

## Aluminum Capacitors + 105 °C, Tubular Radial Lead

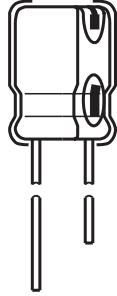


Fig.1 Component outline

### FEATURES

- Wide temperature range
- Radial design in two and three lead configuration
- Ideal SMPS output filter

QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Nominal case size Ø D x L in mm	0.75" x 1.125" [1.905 x 28.575] to 1.0" x 3.625" [25.4 x 92.075]
Operating temperature	- 55 °C to + 105 °C
Rated capacitance range, C <sub>R</sub>	22 µF to 27 000 µF
Tolerance on C <sub>R</sub>	- 10 %, + 50 %
Rated voltage range, U <sub>R</sub>	6.3 WVDC to 250 WVDC
Termination	radial leads
Life validation test at + 105 °C	2000 h: ΔCAP ≤ 15 % from initial measurement ΔESR ≤ 1.5 x initial specified limit ΔDCL ≤ initial specified limit
Shelf life at + 105 °C	500 h: ΔCAP ≤ 10 % from initial measurement ΔESR ≤ 1.15 x initial specified limit ΔDCL ≤ 2 x initial specified limit
DC leakage current at + 25 °C	$I = K \sqrt{CV}$ K = 0.5 I in µA, C in µF, V in volts

RIPPLE CURRENT MULTIPLIERS					
TEMPERATURE					
Ambient Temperature		Multipliers			
+ 105 °C		0.4			
+ 85 °C		1.0			
+ 65 °C		1.4			
+ 45 °C		1.7			
+ 25 °C		2.0			
FREQUENCY (Hz)					
Rated WVDC	50 to 60	100 to 120	300 to 400	1000	20 000
0 to 60	0.60	0.75	0.80	0.90	1.0
61 to 250	0.43	0.54	0.75	0.85	1.0

LOW TEMPERATURE PERFORMANCE			
CAPACITANCE RATIO C - 55 °C / C + 25 °C MINIMUM AT 120 Hz			
Rated Voltage (WVDC)	6.3 to 25	40 to 100	150 to 250
Capacitance Remaining	75 %	80 %	65 %
ESR RATIO ESR - 55 °C / ESR + 25 °C MAXIMUM AT 120 Hz			
Rated Voltage (WVDC)	0 to 12	13 to 40	41 to 250
Multipliers	8	10	16
ESL (TYPICAL VALUES AT 1 MHz TO 10 MHz)			
Nominal Diameter	0.75 [19.0.]	0.875 [22.0.]	1.00 [25.0.]
Typical ESL (nH)	10	11	13

DIMENSIONS in inches [millimeters]					
CASE CODE	STYLE 1 STYLE 7		OVERALL LENGTH H (MAX.)	LEAD SPACING <sup>(1)</sup> S ± 0.015 [0.4]	TYPICAL WEIGHT oz. (g)
	D ± 0.015 [0.4]	L ± 0.062 [1.6]			
GE	0.770 [19.6]	1.150 [29.2]	1.246 [31.6]	0.250 [6.4]	0.46 (13)
GJ	0.770 [19.6]	1.650 [41.9]	1.746 [44.3]	0.250 [6.4]	0.67 (19)
GL	0.770 [19.6]	2.150 [54.6]	2.246 [57.0]	0.250 [6.4]	0.74 (21)
GP	0.770 [19.6]	2.650 [67.3]	2.746 [69.7]	0.250 [6.4]	0.88 (25)
GS	0.770 [19.6]	3.150 [80.0]	3.246 [82.4]	0.250 [6.4]	1.16 (33)
GT	0.770 [19.6]	3.650 [92.7]	3.746 [95.1]	0.250 [6.4]	1.34 (38)
HE	0.895 [22.7]	1.150 [29.2]	1.246 [31.6]	0.300 [7.6]	0.63 (18)
HJ	0.895 [22.7]	1.650 [41.9]	1.746 [44.3]	0.300 [7.6]	0.95 (27)
HL	0.895 [22.7]	2.150 [54.6]	2.246 [57.0]	0.300 [7.6]	1.02 (29)
HP	0.895 [22.7]	2.650 [67.3]	2.746 [69.7]	0.300 [7.6]	1.37 (39)



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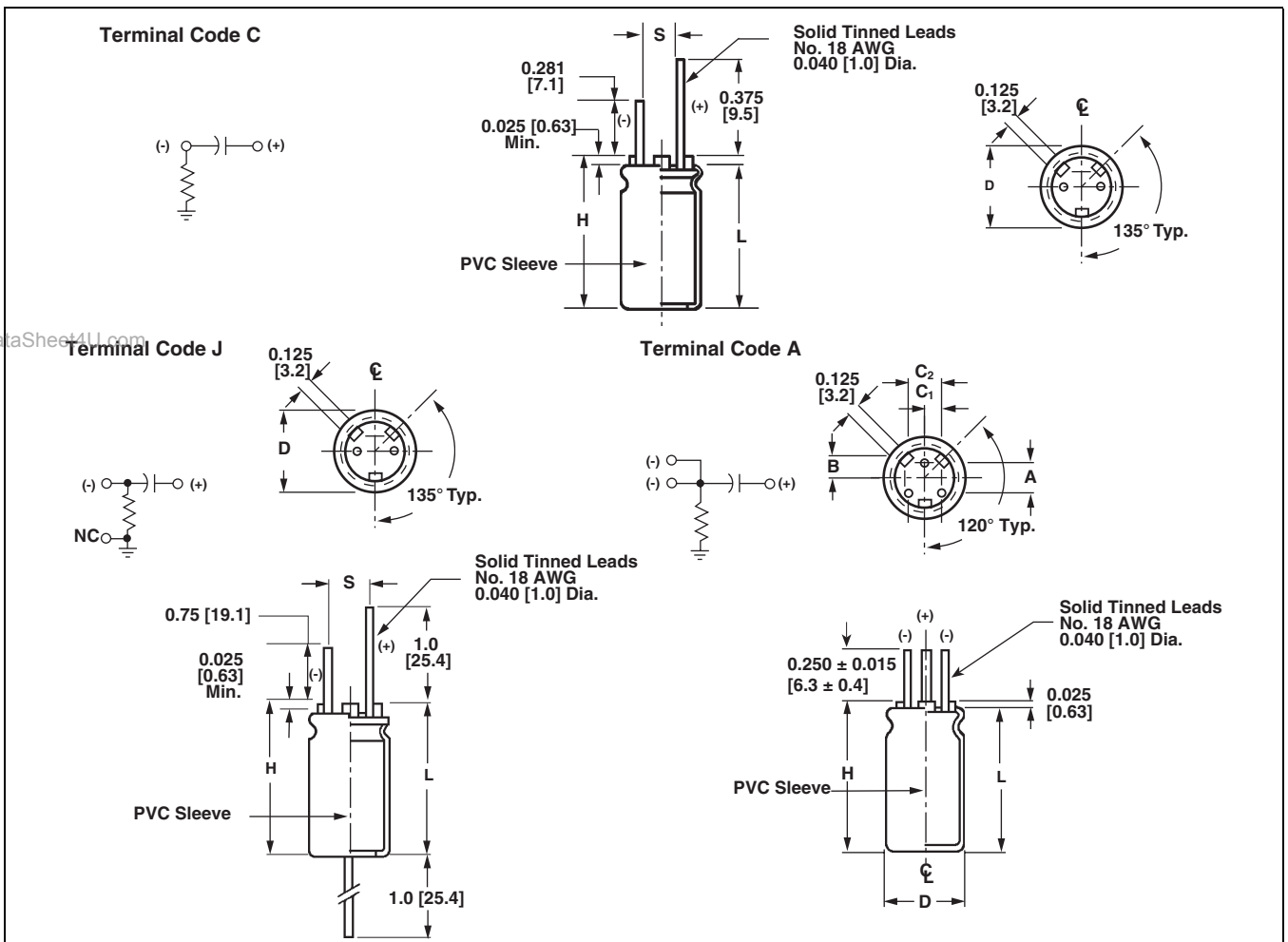
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DIMENSIONS in inches [millimeters]					
CASE CODE	STYLE 1 STYLE 7		OVERALL LENGTH H (MAX.)	LEAD SPACING <sup>(1)</sup> S ± 0.015 [0.4]	TYPICAL WEIGHT oz. (g)
	D ± 0.015 [0.4]	L ± 0.062 [1.6]			
HS	0.895 [22.7]	3.150 [80.0]	3.246 [82.4]	0.300 [7.6]	1.73 (49)
HT	0.895 [22.7]	3.650 [92.7]	3.746 [95.1]	0.300 [7.6]	2.08 (59)
JE	1.020 [25.9]	1.150 [29.2]	1.246 [31.6]	0.400 [10.2]	0.81 (23)
JJ	1.020 [25.9]	1.650 [41.9]	1.746 [44.3]	0.400 [10.2]	1.02 (29)
JL	1.020 [25.9]	2.150 [54.6]	2.246 [57.0]	0.400 [10.2]	1.20 (34)
JP	1.020 [25.9]	2.650 [67.3]	2.746 [69.7]	0.400 [10.2]	1.87 (53)
JS	1.020 [25.9]	3.150 [80.0]	3.246 [82.4]	0.400 [10.2]	2.22 (63)
JT	1.020 [25.9]	3.650 [92.7]	3.746 [95.1]	0.400 [10.2]	2.54 (72)
LEAD SPACING					
CASE DIAMETER	A ± 0.015 [0.4]	B ± 0.015 [0.4]	C <sub>1</sub> ± 0.015 [0.4]	C <sub>2</sub> ± 0.015 [0.4]	
0.750 [19.1]	0.300 [7.6]	0.167 [4.23]	0.100 [2.5]	0.200 [5.1]	
0.875 [22.2]	0.400 [10.2]	0.228 [5.79]	0.150 [3.8]	0.300 [7.6]	
1.000 [25.4]	0.400 [10.2]	0.228 [5.79]	0.150 [3.8]	0.300 [7.6]	

Note

(1) Type U673D only

DIMENSIONS in inches [millimeters] AND AVAILABLE FORMS



# U673D and U674D

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## ORDERING EXAMPLE

Electrolytic capacitor U673D and U674D series: U673D 228 F 6R3 GE 1 C

DESCRIPTION	
CODE	EXPLANATION
U673D	product type
228	capacitance value (2200 μF)
F	capacitance tolerance (F = - 10 %, + 50 %; H = - 10 %, + 100 %)
6R3	voltage rating at 105 °C (6R3 = 6.3 V)
GE	can size (see dimensions table)
1	sleeve and sealing (1 = p.v.c. sleeve)
C	terminal code (see available forms tables)

STANDARD RATINGS in inches [millimeters]						
CAPACITANCE (μF)	PART NUMBER	NOMINAL CASE SIZE D x L	MAX. ESR AT + 25 °C (mΩ)		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 40 kHz	MAX. Z AT 100 kHz (mΩ)
			120 Hz	20 kHz to 40 kHz		
<b>6.3 WVDC AT 105 °C, SURGE = 9 V</b>						
2200.0	U673D228F6R3GE1C	0.770 x 1.150 [19.6 x 29.2]	105.0	81.0	2.30	83.0
4700.0	U673D478F6R3GJ1C	0.770 x 1.650 [19.6 x 41.9]	53.0	41.0	3.70	43.0
6800.0	U673D688F6R3GL1C	0.770 x 2.150 [19.6 x 54.6]	36.0	28.0	4.95	30.0
8200.0	U673D828F6R3GP1C	0.770 x 2.650 [19.6 x 67.3]	28.0	22.7	6.11	25.0
10 000.0	U673D109F6R3GS1C	0.770 x 3.150 [19.6 x 80.0]	23.0	19.0	7.20	21.0
12 000.0	U673D129F6R3GT1C	0.770 x 3.650 [19.6 x 92.7]	21.0	17.0	8.14	19.0
3300.0	U673D338F6R3HE1C	0.895 x 1.150 [22.7 x 29.2]	74.0	58.0	3.00	60.0
6800.0	U673D688F6R3HJ1C	0.895 x 1.650 [22.7 x 41.9]	38.0	39.0	4.73	41.0
10 000.0	U673D109F6R3HL1C	0.895 x 2.150 [22.7 x 54.6]	27.0	22.0	6.20	24.0
15 000.0	U673D159F6R3HP1C	0.895 x 2.650 [22.7 x 67.3]	21.0	17.4	7.62	19.0
18 000.0	U673D189F6R3HS1C	0.895 x 3.150 [22.7 x 80.0]	18.0	15.0	8.83	17.0
22 000.0	U673D229F6R3HT1C	0.895 x 3.650 [22.7 x 92.7]	15.8	13.3	10.10	15.0
4700.0	U673D478F6R3JE1C	1.020 x 1.150 [25.9 x 29.2]	60.0	48.0	3.60	50.0
10 000.0	U673D109F6R3JJ1C	1.020 x 1.650 [25.9 x 41.9]	32.0	26.0	5.54	28.0
15 000.0	U673D159F6R3JL1C	1.020 x 2.150 [25.9 x 54.6]	22.6	18.8	7.30	21.0
18 000.0	U673D189F6R3JP1C	1.020 x 2.650 [25.9 x 67.3]	18.0	15.2	8.81	17.0
22 000.0	U673D229F6R3JS1C	1.020 x 3.150 [25.9 x 80.0]	15.4	13.0	10.20	14.0
27 000.0	U673D279F6R3JT1C	1.020 x 3.650 [25.9 x 92.7]	13.4	11.5	11.60	13.0
<b>7.5 WVDC AT 105 °C, SURGE = 10 V</b>						
1800.0	U673D188F7R5GE1C	0.770 x 1.150 [19.6 x 29.2]	110.0	82.0	2.30	84.0
3900.0	U673D398F7R5GJ1C	0.770 x 1.650 [19.6 x 41.9]	55.0	41.0	3.70	52.0
5600.0	U673D568F7R5GL1C	0.770 x 2.150 [19.6 x 54.6]	38.0	29.0	4.93	31.0
8200.0	U673D828F7R5GP1C	0.770 x 2.650 [19.6 x 67.3]	29.5	22.8	6.10	25.0
10 000.0	U673D109F7R5GS1C	0.770 x 3.150 [19.6 x 80.0]	25.8	20.0	7.04	22.0
12 000.0	U673D129F7R5GT1C	0.770 x 3.650 [19.6 x 92.7]	22.0	17.4	8.06	19.0
3300.0	U673D338F7R5HE1C	0.895 x 1.150 [22.7 x 29.2]	76.0	58.4	2.97	61.0
5600.0	U673D568F7R5HJ1C	0.895 x 1.650 [22.7 x 41.9]	39.5	30.6	4.72	33.0
8200.0	U673D828F7R5HL1C	0.895 x 2.150 [22.7 x 54.6]	27.7	21.8	6.23	24.0
12 000.0	U673D129F7R5HP1C	0.895 x 2.650 [22.7 x 67.3]	22.0	17.6	7.58	20.0
15 000.0	U673D159F7R5HS1C	0.895 x 3.150 [22.7 x 80.0]	18.7	15.0	8.82	17.0
18 000.0	U673D189F7R5HT1C	0.895 x 3.650 [22.7 x 92.7]	16.4	13.5	9.97	15.0
3900.0	U673D398F7R5JE1C	1.020 x 1.150 [25.9 x 29.2]	62.0	48.0	3.55	50.0
8200.0	U673D828F7R5JJ1C	1.020 x 1.650 [25.9 x 41.9]	32.0	25.9	5.56	28.0
12 000.0	U673D129F7R5JL1C	1.020 x 2.150 [25.9 x 54.6]	23.5	19.0	7.22	21.0
18 000.0	U673D189F7R5JP1C	1.020 x 2.650 [25.9 x 67.3]	18.3	15.0	8.83	17.0
22 000.0	U673D229F7R5JS1C	1.020 x 3.150 [25.9 x 80.0]	15.8	13.0	10.20	15.0
27 000.0	U673D279F7R5JT1C	1.020 x 3.650 [25.9 x 92.7]	13.8	11.6	11.60	13.0



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Table with columns: CAPACITANCE (µF), PART NUMBER, NOMINAL CASE SIZE D x L, MAX. ESR AT + 25 °C (mΩ) (120 Hz, 20 kHz to 40 kHz), MAX. RIPPLE AT + 85 °C (A) (20 kHz to 40 kHz), MAX. Z AT 100 kHz (mΩ). Rows are grouped by voltage ratings: 10 WVDC AT + 105 °C, SURGE = 12 V; 12 WVDC AT + 105 °C, SURGE = 16 V; 16 WVDC AT 105°C, SURGE = 20 V.

<b>STANDARD RATINGS</b> in inches [millimeters]						
CAPACITANCE ( $\mu$ F)	PART NUMBER	NOMINAL CASE SIZE D x L	MAX. ESR AT + 25 °C ( $m\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 40 kHz	MAX. Z AT 100 kHz ( $m\Omega$ )
			120 Hz	20 kHz to 40 kHz		
<b>16 WVDC AT 105 °C, SURGE = 20 V</b>						
8200.0	U673D828F016HP1C	0.895 x 2.650 [22.7 x 67.3]	24.7	17.9	7.51	20.0
10 000.0	U673D109F016HS1C	0.895 x 3.150 [22.7 x 80.0]	20.7	15.2	8.79	18.0
12 000.0	U673D129F016HT1C	0.895 x 3.650 [22.7 x 92.7]	18.0	13.6	9.93	17.0
2700.0	U673D278F016JE1C	1.020 x 1.150 [25.9 x 29.2]	71.0	50.0	3.49	52.0
5600.0	U673D568F016JJ1C	1.020 x 1.650 [25.9 x 41.9]	36.7	26.7	5.48	29.0
8200.0	U673D828F016JL1C	1.020 x 2.150 [25.9 x 54.6]	26.0	19.2	7.18	22.0
12 000.0	U673D129F016JP1C	1.020 x 2.650 [25.9 x 67.3]	20.5	15.4	8.75	19.0
15 000.0	U673D159F016JS1C	1.020 x 3.150 [25.9 x 80.0]	17.4	13.3	10.20	17.0
18 000.0	U673D189F016JT1C	1.020 x 3.650 [25.9 x 92.7]	15.3	11.8	11.50	17.0
<b>20 WVDC AT + 105 °C, SURGE = 30 V</b>						
1000.0	U673D108F020GE1C	0.770 x 1.150 [19.6 x 29.2]	140.0	84.0	2.16	87.0
1800.0	U673D188F020GJ1C	0.770 x 1.650 [19.6 x 41.9]	67.0	44.0	3.56	47.0
2700.0	U673D278F020GL1C	0.770 x 2.150 [19.6 x 54.6]	45.0	30.0	4.81	33.0
3900.0	U673D398F020GP1C	0.770 x 2.650 [19.6 x 67.3]	34.9	23.9	6.96	27.0
4700.0	U673D478F020GS1C	0.770 x 3.150 [19.6 x 80.0]	28.7	19.9	7.05	24.0
5600.0	U673D568F020GT1C	0.770 x 3.650 [19.6 x 92.7]	24.6	17.0	8.09	21.0
1500.0	U673D158F020HE1C	0.895 x 1.150 [22.7 x 29.2]	94.0	59.0	2.86	62.0
3300.0	U673D338F020HJ1C	0.895 x 1.650 [22.7 x 41.9]	46.9	32.0	4.60	35.0
4700.0	U673D478F020HL1C	0.895 x 2.150 [22.7 x 54.6]	32.0	22.7	6.10	26.0
6800.0	U673D688F020HP1C	0.895 x 2.650 [22.7 x 67.3]	25.0	18.0	7.49	21.0
8200.0	U673D828F020HS1C	0.895 x 3.150 [22.7 x 80.0]	21.0	15.3	8.77	19.0
10 000.0	U673D109F020HT1C	0.895 x 3.650 [22.7 x 92.7]	18.0	13.6	9.93	18.0
2200.0	U673D228F020JE1C	1.020 x 1.150 [25.9 x 29.2]	72.0	49.0	3.48	52.0
4700.0	U673D478F020JJ1C	1.020 x 1.650 [25.9 x 41.9]	37.0	26.0	5.47	29.0
6800.0	U673D688F020JL1C	1.020 x 2.150 [25.9 x 54.6]	26.0	19.3	7.16	23.0
8200.0	U673D828F020JP1C	1.020 x 2.650 [25.9 x 67.3]	20.7	15.5	8.72	19.0
10 000.0	U673D109F020JS1C	1.020 x 3.150 [25.9 x 80.0]	17.9	13.6	10.10	18.0
12 000.0	U673D129F020JT1C	1.020 x 3.650 [25.9 x 92.7]	15.8	12.0	11.40	16.0
<b>25 WVDC AT + 105 °C, SURGE = 35 V</b>						
820.0	U673D827F025GE1C	0.770 x 1.150 [19.6 x 29.2]	143.0	85.0	2.23	88.0
1500.0	U673D158F025GJ1C	0.770 x 1.650 [19.6 x 41.9]	73.0	44.0	3.56	47.0
2200.0	U673D228F025GL1C	0.770 x 2.150 [19.6 x 54.6]	49.0	30.5	4.82	33.0
3300.0	U673D338F025GP1C	0.770 x 2.650 [19.6 x 67.3]	37.0	23.9	5.96	27.0
3900.0	U673D398F025GS1C	0.770 x 3.150 [19.6 x 80.0]	31.0	20.0	7.00	23.0
4700.0	U673D478F025GT1C	0.770 x 3.650 [19.6 x 92.7]	26.7	17.5	8.04	21.0
1200.0	U673D128F025HE1C	0.895 x 1.150 [22.7 x 29.2]	101.0	62.9	2.86	66.0
2700.0	U673D278F025HJ1C	0.895 x 1.650 [22.7 x 41.9]	50.0	32.0	4.61	35.0
3900.0	U673D398F025HL1C	0.895 x 2.150 [22.7 x 54.6]	35.0	22.9	6.08	26.0
4700.0	U673D478F025HP1C	0.895 x 2.650 [22.7 x 67.3]	27.0	18.0	7.47	21.0
6800.0	U673D688F025HS1C	0.895 x 3.150 [22.7 x 80.0]	22.7	15.4	8.74	19.0
8200.0	U673D828F025HT1C	0.895 x 3.650 [22.7 x 92.7]	19.6	13.6	9.93	17.0
1800.0	U673D188F025JE1C	1.020 x 1.150 [25.9 x 29.2]	79.0	51.0	3.45	53.0
3900.0	U673D398F025JJ1C	1.020 x 1.650 [25.9 x 41.9]	40.0	26.9	5.46	30.0
5600.0	U673D568F025JL1C	1.020 x 2.150 [25.9 x 54.6]	28.0	19.0	7.14	22.0
6800.0	U673D688F025JP1C	1.020 x 2.650 [25.9 x 67.3]	22.0	15.7	8.66	19.0
8200.0	U673D828F025JS1C	1.020 x 3.150 [25.9 x 80.0]	18.7	13.5	10.10	17.0
10 000.0	U673D109F025JT1C	1.020 x 3.650 [25.9 x 92.7]	16.4	12.0	11.40	15.0



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Table with columns: CAPACITANCE (µF), PART NUMBER, NOMINAL CASE SIZE D x L, MAX. ESR AT + 25 °C (mΩ) (120 Hz, 20 kHz to 40 kHz), MAX. RIPPLE AT + 85 °C (A) (20 kHz to 40 kHz), MAX. Z AT 100 kHz (mΩ). Rows are grouped by voltage ratings: 30 WVDC AT + 105 °C, SURGE = 40 V; 40 WVDC AT + 105 °C, SURGE = 55 V; 50 WVDC AT + 105 °C, SURGE = 75 V.

# U673D and U674D

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<b>STANDARD RATINGS</b> in inches [millimeters]						
CAPACITANCE ( $\mu$ F)	PART NUMBER	NOMINAL CASE SIZE D x L	MAX. ESR AT + 25 °C ( $m\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 40 kHz	MAX. Z AT 100 kHz ( $m\Omega$ )
			120 Hz	20 kHz to 40 kHz		
<b>50 WVDC AT + 105 °C, SURGE = 75 V</b>						
2200.0	U673D228F050HP1C	0.895 x 2.650 [22.7 x 67.3]	39.0	18.7	7.35	22.0
2700.0	U673D278F050HS1C	0.895 x 3.150 [22.7 x 80.0]	31.4	15.7	8.65	19.0
3300.0	U673D338F050HT1C	0.895 x 3.650 [22.7 x 92.7]	27.0	13.9	9.82	17.0
820.0	U673D828F050JE1C	1.020 x 1.150 [25.9 x 29.2]	112.0	51.4	3.45	54.0
1500.0	U673D158F050JJ1C	1.020 x 1.650 [25.9 x 41.9]	58.0	27.8	5.37	31.0
2200.0	U673D228F050JL1C	1.020 x 2.150 [25.9 x 54.6]	39.0	19.7	7.09	23.0
3300.0	U673D338F050JP1C	1.020 x 2.650 [25.9 x 67.3]	30.0	15.9	8.61	20.0
3900.0	U673D398F050JS1C	1.020 x 3.150 [25.9 x 80.0]	25.0	13.6	10.10	18.0
4700.0	U673D478F050JT1C	1.020 x 3.650 [25.9 x 92.7]	21.6	12.0	11.40	16.0
<b>63 WVDC AT + 105 °C, SURGE = 85 V</b>						
330.0	U673D337F063GE1C	0.770 x 1.150 [19.6 x 29.2]	236.0	89.0	2.13	93.0
680.0	U673D687F063GJ1C	0.770 x 1.650 [19.6 x 41.9]	117.0	47.0	3.44	50.0
1000.0	U673D108F063GL1C	0.770 x 2.150 [19.6 x 54.6]	79.0	33.3	4.61	36.0
1200.0	U673D128F063GP1C	0.770 x 2.650 [19.6 x 67.3]	63.0	27.0	5.61	30.0
1800.0	U673D188F063GS1C	0.770 x 3.150 [19.6 x 80.0]	49.9	22.0	6.71	25.0
2200.0	U673D228F063GT1C	0.770 x 3.650 [19.6 x 92.7]	41.7	18.9	7.74	22.0
560.0	U673D567F063HE1C	0.895 x 1.150 [22.7 x 29.2]	159.0	66.0	2.79	69.0
1000.0	U673D108F063HJ1C	0.895 x 1.650 [22.7 x 41.9]	82.0	35.4	4.38	38.0
1500.0	U673D158F063HL1C	0.895 x 2.150 [22.7 x 54.6]	54.0	24.5	5.87	28.0
2200.0	U673D228F063HP1C	0.895 x 2.650 [22.7 x 67.3]	41.0	19.3	7.24	22.0
2700.0	U673D278F063HS1C	0.895 x 3.150 [22.7 x 80.0]	34.6	16.6	8.42	20.0
3300.0	U673D338F063HT1C	0.895 x 3.650 [22.7 x 92.7]	29.0	14.5	9.61	18.0
680.0	U673D687F063JE1C	1.020 x 1.150 [25.9 x 29.2]	122.0	51.0	3.70	54.0
1500.0	U673D158F063JJ1C	1.020 x 1.650 [25.9 x 41.9]	63.0	28.0	5.54	31.0
2200.0	U673D228F063JL1C	1.020 x 2.150 [25.9 x 54.6]	42.0	20.6	6.93	24.0
2700.0	U673D278F063JP1C	1.020 x 2.650 [25.9 x 67.3]	32.9	16.5	8.45	20.0
3900.0	U673D398F063JS1C	1.020 x 3.150 [25.9 x 80.0]	27.0	14.0	9.85	18.0
4700.0	U673D478F063JT1C	1.020 x 3.650 [25.9 x 92.7]	23.3	12.4	11.20	16.0
<b>75 WVDC AT + 105 °C, SURGE = 100 V</b>						
270.0	U673D277F075GE1C	0.770 x 1.150 [19.6 x 29.2]	311.0	141.0	1.73	145.0
560.0	U673D567F075GJ1C	0.770 x 1.650 [19.6 x 41.9]	150.0	70.0	2.84	73.0
820.0	U673D827F075GL1C	0.770 x 2.150 [19.6 x 54.6]	101.0	48.0	3.84	51.0
1200.0	U673D128F075GP1C	0.770 x 2.650 [19.6 x 67.3]	77.0	37.3	4.77	40.0
1500.0	U673D158F075GS1C	0.770 x 3.150 [19.6 x 80.0]	63.0	30.7	5.68	34.0
1800.0	U673D188F075GT1C	0.770 x 3.650 [19.6 x 92.7]	53.0	26.4	6.55	30.0
390.0	U673D397F075HE1C	0.895 x 1.150 [22.7 x 29.2]	214.0	100.0	2.27	104.0
820.0	U673D827F075HJ1C	0.895 x 1.650 [22.7 x 41.9]	104.0	50.0	3.67	53.0
1200.0	U673D128F075HL1C	0.895 x 2.150 [22.7 x 54.6]	73.0	36.0	4.83	39.0
1800.0	U673D188F075HP1C	0.895 x 2.650 [22.7 x 67.3]	54.0	27.5	6.06	31.0
2200.0	U673D228F075HS1C	0.895 x 3.150 [22.7 x 80.0]	45.0	23.0	7.12	26.0
2700.0	U673D278F075HT1C	0.895 x 3.650 [22.7 x 92.7]	37.0	19.8	8.23	23.0
560.0	U673D567F075JE1C	1.020 x 1.150 [25.9 x 29.2]	159.0	78.0	2.81	81.0
1200.0	U673D128F075JJ1C	1.020 x 1.650 [25.9 x 41.9]	82.0	41.4	4.40	44.0
1800.0	U673D188F075JL1C	1.020 x 2.150 [25.9 x 54.6]	53.9	28.0	5.95	30.0
2200.0	U673D228F075JP1C	1.020 x 2.650 [25.9 x 67.3]	41.8	22.2	7.29	25.0
2700.0	U673D278F075JS1C	1.020 x 3.150 [25.9 x 80.0]	33.7	18.5	8.60	22.0
3300.0	U673D338F075JT1C	1.020 x 3.650 [25.9 x 92.7]	29.0	16.2	9.80	19.0



Aluminum Capacitors  
+ 105 °C, Tubular Radial Lead

Vishey Sprague

STANDARD RATINGS in inches [millimeters]						
CAPACITANCE (μF)	PART NUMBER	NOMINAL CASE SIZE D x L	MAX. ESR AT + 25 °C (mΩ)		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 40 kHz	MAX. Z AT 100 kHz (mΩ)
			120 Hz	20 kHz to 40 kHz		
<b>100 WVDC AT + 105 °C, SURGE = 125 V</b>						
150.0	U673D157F100GE1C	0.770 x 1.150 [19.6 x 29.2]	698.0	324.0	1.14	326.0
270.0	U673D277F100GJ1C	0.770 x 1.650 [19.6 x 41.9]	329.0	154.0	1.92	156.0
390.0	U673D397F100GL1C	0.770 x 2.150 [19.6 x 54.6]	221.0	104.0	2.60	106.0
560.0	U673D567F100GP1C	0.770 x 2.650 [19.6 x 67.3]	164.0	78.0	3.39	80.0
680.0	U673D687F100GS1C	0.770 x 3.150 [19.6 x 80.0]	131.0	63.0	3.96	65.0
820.0	U673D827F100GT1C	0.770 x 3.650 [19.6 x 92.7]	110.0	53.0	4.60	54.0
220.0	U673D227F100HE1C	0.895 x 1.150 [22.7 x 29.2]	452.0	212.0	1.55	215.0
390.0	U673D397F100HJ1C	0.895 x 1.650 [22.7 x 41.9]	216.0	103.0	2.57	106.0
680.0	U673D687F100HL1C	0.895 x 2.150 [22.7 x 54.6]	143.0	69.0	3.49	71.0
820.0	U673D827F100HP1C	0.895 x 2.650 [22.7 x 67.3]	107.0	52.0	4.37	53.0
1000.0	U673D108F100HS1C	0.895 x 3.150 [22.7 x 80.0]	89.0	44.0	5.15	45.0
1200.0	U673D128F100HT1C	0.895 x 3.650 [22.7 x 92.7]	76.0	38.0	5.93	39.0
270.0	U673D277F100JE1C	1.020 x 1.150 [25.9 x 29.2]	337.0	162.0	1.95	163.0
560.0	U673D567F100JJ1C	1.020 x 1.650 [25.9 x 41.9]	163.0	79.0	3.17	81.0
820.0	U673D827F100JL1C	1.020 x 2.150 [25.9 x 54.6]	109.0	54.0	4.27	55.0
1200.0	U673D128F100JP1C	1.020 x 2.650 [25.9 x 67.3]	83.0	42.0	5.28	43.0
1500.0	U673D158F100JS1C	1.020 x 3.150 [25.9 x 80.0]	67.0	34.0	6.29	35.0
1800.0	U673D188F100JT1C	1.020 x 3.650 [25.9 x 92.7]	57.0	29.5	7.26	31.0
<b>150 WVDC AT + 105 °C, SURGE = 200 V</b>						
56.0	U673D566F150GE1C	0.770 x 1.150 [19.6 x 29.2]	1733.0	881.0	0.694	895.0
100.0	U673D107F150GJ1C	0.770 x 1.650 [19.6 x 41.9]	886.0	450.0	1.12	460.0
180.0	U673D187F150GL1C	0.770 x 2.150 [19.6 x 54.6]	569.0	290.0	1.56	297.0
220.0	U673D227F150GP1C	0.770 x 2.650 [19.6 x 67.3]	419.0	215.0	1.99	220.0
330.0	U673D337F150GS1C	0.770 x 3.150 [19.6 x 80.0]	333.0	170.0	2.41	175.0
390.0	U673D397F150GT1C	0.770 x 3.650 [19.6 x 92.7]	276.0	141.0	2.83	148.0
82.0	U673D826F150HE1C	0.895 x 1.150 [22.7 x 29.2]	1152.0	588.0	0.936	592.0
180.0	U673D187F150HL1C	0.895 x 1.650 [22.7 x 41.9]	579.0	296.0	1.51	300.0
270.0	U673D277F150HL1C	0.895 x 2.150 [22.7 x 54.6]	376.0	193.0	2.09	198.0
390.0	U673D397F150HP1C	0.895 x 2.650 [22.7 x 67.3]	279.0	143.0	2.66	148.0
470.0	U673D477F150HT1C	0.895 x 3.150 [22.7 x 80.0]	222.0	115.0	3.19	120.0
560.0	U673D567F150HT1C	0.895 x 3.650 [22.7 x 92.7]	185.0	96.0	3.74	100.0

ORIGINAL RATINGS						
CAPACITANCE (μF)	PART NUMBER (1)	CASE CODE	MAX. ESR AT + 25 °C (mΩ)		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 100 kHz	MAX. IMPEDANCE AT 100 kHz (mΩ)
			120 Hz	20 kHz		
<b>6.3 WVDC at 105 °C, SURGE = 9 V</b>						
1500.0	U673D158H6R3GE1C	GE	98.0	69.0	2.48	70.0
2200.0	U673D228H6R3HE1C	HE	71.0	51.0	3.18	52.0
2700.0	U673D278H6R3JE1C	JE	62.0	47.0	3.60	49.0
3900.0	U673D398H6R3HJ1C	HJ	41.0	30.0	4.76	31.0
5600.0	U673D568H6R3JJ1C	JJ	33.0	25.0	5.66	27.0
6800.0	U673D688H6R3GS1C	GS	23.0	18.0	7.40	19.0
8200.0	U673D828H6R3JL1C	JL	23.0	18.0	7.41	20.0
10 000.0	U673D109H6R3HS1C	HS	19.0	15.0	8.85	17.0
12 000.0	U673D129H6R3JP1C	JP	19.0	15.0	8.86	17.0
15 000.0	U673D159H6R3JS1C	JS	15.0	13.0	10.20	14.0
18 000.0	U673D189H6R3JT1C	JT	14.0	12.0	11.40	13.0

**Note**

(1) For applications requiring single ended, 3 lead capacitors, change the Part Number U673D to Part Number U674D. Type U674D is only available in terminal style "A".



# U673D and U674D

Vishay Sprague

Aluminum Capacitors  
+ 105 °C, Tubular Radial Lead

ORIGINAL RATINGS						
CAPACITANCE ( $\mu$ F)	PART NUMBER (1)	CASE CODE	MAX. ESR AT + 25 °C (m $\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 100 kHz	MAX. IMPEDANCE AT 100 kHz (m $\Omega$ )
			120 Hz	20 kHz		
<b>7.5 WVDC AT + 105 °C, SURGE = 10 V</b>						
1200.0	U673D128H7R5GE1C	GE	115.0	76.0	2.36	78.0
1800.0	U673D188H7R5HE1C	HE	80.0	55.0	3.06	56.0
2700.0	U673D278H7R5JE1C	JE	62.0	45.0	3.68	46.0
3900.0	U673D398H7R5HJ1C	HJ	39.0	28.0	4.92	29.0
4700.0	U673D478H7R5JJ1C	JJ	35.0	25.0	5.66	26.0
5600.0	U673D568H7R5HL1C	HL	28.0	20.0	6.50	22.0
6800.0	U673D688H7R5HP1C	HP	23.0	17.0	7.70	19.0
8200.0	U673D828H7R5JL1C	JL	23.0	18.0	7.41	19.0
10 000.0	U673D109H7R5JP1C	JP	19.0	15.0	8.86	16.0
12 000.0	U673D129H7R5JS1C	JS	17.0	13.0	10.20	14.0
15 000.0	U673D159H7R5JT1C	JT	14.0	12.0	11.40	13.0
<b>10 WVDC AT + 105 °C, SURGE = 14 V</b>						
1000.0	U673D108H010GE1C	GE	123.0	76.0	2.36	77.0
1500.0	U673D158H010HE1C	HE	89.0	56.0	3.03	58.0
2200.0	U673D228H010JE1C	JE	67.0	45.0	3.68	47.0
3300.0	U673D338H010HJ1C	HJ	43.0	29.0	4.84	30.0
3900.0	U673D398H010GP1C	GP	31.0	20.0	6.51	23.0
4700.0	U673D478H010JJ1C	JJ	35.0	24.0	5.78	26.0
5600.0	U673D568H010HP1C	HP	22.0	15.0	8.20	18.0
6800.0	U673D688H010JL1C	JL	23.0	16.0	7.86	19.0
8200.0	U673D828H010JP1C	JP	19.0	14.0	9.17	17.0
10 000.0	U673D109H010JS1C	JS	16.0	12.0	10.60	15.0
12 000.0	U673D129H010JT1C	JT	14.0	11.0	11.90	14.0
<b>12 WVDC AT + 105 °C, SURGE = 16 V</b>						
1000.0	U673D108H012GE1C	GE	126.0	76.0	2.36	79.0
1500.0	U673D158H012HE1C	HE	88.0	55.0	3.06	58.0
2200.0	U673D228H012JE1C	JE	68.0	43.0	3.77	45.0
2700.0	U673D278H012GL1C	GL	41.0	25.0	5.31	27.0
3300.0	U673D338H012HJ1C	HJ	45.0	29.0	4.84	31.0
3900.0	U673D398H012JJ1C	JJ	38.0	25.0	5.66	28.0
4700.0	U673D478H012HL1C	HL	30.0	19.0	6.67	21.0
5600.0	U673D568H012JL1C	JL	24.0	17.0	7.62	21.0
6800.0	U673D688H012HS1C	HS	19.0	13.0	9.51	17.0
8200.0	U673D828H012JP1C	JP	19.0	14.0	9.17	18.0
10 000.0	U673D109H012JS1C	JS	16.0	12.0	10.60	16.0
12 000.0	U673D129H012JT1C	JT	14.0	10.0	12.40	14.0
<b>15 WVDC AT + 105 °C, SURGE = 20 V</b>						
820.0	U673D827H015GE1C	GE	142.0	78.0	2.33	80.0
1500.0	U673D158H015HE1C	HE	86.0	51.0	3.18	53.0
1800.0	U673D188H015JE1C	JE	74.0	46.0	3.64	48.0
2700.0	U673D278H015HJ1C	HJ	47.0	28.0	4.92	30.0
3300.0	U673D338H015GP1C	GP	34.0	20.0	6.51	23.0
3900.0	U673D398H015JJ1C	JJ	37.0	24.0	5.78	27.0
5600.0	U673D568H015JL1C	JL	25.0	17.0	7.62	20.0
6800.0	U673D688H015JP1C	JP	20.0	13.0	9.51	17.0
8200.0	U673D828H015JS1C	JS	17.0	12.0	10.60	16.0
12 000.0	U673D129H015JT1C	JT	15.0	10.0	12.40	14.0

**Note**

(1) For applications requiring single ended, 3 lead capacitors, change the Part Number U673D to Part Number U674D. Type U674D is only available in terminal style "A".



Aluminum Capacitors  
+ 105 °C, Tubular Radial Lead

Vishey Sprague

ORIGINAL RATINGS						
CAPACITANCE ( $\mu$ F)	PART NUMBER (1)	CASE CODE	MAX. ESR AT + 25 °C ( $m\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 100 kHz	MAX. IMPEDANCE AT 100 kHz ( $m\Omega$ )
			120 Hz	20 kHz		
<b>20 WVDC AT + 105 °C, SURGE = 30 V</b>						
680.0	U673D687H020GE1C	GE	131.0	72.0	2.42	75.0
1000.0	U673D108H020HE1C	HE	86.0	50.0	3.21	54.0
1500.0	U673D158H020JE1C	JE	71.0	43.0	3.68	45.0
2200.0	U673D228H020HJ1C	HJ	44.0	26.0	5.11	28.0
2700.0	U673D278H020JJ1C	JJ	37.0	23.0	5.90	25.0
3300.0	U673D338H020HL1C	HL	30.0	19.0	6.67	21.0
3900.0	U673D398H020GT1C	GT	24.0	15.0	8.69	18.0
4700.0	U673D478H020JL1C	JL	26.0	17.0	7.62	20.0
5600.0	U673D568H020JP1C	JP	20.0	14.0	9.17	17.0
6800.0	U673D688H020JS1C	JS	17.0	12.0	10.60	16.0
8200.0	U673D828H020JT1C	JT	15.0	10.0	12.40	14.0
<b>25 WVDC AT + 105 °C, SURGE = 35 V</b>						
560.0	U673D567H025GE1C	GE	144.0	67.0	2.51	70.0
820.0	U673D827H025HE1C	HE	103.0	51.0	3.18	55.0
1200.0	U673D128H025JE1C	JE	80.0	42.0	3.81	44.0
1500.0	U673D158H025GL1C	GL	49.0	24.0	5.42	26.0
1800.0	U673D188H025HJ1C	HJ	52.0	27.0	5.01	30.0
2200.0	U673D228H025JJ1C	JJ	41.0	23.0	5.90	25.0
2700.0	U673D278H025GS1C	GS	31.0	16.0	7.85	19.0
3300.0	U673D338H025JL1C	JL	28.0	16.0	7.86	19.0
3900.0	U673D398H025HS1C	HS	23.0	13.0	9.51	16.0
4700.0	U673D478H025JP1C	JP	22.0	13.0	9.51	16.0
5600.0	U673D568H025JS1C	JS	19.0	11.0	11.10	14.0
6800.0	U673D688H025JT1C	JT	16.0	10.0	12.40	13.0
<b>40 WVDC AT + 105 °C, SURGE = 55 V</b>						
330.0	U673D337H040GE1C	GE	199.0	69.0	2.48	71.0
560.0	U673D567H040HE1C	HE	135.0	50.0	3.21	54.0
680.0	U673D687H040JE1C	JE	110.0	44.0	3.72	47.0
1000.0	U673D108H040HJ1C	HJ	67.0	27.0	5.01	30.0
1200.0	U673D128H040GP1C	GP	51.0	20.0	6.51	22.0
1500.0	U673D158H040JJ1C	JJ	55.0	23.0	5.90	26.0
1800.0	U673D188H040GS1C	GS	41.0	16.0	7.85	19.0
2200.0	U673D228H040JL1C	JL	38.0	17.0	7.62	19.0
2700.0	U673D278H040JP1C	JP	29.0	14.0	9.17	17.0
3300.0	U673D338H040JS1C	JS	24.0	12.0	10.60	15.0
3900.0	U673D398H040JT1C	JT	21.0	10.0	12.40	13.0
<b>50 WVDC AT + 105 °C, SURGE = 75 V</b>						
270.0	U673D277H050GE1C	GE	249.0	70.0	2.46	72.0
390.0	U673D397H050HE1C	HE	170.0	52.0	3.15	54.0
470.0	U673D477H050GJ1C	GJ	122.0	36.0	3.96	38.0
560.0	U673D567H050JE1C	JE	129.0	43.0	3.77	45.0
820.0	U673D827H050HJ1C	HJ	85.0	27.0	5.01	30.0
1000.0	U673D108H050JJ1C	JJ	65.0	23.0	5.90	25.0
1200.0	U673D128H050HL1C	HL	57.0	19.0	6.67	21.0
1500.0	U673D158H050JL1C	JL	44.0	17.0	7.62	20.0
1800.0	U673D188H050HS1C	HS	36.0	13.0	9.51	16.0
2200.0	U673D228H050JP1C	JP	34.0	14.0	9.17	17.0
2700.0	U673D278H050JS1C	JS	28.0	12.0	10.60	15.0
3300.0	U673D338H050JT1C	JT	24.0	10.0	12.40	13.0

**Note**

(1) For applications requiring single ended, 3 lead capacitors, change the Part Number U673D to Part Number U674D. Type U674D is only available in terminal style "A".

# U673D and U674D

Vishay Sprague

Aluminum Capacitors  
+ 105 °C, Tubular Radial Lead

ORIGINAL RATINGS						
CAPACITANCE ( $\mu$ F)	PART NUMBER (1)	CASE CODE	MAX. ESR AT + 25 °C (m $\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 100 kHz	MAX. IMPEDANCE AT 100 kHz (m $\Omega$ )
			120 Hz	20 kHz		
<b>60 WVDC AT + 105 °C, SURGE = 85 V</b>						
180.0	U673D187H060GE1C	GE	341.0	73.0	2.41	75.0
270.0	U673D277H060HE1C	HE	215.0	51.0	3.18	54.0
330.0	U673D337H060GJ1C	GJ	167.0	38.0	3.85	40.0
390.0	U673D397H060JE1C	JE	164.0	43.0	3.77	45.0
560.0	U673D567H060HJ1C	HJ	106.0	27.0	5.01	29.0
680.0	U673D687H060GP1C	GP	84.0	21.0	6.35	23.0
820.0	U673D827H060JJ1C	JJ	82.0	23.0	5.90	26.0
1000.0	U673D108H060GT1C	GT	57.0	15.0	8.69	18.0
1200.0	U673D128H060JL1C	JL	55.0	17.0	7.62	20.0
1500.0	U673D158H060JP1C	JP	42.0	13.0	9.51	17.0
1800.0	U673D188H060JS1C	JS	35.0	12.0	10.60	16.0
2200.0	U673D228H060JT1C	JT	30.0	10.0	12.40	14.0
<b>75 WVDC AT + 105 °C, SURGE = 100 V</b>						
120.0	U673D127H075GE1C	GE	600.0	169.0	1.58	170.0
180.0	U673D187H075HE1C	HE	399.0	116.0	2.10	117.0
220.0	U673D227H075JE1C	JE	300.0	92.0	2.57	93.0
330.0	U673D337H075HJ1C	HJ	196.0	59.0	3.39	60.0
470.0	U673D477H075JJ1C	JJ	145.0	46.0	4.17	47.0
560.0	U673D567H075HL1C	HL	131.0	40.0	4.59	41.0
680.0	U673D687H075JL1C	JL	98.0	32.0	4.02	31.0
820.0	U673D827H075HS1C	HS	80.0	26.0	6.72	28.0
1000.0	U673D108H075JP1C	JP	73.0	24.0	7.00	26.0
1200.0	U673D128H075JS1C	JS	59.0	20.0	8.27	22.0
1500.0	U673D158H075JT1C	JT	50.0	18.0	9.30	20.0
<b>100 WVDC AT + 105 °C, SURGE = 125 V</b>						
68.0	U673D686H100GE1C	GE	992.0	292.0	1.20	295.0
120.0	U673D127H100HE1C	HE	602.0	182.0	1.68	185.0
150.0	U673D157H100JE1C	JE	490.0	150.0	2.01	155.0
220.0	U673D227H100HJ1C	HJ	294.0	90.0	2.74	91.0
270.0	U673D277H100GP1C	GP	240.0	73.0	3.40	74.0
330.0	U673D337H100JJ1C	JJ	239.0	75.0	3.27	76.0
390.0	U673D397H100GT1C	GT	161.0	50.0	4.76	51.0
470.0	U673D477H100JL1C	JL	159.0	51.0	4.40	52.0
560.0	U673D567H100JP1C	JP	120.0	39.0	5.49	40.0
680.0	U673D687H100JS1C	JS	96.0	32.0	6.53	33.0
820.0	U673D827H100JT1C	JT	81.0	28.0	7.46	29.0
<b>150 WVDC AT + 105 °C, SURGE = 200 V</b>						
56.0	U673D566H150GE1C	GE	1733.0	881.0	0.694	895.0
82.0	U673D826H150HE1C	HE	1152.0	588.0	0.936	592.0
100.0	U673D107H150GJ1C	GJ	886.0	450.0	1.12	460.0
150.0	U673D157H150GL1C	GL	569.0	290.0	1.56	297.0
220.0	U673D227H150HL1C	HL	376.0	193.0	2.09	198.0
330.0	U673D337H150JL1C	JL	275.0	142.0	2.64	148.0
470.0	U673D477H150JP1C	JP	202.0	105.0	3.35	108.0
470.0	U673D477H150HT1C	HT	185.0	96.0	3.74	100.0
560.0	U673D567H150JS1C	JS	163.0	84.0	4.03	88.0
680.0	U673D687H150JT1C	JT	137.0	71.0	4.69	74.0

**Note**

(1) For applications requiring single ended, 3 lead capacitors, change the Part Number U673D to Part Number U674D. Type U674D is only available in terminal style "A".

Aluminum Capacitors  
+ 105 °C, Tubular Radial Lead

Vishay Sprague

ORIGINAL RATINGS						
CAPACITANCE ( $\mu$ F)	PART NUMBER <sup>(1)</sup>	CASE CODE	MAX. ESR AT + 25 °C ( $m\Omega$ )		MAX. RIPPLE AT + 85 °C (A) 20 kHz to 100 kHz	MAX. IMPEDANCE AT 100 kHz ( $m\Omega$ )
			120 Hz	20 kHz		
<b>200 WVDC AT + 105 °C, SURGE = 250 V</b>						
33.0	U673D336H200GE1C	GE	2290.0	1000.0	0.651	1040.0
56.0	U673D566H200HE1C	HE	1510.0	670.0	0.878	680.0
82.0	U673D826H200JE1C	JE	1090.0	486.0	1.13	492.0
150.0	U673D157H200JJ1C	JJ	538.0	240.0	1.83	246.0
220.0	U673D227H200JL1C	JL	356.0	160.0	2.49	168.0
330.0	U673D337H200HT1C	HT	242.0	108.0	3.53	112.0
390.0	U673D397H200JS1C	JS	214.0	97.0	3.76	101.0
470.0	U673D477H200JT1C	JT	179.0	80.0	4.42	84.0
<b>250 WVDC AT + 105 °C SURGE = 300 V</b>						
22.0	U673D226H250GE1C	GE	2980.0	780.0	0.738	790.0
47.0	U673D476H250GJ1C	GJ	1310.0	370.0	1.24	380.0
100.0	U673D107H250GP1C	GP	740.0	195.0	2.09	200.0
150.0	U673D157H250HP1C	HP	467.0	125.0	2.84	130.0
220.0	U673D227H250JP1C	JP	343.0	94.0	3.54	98.0
270.0	U673D277H250JS1C	JS	270.0	75.0	4.27	79.0
330.0	U673D337H250JT1C	JT	222.0	61.0	5.05	65.0

**Note**

<sup>(1)</sup> For applications requiring single ended, 3 lead capacitors, change the Part Number U673D to Part Number U674D. Type U674D is only available in terminal style "A".



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