JS6	1084	790
150.0	JS	53D151F400JS6	1011	820

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