

- Large Tubulars
- Axial Leads
- High Capacitance Ratings
- +85°C General Purpose



The 53D series is a general purpose capacitor with the highest capacitance ratings available for an axial leaded capacitor. The rugged construction has all welds with no pressure points or riveted connections, and upon request, an epoxy end-seal is available. Under normal operating conditions, the 53D series can have a life expectancy of up to ten years.

The 53D series capacitors are available with a standard PVC sleeve and an optional solvent proof epoxy end-seal, required for exposure to halogenated cleaning solvents. Refer to the Mini-Glossary for recommended cleaning conditions.

## Summary of Specifications

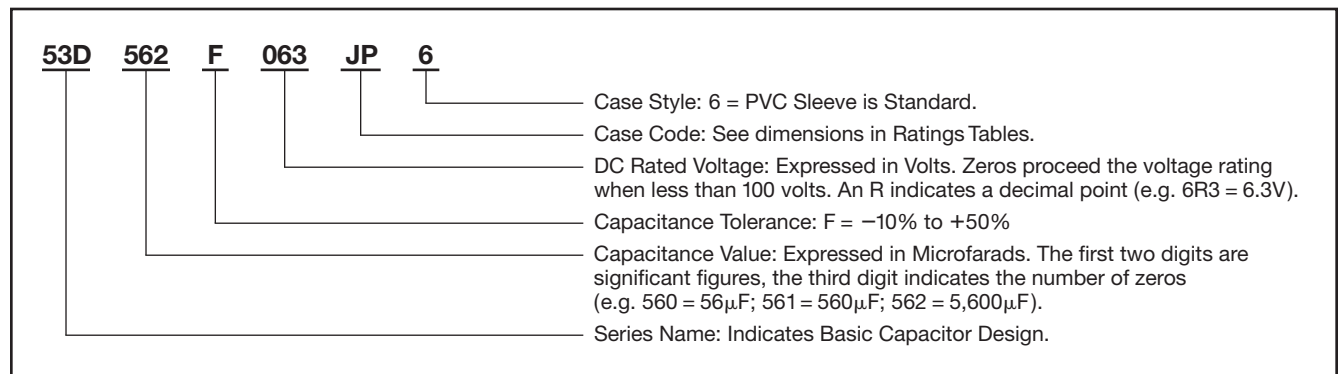
- Axial lead terminals.
- Capacitance range: 15 to 220,000 $\mu$ F.
- Voltage range: 6.3 to 450VDC.
- Operating temperature range: -40°C to +85°C.
- Leakage current:  $K\sqrt{CV}$  ( $\mu$ A) after 5 minutes, where K = 6 at +25°C, 36 at +85°C.
- Standard capacitance tolerance: -10% to +50%
- Nominal case size (D  $\times$  L): 0.750"  $\times$  1.125" to 1.375"  $\times$  4.125"
- Rated lifetime: 1,000 hours at +85°C.

# 53D Series

## 53D Specifications

Item	Characteristics																								
Operating Temperature Range	-40 to +85°C																								
Rated Voltage Range	6.3 to 450VDC																								
Capacitance Range	15 to 220,000µF at +25°C, 120Hz																								
Capacitance Tolerance	-10% to +50% (F) at +25°C, 120Hz																								
Leakage Current	$I = K\sqrt{CV}$ : K = 6.0 at +25°C, 36 at +85°C after 5 minutes. Where I = Leakage current (µA), C = Nominal capacitance (µF) and V = Rated voltage (V)																								
Low Temperature Characteristics	At 120Hz, capacitance ratio $C(-40^{\circ}\text{C})/C(+25^{\circ}\text{C})$ <table border="1" style="margin-left: 20px;"> <tr> <td>DC Rated Voltage (V)</td> <td>0-40</td> <td>41-63</td> <td>64-100</td> <td>101-350</td> <td>351-450</td> </tr> <tr> <td>Capacitance Remaining</td> <td>35%</td> <td>45%</td> <td>60%</td> <td>20%</td> <td>15%</td> </tr> </table> At 120Hz, equivalent series resistance ratio $\text{ESR}(-40^{\circ}\text{C})/\text{ESR}(+25^{\circ}\text{C})$ <table border="1" style="margin-left: 20px;"> <tr> <td>DC Rated Voltage (V)</td> <td>0-40</td> <td>41-63</td> <td>64-100</td> <td>101-350</td> <td>351-450</td> </tr> <tr> <td>Multiplier</td> <td>60</td> <td>55</td> <td>65</td> <td>180</td> <td>190</td> </tr> </table>	DC Rated Voltage (V)	0-40	41-63	64-100	101-350	351-450	Capacitance Remaining	35%	45%	60%	20%	15%	DC Rated Voltage (V)	0-40	41-63	64-100	101-350	351-450	Multiplier	60	55	65	180	190
DC Rated Voltage (V)	0-40	41-63	64-100	101-350	351-450																				
Capacitance Remaining	35%	45%	60%	20%	15%																				
DC Rated Voltage (V)	0-40	41-63	64-100	101-350	351-450																				
Multiplier	60	55	65	180	190																				
Ripple Current Multipliers <i>Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.</i>	Ambient Temperature (°C) <table border="1" style="margin-left: 20px;"> <tr> <td>≤ +45°C</td> <td>+65°C</td> <td>+75°C</td> <td>+85°C</td> </tr> <tr> <td>2.0</td> <td>1.7</td> <td>1.4</td> <td>1.0</td> </tr> </table> Frequency (Hz) <table border="1" style="margin-left: 20px;"> <tr> <td>DC Rated Voltage</td> <td>50-60Hz</td> <td>300-400Hz</td> <td>&gt;1kHz</td> </tr> <tr> <td>0-50V</td> <td>0.85</td> <td>1.10</td> <td>1.15</td> </tr> <tr> <td>51-299V</td> <td>0.85</td> <td>1.15</td> <td>1.20</td> </tr> <tr> <td>≥ 300V</td> <td>0.80</td> <td>1.30</td> <td>1.40</td> </tr> </table>	≤ +45°C	+65°C	+75°C	+85°C	2.0	1.7	1.4	1.0	DC Rated Voltage	50-60Hz	300-400Hz	>1kHz	0-50V	0.85	1.10	1.15	51-299V	0.85	1.15	1.20	≥ 300V	0.80	1.30	1.40
≤ +45°C	+65°C	+75°C	+85°C																						
2.0	1.7	1.4	1.0																						
DC Rated Voltage	50-60Hz	300-400Hz	>1kHz																						
0-50V	0.85	1.10	1.15																						
51-299V	0.85	1.15	1.20																						
≥ 300V	0.80	1.30	1.40																						
Life Validation Test	The following specifications shall be satisfied when the capacitors are restored to +25°C after subjecting them to the DC rated voltage for 1,000 hours at +85°C. Capacitance change: ≤ 15% from initial measurement ESR change : ≤ 1.5 × initial specified limit Leakage current : ≤ initial specified limit																								
Shelf Test	The following specifications shall be satisfied when the capacitors are restored to +25°C after exposing them for 500 hours at +85°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change: ≤ 10% from initial measurement ESR change : ≤ 1.3 × initial specified limit Leakage current : ≤ 2 × initial specified limit																								

**Part Numbering System for 53D Series** When ordering, always specify complete catalog number for 53D Series.

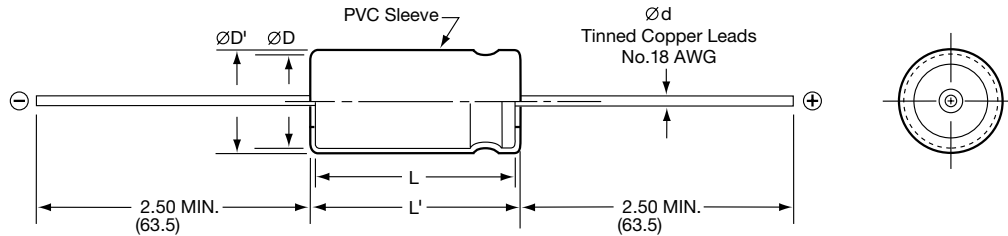


# 53D Series

## Diagram of Dimensions

### Axial Lead

Unit: inches (mm)



### Dimensions in Inches

Case Code	$\varnothing D'$ $\pm 0.020$ With Sleeve	$L'$ $\pm 0.062$ With Sleeve	$\varnothing d$ Terminal Diameter	Typical Weight (ounces)
GE	0.760	1.141	0.040	0.46
GJ		1.641		0.63
GL		2.141		0.81
GP		2.641		0.98
GS		3.141		1.16
GT		3.641		1.34
HE	0.885	1.141	0.040	0.63
HJ		1.641		0.88
HL		2.141		1.09
HP		2.641		1.34
HS		3.141		1.58
HT		3.641		1.83
JE	1.010	1.141	0.040	0.81
JJ		1.641		1.12
JL		2.141		1.44
JP		2.641		1.76
JS		3.141		2.08
JT		3.641		2.39
KE	1.135	1.141	0.040	1.02
KJ		1.641		1.41
KL		2.141		1.80
KP		2.641		2.18
KS		3.141		2.61
KT		3.641		3.00
KD	4.141	3.38		
LE	1.260	1.141	0.040	1.26
LJ		1.641		1.76
LL		2.141		2.23
LP		2.641		2.75
LS		3.141		3.24
LT		3.641		3.70
LD	4.141	4.19		
ME	1.385	1.141	0.040	1.51
MJ		1.641		2.11
ML		2.141		2.71
MP		2.641		3.31
MS		3.141		3.91
MT		3.641		4.51
MD	4.141	5.07		

### Dimensions in Millimeters

Case Code	$\varnothing D'$ $\pm 0.508$ With Sleeve	$L'$ $\pm 1.575$ With Sleeve	$\varnothing d$ Terminal Diameter	Typical Weight (grams)
GE	19.3	29.0	1.016	13
GJ		41.7		18
GL		54.4		23
GP		67.1		28
GS		79.8		33
GT		92.5		38
HE	22.5	29.0	1.016	18
HJ		41.7		25
HL		54.4		31
HP		67.1		38
HS		79.8		45
HT		92.5		52
JE	25.7	29.0	1.016	23
JJ		41.7		32
JL		54.4		41
JP		67.1		50
JS		79.8		59
JT		92.5		68
KE	28.8	29.0	1.016	29
KJ		41.7		40
KL		54.4		51
KP		67.1		62
KS		79.8		74
KT		92.5		85
KD	105.2	96		
LE	32.0	29.0	1.016	36
LJ		41.7		50
LL		54.4		64
LP		67.1		78
LS		79.8		92
LT		92.5		105
LD	105.2	119		
ME	35.2	29.0	1.016	43
MJ		41.7		60
ML		54.4		77
MP		67.1		94
MS		79.8		111
MT		92.5		128
MD	105.2	144		

53D  
LARGE TUBULARS - 85°C

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>6.3 Volts 8 Volts Surge</b>	5,600	53D562F6R3GE6	0.750 × 1.125	108	82	1.41	1.61
	18,000	53D183F6R3GJ6	0.750 × 1.625	77	58	1.92	2.21
	33,000	53D333F6R3GP6	0.750 × 2.625	42	32	3.19	3.64
	39,000	53D393F6R3GS6	0.750 × 3.125	35	26	3.76	4.30
	47,000	53D473F6R3GT6	0.750 × 3.625	30	22	4.34	4.97
	8,200	53D822F6R3HE6	0.875 × 1.125	80	61	1.80	2.05
	27,000	53D273F6R3HJ6	0.875 × 1.625	54	41	2.51	2.87
	47,000	53D473F6R3HP6	0.875 × 2.625	31	23	4.04	4.60
	56,000	53D563F6R3HS6	0.875 × 3.125	26	20	4.74	5.39
	68,000	53D683F6R3HT6	0.875 × 3.625	23	17	5.42	6.15
	12,000	53D123F6R3JE6	1.000 × 1.125	69	53	2.11	2.39
	39,000	53D393F6R3JJ6	1.000 × 1.625	44	33	3.03	3.44
	68,000	53D683F6R3JP6	1.000 × 2.625	26	19	4.80	5.44
	82,000	53D823F6R3JS6	1.000 × 3.125	22	17	5.61	6.32
	100,000	53D104F6R3JT6	1.000 × 3.625	20	15	6.27	7.06
	15,000	53D153F6R3KE6	1.125 × 1.125	62	48	2.41	2.72
	47,000	53D473F6R3KJ6	1.125 × 1.625	39	31	3.45	3.90
	82,000	53D823F6R3KP6	1.125 × 2.625	23	18	5.41	6.11
	100,000	53D104F6R3KS6	1.125 × 3.125	20	16	6.24	7.04
	120,000	53D124F6R3KT6	1.125 × 3.625	18	14	7.08	7.96
	150,000	53D154F6R3KD6	1.125 × 4.125	16	13	7.86	8.81
	22,000	53D223F6R3ME6	1.375 × 1.125	67	54	2.65	2.94
68,000	53D683F6R3MJ6	1.375 × 1.625	37	30	4.02	4.46	
120,000	53D124F6R3MP6	1.375 × 2.625	22	18	6.23	6.91	
150,000	53D154F6R3MS6	1.375 × 3.125	18	15	7.25	8.01	
180,000	53D184F6R3MT6	1.375 × 3.625	16	13	8.18	9.03	
220,000	53D224F6R3MD6	1.375 × 4.125	15	12	9.06	10.00	
<b>10 Volts 12 Volts Surge</b>	4,700	53D472F010GE6	0.750 × 1.125	115	85	1.36	1.57
	12,000	53D123F010GJ6	0.750 × 1.625	85	63	1.83	2.12
	27,000	53D273F010GP6	0.750 × 2.625	45	33	3.07	3.54
	33,000	53D333F010GS6	0.750 × 3.125	38	28	3.63	4.19
	39,000	53D393F010GT6	0.750 × 3.625	32	24	4.17	4.82
	6,800	53D682F010HE6	0.875 × 1.125	85	63	1.74	2.02
	18,000	53D183F010HJ6	0.875 × 1.625	60	44	2.39	2.75
	39,000	53D393F010HP6	0.875 × 2.625	33	25	3.90	4.49
	47,000	53D473F010HS6	0.875 × 3.125	28	21	4.58	5.25
	56,000	53D563F010HT6	0.875 × 3.625	24	18	5.24	6.00
	10,000	53D103F010JE6	1.000 × 1.125	72	55	2.05	2.36
	27,000	53D273F010JJ6	1.000 × 1.625	47	36	2.91	3.34
	47,000	53D473F010JP6	1.000 × 2.625	27	20	4.66	5.32
	68,000	53D683F010JS6	1.000 × 3.125	22	17	5.46	6.21
	82,000	53D823F010JT6	1.000 × 3.625	20	15	6.21	7.06
	12,000	53D123F010KE6	1.125 × 1.125	64	50	2.36	2.68
	33,000	53D333F010KJ6	1.125 × 1.625	41	32	3.36	3.83
	68,000	53D683F010KP6	1.125 × 2.625	24	19	5.29	6.01
	82,000	53D823F010KS6	1.125 × 3.125	21	16	6.16	6.99
	100,000	53D104F010KT6	1.125 × 3.625	18	14	6.99	7.91
	120,000	53D124F010KD6	1.125 × 4.125	17	13	7.69	8.71
	18,000	53D183F010ME6	1.375 × 1.125	67	53	2.64	2.94
	56,000	53D563F010MJ6	1.375 × 1.625	38	30	4.00	4.46
	100,000	53D104F010MP6	1.375 × 2.625	22	18	6.22	6.91
	120,000	53D124F010MS6	1.375 × 3.125	19	15	7.19	8.01
	150,000	53D154F010MT6	1.375 × 3.625	16	13	8.16	9.03
180,000	53D184F010MD6	1.375 × 4.125	15	12	9.03	10.00	

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.

53D  
LARGE TUBULARS - 85°C

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>16 Volts 18 Volts Surge</b>	3,900	53D392F016GE6	0.750 × 1.125	119	85	1.33	1.58
	10,000	53D103F016GJ6	0.750 × 1.625	82	59	1.86	2.19
	18,000	53D183F016GP6	0.750 × 2.625	46	33	3.04	3.57
	22,000	53D223F016GS6	0.750 × 3.125	38	28	3.59	4.21
	27,000	53D273F016GT6	0.750 × 3.625	33	24	4.12	4.82
	5,600	53D562F016HE6	0.875 × 1.125	88	64	1.71	2.00
	15,000	53D153F016HJ6	0.875 × 1.625	61	43	2.37	2.78
	27,000	53D273F016HP6	0.875 × 2.625	33	24	3.87	4.51
	33,000	53D333F016HS6	0.875 × 3.125	28	21	4.53	5.27
	39,000	53D393F016HT6	0.875 × 3.625	24	18	5.22	6.05
	8,200	53D822F016JE6	1.000 × 1.125	72	53	2.07	2.40
	18,000	53D183F016JJ6	1.000 × 1.625	47	34	2.91	3.39
	39,000	53D393F016JP6	1.000 × 2.625	27	20	4.65	5.37
	47,000	53D473F016JS6	1.000 × 3.125	23	17	5.43	6.27
	56,000	53D563F016JT6	1.000 × 3.625	20	15	6.19	7.11
	10,000	53D103F016KE6	1.125 × 1.125	65	49	2.35	2.71
	22,000	53D223F016KJ6	1.125 × 1.625	42	31	3.33	3.86
	47,000	53D473F016KP6	1.125 × 2.625	24	18	5.26	6.06
	56,000	53D563F016KS6	1.125 × 3.125	21	16	6.13	7.04
	68,000	53D683F016KT6	1.125 × 3.625	18	14	6.95	7.96
	82,000	53D823F016KD6	1.125 × 4.125	17	13	7.74	8.81
	15,000	53D153F016ME6	1.375 × 1.125	68	54	2.62	2.94
	39,000	53D393F016MJ6	1.375 × 1.625	38	30	3.97	4.46
	68,000	53D683F016MP6	1.375 × 2.625	22	18	6.18	6.91
82,000	53D823F016MS6	1.375 × 3.125	19	15	7.17	8.01	
100,000	53D104F016MT6	1.375 × 3.625	17	13	8.09	9.03	
120,000	53D124F016MD6	1.375 × 4.125	15	12	9.00	10.00	
<b>25 Volts 35 Volts Surge</b>	1,800	53D182F025GE6	0.750 × 1.125	141	91	1.23	1.52
	3,900	53D392F025GJ6	0.750 × 1.625	81	53	1.86	2.30
	6,800	53D682F025GP6	0.750 × 2.625	44	29	3.08	3.77
	8,200	53D822F025GS6	0.750 × 3.125	37	25	3.63	4.44
	10,000	53D103F025GT6	0.750 × 3.625	32	22	4.18	5.09
	2,700	53D272F025HE6	0.875 × 1.125	101	67	1.59	1.96
	5,600	53D562F025HJ6	0.875 × 1.625	59	40	2.39	2.92
	10,000	53D103F025HP6	0.875 × 2.625	33	22	3.83	4.71
	12,000	53D123F025HS6	0.875 × 3.125	28	19	4.53	5.46
	15,000	53D153F025HT6	0.875 × 3.625	25	17	5.16	6.19
	3,900	53D392F025JE6	1.000 × 1.125	81	55	1.93	2.35
	8,200	53D822F025JJ6	1.000 × 1.625	48	32	2.87	3.49
	15,000	53D153F025JP6	1.000 × 2.625	28	19	4.55	5.44
	18,000	53D183F025JS6	1.000 × 3.125	23	16	5.42	6.44
	22,000	53D223F025JT6	1.000 × 3.625	20	14	6.14	7.30
	4,700	53D472F025KE6	1.125 × 1.125	72	50	2.23	2.67
	10,000	53D103F025KJ6	1.125 × 1.625	42	29	3.31	3.95
	18,000	53D183F025KP6	1.125 × 2.625	25	17	5.19	6.15
	22,000	53D223F025KS6	1.125 × 3.125	21	15	6.06	7.13
	27,000	53D273F025KT6	1.125 × 3.625	18	13	6.89	8.08
	33,000	53D333F025KD6	1.125 × 4.125	16	12	7.67	8.95
	6,800	53D682F025ME6	1.375 × 1.125	71	55	2.56	2.92
	15,000	53D153F025MJ6	1.375 × 1.625	41	32	3.80	4.32
	27,000	53D273F025MP6	1.375 × 2.625	24	19	5.94	6.72
	33,000	53D333F025MS6	1.375 × 3.125	20	16	6.89	7.81
	39,000	53D393F025MT6	1.375 × 3.625	18	14	7.82	8.84
	47,000	53D473F025MD6	1.375 × 4.125	16	13	8.67	9.76

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>35 Volts 45 Volts Surge</b>	1,500	53D152F035GE6	0.750 × 1.125	152	92	1.18	1.52
	2,700	53D272F035GJ6	0.750 × 1.625	86	53	1.80	2.31
	5,600	53D562F035GP6	0.750 × 2.625	48	30	2.97	3.76
	6,800	53D682F035GS6	0.750 × 3.125	40	25	3.52	4.44
	8,200	53D822F035GT6	0.750 × 3.625	34	21	4.07	5.11
	2,200	53D222F035HE6	0.875 × 1.125	109	67	1.54	1.95
	3,900	53D392F035HJ6	0.875 × 1.625	63	39	2.32	2.93
	6,800	53D682F035HP6	0.875 × 2.625	35	22	3.78	4.72
	10,000	53D103F035HS6	0.875 × 3.125	29	19	4.45	5.52
	12,000	53D123F035HT6	0.875 × 3.625	26	17	5.06	6.24
	3,300	53D332F035JE6	1.000 × 1.125	87	55	1.87	2.34
	5,600	53D562F035JJ6	1.000 × 1.625	50	32	2.82	3.50
	10,000	53D103F035JP6	1.000 × 2.625	30	19	4.43	5.45
	12,000	53D123F035JS6	1.000 × 3.125	24	16	5.27	6.44
	15,000	53D153F035JT6	1.000 × 3.625	21	14	5.97	7.22
	3,900	53D392F035KE6	1.125 × 1.125	76	50	2.17	2.67
	6,800	53D682F035KJ6	1.125 × 1.625	44	29	3.23	3.95
	12,000	53D123F035KP6	1.125 × 2.625	26	17	5.08	6.15
	15,000	53D153F035KS6	1.125 × 3.125	22	15	5.92	7.13
	18,000	53D183F035KT6	1.125 × 3.625	19	13	6.73	8.05
	22,000	53D223F035KD6	1.125 × 4.125	17	12	7.49	8.95
	5,600	53D562F035ME6	1.375 × 1.125	73	55	2.52	2.92
	10,000	53D103F035MJ6	1.375 × 1.625	42	32	3.75	4.32
	18,000	53D183F035MP6	1.375 × 2.625	25	19	5.86	6.72
	22,000	53D223F035MS6	1.375 × 3.125	21	16	6.83	7.81
	27,000	53D273F035MT6	1.375 × 3.625	18	14	7.73	8.84
	33,000	53D333F035MD6	1.375 × 4.125	16	13	8.61	9.76
<b>50 Volts 70 Volts Surge</b>	1,000	53D102F050GE6	0.750 × 1.125	178	93	1.09	1.51
	1,800	53D182F050GJ6	0.750 × 1.625	103	54	1.66	2.28
	3,300	53D332F050GP6	0.750 × 2.625	55	30	2.77	3.75
	3,900	53D392F050GS6	0.750 × 3.125	46	25	3.26	4.40
	4,700	53D472F050GT6	0.750 × 3.625	39	22	3.78	5.06
	1,500	53D152F050HE6	0.875 × 1.125	133	71	1.39	1.90
	2,700	53D272F050HJ6	0.875 × 1.625	72	39	2.16	2.92
	4,700	53D472F050HP6	0.875 × 2.625	40	23	3.53	4.69
	5,600	53D562F050HS6	0.875 × 3.125	33	19	4.18	5.49
	6,800	53D682F050HT6	0.875 × 3.625	29	17	4.78	6.24
	1,800	53D182F050JE6	1.000 × 1.125	110	56	1.75	2.32
	3,900	53D392F050JJ6	1.000 × 1.625	58	33	2.62	3.46
	6,800	53D682F050JP6	1.000 × 2.625	32	19	4.25	5.50
	8,200	53D822F050JS6	1.000 × 3.125	27	16	4.99	6.42
	10,000	53D103F050JT6	1.000 × 3.625	24	14	5.69	7.30
	2,200	53D222F050KE6	1.125 × 1.125	86	50	2.03	2.65
	4,700	53D472F050KJ6	1.125 × 1.625	50	30	3.04	3.93
	8,200	53D822F050KP6	1.125 × 2.625	28	17	4.85	6.16
	10,000	53D103F050KS6	1.125 × 3.125	25	15	5.59	7.08
	12,000	53D123F050KT6	1.125 × 3.625	21	13	6.38	8.02
	15,000	53D153F050KD6	1.125 × 4.125	19	12	7.16	8.92
	3,900	53D392F050ME6	1.375 × 1.125	78	55	2.46	2.92
	6,800	53D682F050MJ6	1.375 × 1.625	45	32	3.64	4.32
	12,000	53D123F050MP6	1.375 × 2.625	26	19	5.71	6.70
	15,000	53D153F050MS6	1.375 × 3.125	22	16	6.66	7.81
	18,000	53D183F050MT6	1.375 × 3.625	19	14	7.55	8.81
	22,000	53D223F050MD6	1.375 × 4.125	17	13	8.40	9.76

\* The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>63 Volts 80 Volts Surge</b>	680	53D681F063GE6	0.750 × 1.125	188	106	1.23	1.63
	1,500	53D152F063GJ6	0.750 × 1.625	109	53	1.61	2.31
	2,700	53D272F063GP6	0.750 × 2.625	60	30	2.64	3.74
	3,300	53D332F063GS6	0.750 × 3.125	50	25	3.14	4.41
	3,900	53D392F063GT6	0.750 × 3.625	42	21	3.66	5.09
	1,200	53D122F063HE6	0.875 × 1.125	140	69	1.36	1.93
	2,200	53D222F063HJ6	0.875 × 1.625	78	39	2.09	2.94
	3,900	53D392F063HP6	0.875 × 2.625	44	23	3.38	4.69
	4,700	53D472F063HS6	0.875 × 3.125	36	19	4.03	5.50
	5,600	53D562F063HT6	0.875 × 3.625	31	17	4.63	6.26
	1,500	53D152F063JE6	1.000 × 1.125	110	57	1.66	2.32
	2,700	53D272F063JJ6	1.000 × 1.625	63	33	2.52	3.47
	5,600	53D562F063JP6	1.000 × 2.625	35	19	4.09	5.50
	6,800	53D682F063JS6	1.000 × 3.125	29	16	4.83	6.42
	8,200	53D822F063JT6	1.000 × 3.625	25	14	5.52	7.30
	1,800	53D182F063KE6	1.125 × 1.125	94	51	1.95	2.64
	3,900	53D392F063KJ6	1.125 × 1.625	53	29	2.94	3.94
	6,800	53D682F063KP6	1.125 × 2.625	30	17	4.70	6.16
	8,200	53D822F063KS6	1.125 × 3.125	25	15	5.51	7.15
	10,000	53D103F063KT6	1.125 × 3.625	22	13	6.25	8.08
	12,000	53D123F063KD6	1.125 × 4.125	20	12	6.91	8.92
	2,700	53D272F063ME6	1.375 × 1.125	81	55	2.40	2.92
	5,600	53D562F063MJ6	1.375 × 1.625	47	32	3.57	4.32
	10,000	53D103F063MP6	1.375 × 2.625	27	19	5.62	6.70
12,000	53D123F063MS6	1.375 × 3.125	23	16	6.54	7.81	
15,000	53D153F063MT6	1.375 × 3.625	20	14	7.44	8.81	
18,000	53D183F063MD6	1.375 × 4.125	18	13	8.28	9.76	
<b>100 Volts 135 Volts Surge</b>	270	53D271F100GE6	0.750 × 1.125	452	127	0.69	1.05
	470	53D471F100GJ6	0.750 × 1.625	250	107	1.06	1.62
	1,000	53D102F100GP6	0.750 × 2.625	132	58	1.79	2.70
	1,200	53D122F100GS6	0.750 × 3.125	112	49	2.09	3.16
	1,500	53D152F100GT6	0.750 × 3.625	96	42	2.43	3.64
	390	53D391F100HE6	0.875 × 1.125	312	135	0.91	1.38
	680	53D681F100HJ6	0.875 × 1.625	171	75	1.41	2.13
	1,500	53D152F100HP6	0.875 × 2.625	91	41	2.34	3.49
	1,800	53D182F100HS6	0.875 × 3.125	76	34	2.77	4.11
	2,200	53D222F100HT6	0.875 × 3.625	65	30	3.19	4.71
	560	53D561F100JE6	1.000 × 1.125	235	104	1.14	1.71
	1,000	53D102F100JJ6	1.000 × 1.625	131	59	1.75	2.60
	1,800	53D182F100JP6	1.000 × 2.625	71	33	2.88	4.21
	2,200	53D222F100JS6	1.000 × 3.125	59	28	3.40	4.93
	2,700	53D272F100JT6	1.000 × 3.625	49	24	3.96	5.69
	680	53D681F100KE6	1.125 × 1.125	192	88	1.36	2.01
	1,200	53D122F100KJ6	1.125 × 1.625	112	52	2.03	2.98
	2,200	53D222F100KP6	1.125 × 2.625	59	28	3.38	4.85
	2,700	53D272F100KS6	1.125 × 3.125	48	23	4.02	5.72
	3,300	53D332F100KT6	1.125 × 3.625	42	21	4.60	6.49
	3,900	53D392F100KD6	1.125 × 4.125	36	18	5.20	7.31
	1,000	53D102F100ME6	1.375 × 1.125	148	73	1.78	2.53
	1,800	53D182F100MJ6	1.375 × 1.625	81	41	2.71	3.81
	3,900	53D392F100MP6	1.375 × 2.625	45	23	4.36	5.99
4,700	53D472F100MS6	1.375 × 3.125	37	20	5.15	7.01	
5,600	53D562F100MT6	1.375 × 3.625	32	17	5.88	7.94	
6,800	53D682F100MD6	1.375 × 4.125	28	15	6.62	8.89	

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.

53D  
LARGE TUBULARS - 85°C

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (μF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>200 Volts 250 Volts Surge</b>	68	53D680F200GE6	0.750 × 1.125	1,661	580	0.36	0.60
	120	53D121F200GJ6	0.750 × 1.625	915	321	0.56	0.94
	220	53D221F200GP6	0.750 × 2.625	454	161	0.97	1.62
	280	53D281F200GS6	0.750 × 3.125	378	134	1.14	1.92
	330	53D331F200GT6	0.750 × 3.625	314	112	1.34	2.25
	100	53D101F200HE6	0.875 × 1.125	1,110	391	0.48	0.81
	180	53D181F200HJ6	0.875 × 1.625	579	205	0.77	1.29
	330	53D331F200HP6	0.875 × 2.625	307	110	1.28	2.14
	390	53D391F200HS6	0.875 × 3.125	249	90	1.53	2.56
	470	53D471F200HT6	0.875 × 3.625	210	76	1.79	2.96
	150	53D151F200JE6	1.000 × 1.125	804	286	0.62	1.03
	270	53D271F200JJ6	1.000 × 1.625	426	153	0.97	1.62
	470	53D471F200JP6	1.000 × 2.625	228	83	1.61	2.66
	680	53D681F200JS6	1.000 × 3.125	183	67	1.93	3.18
	820	53D821F200JT6	1.000 × 3.625	154	57	2.24	3.68
	180	53D181F200KE6	1.125 × 1.125	649	234	0.74	1.24
	330	53D331F200KJ6	1.125 × 1.625	338	123	1.17	1.94
	560	53D561F200KP6	1.125 × 2.625	182	67	1.92	3.16
	680	53D681F200KS6	1.125 × 3.125	146	55	2.31	3.76
	1,000	53D102F200KT6	1.125 × 3.625	124	47	2.67	4.34
	1,200	53D122F200KD6	1.125 × 4.125	107	41	3.04	4.92
	270	53D271F200ME6	1.375 × 1.125	455	169	1.02	1.66
	470	53D471F200MJ6	1.375 × 1.625	234	89	1.60	2.59
	820	53D821F200MP6	1.375 × 2.625	125	49	2.62	4.19
	1,000	53D102F200MS6	1.375 × 3.125	101	40	3.11	4.95
	1,200	53D122F200MT6	1.375 × 3.625	90	36	3.51	5.72
1,800	53D182F200MD6	1.375 × 4.125	77	31	4.01	6.32	
<b>250 Volts 300 Volts Surge</b>	56	53D560F250GE6	0.750 × 1.125	1,959	636	0.33	0.58
	100	53D101F250GJ6	0.750 × 1.625	1,015	331	0.53	0.92
	180	53D181F250GP6	0.750 × 2.625	541	178	0.89	1.54
	220	53D221F250GS6	0.750 × 3.125	433	143	1.07	1.86
	270	53D271F250GT6	0.750 × 3.625	361	119	1.25	2.17
	82	53D820F250HE6	0.875 × 1.125	1,299	425	0.45	0.78
	150	53D151F250HJ6	0.875 × 1.625	733	241	0.68	1.19
	270	53D271F250HP6	0.875 × 2.625	365	121	1.18	2.04
	330	53D331F250HS6	0.875 × 3.125	292	98	1.42	2.45
	390	53D391F250HT6	0.875 × 3.625	244	82	1.66	2.85
	120	53D121F250JE6	1.000 × 1.125	945	312	0.57	0.99
	220	53D221F250JJ6	1.000 × 1.625	523	174	0.88	1.52
	390	53D391F250JP6	1.000 × 2.625	268	90	1.48	2.55
	470	53D471F250JS6	1.000 × 3.125	216	74	1.78	3.04
	560	53D561F250JT6	1.000 × 3.625	182	62	2.07	3.53
	150	53D151F250KE6	1.125 × 1.125	770	274	0.68	0.45
	270	53D271F250KJ6	1.125 × 1.625	408	137	1.07	1.83
	470	53D471F250KP6	1.125 × 2.625	214	73	1.78	3.03
	560	53D561F250KS6	1.125 × 3.125	170	59	2.14	3.63
	820	53D821F250KT6	1.125 × 3.625	143	50	2.48	4.19
	1,000	53D102F250KD6	1.125 × 4.125	124	44	2.82	4.74
	220	53D221F250ME6	1.375 × 1.125	525	181	0.95	1.61
	390	53D391F250MJ6	1.375 × 1.625	272	95	1.48	2.50
	680	53D681F250MP6	1.375 × 2.625	145	52	2.43	4.09
	820	53D821F250MS6	1.375 × 3.125	118	43	2.89	4.78
	1,000	53D102F250MT6	1.375 × 3.625	100	37	3.34	5.50
1,500	53D152F250MD6	1.375 × 4.125	94	34	3.64	6.00	

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.



# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D x L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
<b>350 Volts 400 Volts Surge</b>	22	53D220F350GE6	0.750 × 1.125	6,680	3,570	0.17	0.24
	47	53D470F350GJ6	0.750 × 1.625	3,390	1,810	0.28	0.39
	82	53D820F350GP6	0.750 × 2.625	1,710	918	0.49	0.68
	100	53D101F350GS6	0.750 × 3.125	1,470	787	0.58	0.79
	120	53D121F350GT6	0.750 × 3.625	1,220	655	0.68	0.93
	39	53D390F350HE6	0.875 × 1.125	4,180	2,240	0.24	0.34
	68	53D680F350HJ6	0.875 × 1.625	2,140	1,150	0.39	0.55
	120	53D121F350HP6	0.875 × 2.625	1,140	612	0.66	0.91
	150	53D151F350HS6	0.875 × 3.125	924	497	0.79	1.09
	180	53D181F350HT6	0.875 × 3.625	777	418	0.92	1.27
	47	53D470F350JE6	1.000 × 1.125	3,170	1,700	0.31	0.42
	100	53D101F350JJ6	1.000 × 1.625	1,600	860	0.50	0.68
	180	53D181F350JP6	1.000 × 2.625	828	455	0.84	1.15
	220	53D221F350JS6	1.000 × 3.125	676	364	1.00	1.37
	270	53D271F350JT6	1.000 × 3.625	571	308	1.17	1.59
	56	53D560F350KE6	1.125 × 1.125	2,510	1,340	0.38	0.52
	120	53D121F350KJ6	1.125 × 1.625	1,260	678	0.61	0.83
	220	53D221F350KP6	1.125 × 2.625	680	367	1.00	1.36
	270	53D271F350KS6	1.125 × 3.125	534	288	1.21	1.65
	330	53D331F350KT6	1.125 × 3.625	453	245	1.40	1.91
	390	53D391F350KD6	1.125 × 4.125	384	207	1.61	2.19
	100	53D101F350ME6	1.375 × 1.125	1,640	883	0.53	0.72
	180	53D181F350MJ6	1.375 × 1.625	848	458	0.84	1.14
	330	53D331F350MP6	1.375 × 2.625	445	241	1.39	1.89
390	53D391F350MS6	1.375 × 3.125	352	192	1.68	2.27	
470	53D471F350MT6	1.375 × 3.625	297	162	1.94	2.63	
560	53D561F350MD6	1.375 × 4.125	257	140	2.20	2.98	
<b>400 Volts 450 Volts Surge</b>	18	53D180F400GE6	0.750 × 1.125	9,718	5,384	0.15	0.20
	39	53D390F400GJ6	0.750 × 1.625	4,546	2,519	0.25	0.34
	68	53D680F400GP6	0.750 × 2.625	2,209	1,225	0.44	0.59
	82	53D820F400GS6	0.750 × 3.125	1,756	974	0.53	0.71
	100	53D101F400GT6	0.750 × 3.625	1,559	865	0.60	0.81
	27	53D270F400HE6	0.875 × 1.125	6,156	3,413	0.21	0.28
	56	53D560F400HJ6	0.875 × 1.625	2,910	1,614	0.34	0.46
	120	53D121F400HP6	0.875 × 2.625	1,435	796	0.59	0.80
	150	53D151F400HS6	0.875 × 3.125	1,210	672	0.70	0.94
	180	53D181F400HT6	0.875 × 3.625	982	546	0.83	1.11
	39	53D390F400JE6	1.000 × 1.125	4,634	2,570	0.26	0.35
	68	53D680F400JJ6	1.000 × 1.625	2,171	1,205	0.43	0.58
	150	53D151F400JP6	1.000 × 2.625	1,131	628	0.72	0.97
	180	53D181F400JS6	1.000 × 3.125	878	488	0.88	1.18
	220	53D221F400JT6	1.000 × 3.625	718	400	1.04	1.39
	47	53D470F400KE6	1.125 × 1.125	3,717	2,063	0.31	0.42
	100	53D101F400KJ6	1.125 × 1.625	1,697	943	0.52	0.70
	180	53D181F400KP6	1.125 × 2.625	838	466	0.90	1.20
	220	53D221F400KS6	1.125 × 3.125	691	384	1.06	1.43
	270	53D271F400KT6	1.125 × 3.625	567	316	1.25	1.68
	330	53D331F400KD6	1.125 × 4.125	481	268	1.44	1.92
	68	53D680F400ME6	1.375 × 1.125	2,408	1,340	0.44	0.59
	150	53D151F400MJ6	1.375 × 1.625	1,160	647	0.72	0.96
	270	53D271F400MP6	1.375 × 2.625	574	320	1.22	1.64
330	53D331F400MS6	1.375 × 3.125	446	250	1.49	1.99	
390	53D391F400MT6	1.375 × 3.625	373	209	1.73	2.31	
470	53D471F400MD6	1.375 × 4.125	321	180	1.97	2.63	

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.

# 53D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (μF)	Catalog Part Number	Nominal Case Size* D × L (inches)	Maximum ESR (mΩ) at +25°C		Maximum Ripple Current (A rms) at +85°C	
				120Hz	20k-100kHz	120Hz	20k-100kHz
450 Volts 500 Volts Surge	15	53D150F450GE6	0.750 × 1.125	10,276	5,483	0.14	0.20
	33	53D330F450GJ6	0.750 × 1.625	4,789	2,556	0.24	0.33
	68	53D680F450GP6	0.750 × 2.625	2,322	1,240	0.43	0.59
	82	53D820F450GS6	0.750 × 3.125	1,848	987	0.52	0.71
	100	53D101F450GT6	0.750 × 3.625	1,534	820	0.61	0.83
	22	53D220F450HE6	0.875 × 1.125	6,463	3,450	0.20	0.27
	47	53D470F450HJ6	0.875 × 1.625	3,049	1,628	0.33	0.46
	100	53D101F450HP6	0.875 × 2.625	1,488	796	0.58	0.80
	120	53D121F450HS6	0.875 × 3.125	1,224	655	0.69	0.95
	150	53D151F450HT6	0.875 × 3.625	1,047	560	0.80	1.09
	33	53D330F450JE6	1.000 × 1.125	4,863	2,598	0.25	0.34
	68	53D680F450JJ6	1.000 × 1.625	2,238	1,197	0.42	0.58
	120	53D121F450JP6	1.000 × 2.625	1,138	609	0.72	0.98
	150	53D151F450JS6	1.000 × 3.125	922	494	0.86	1.18
	180	53D181F450JT6	1.000 × 3.625	738	395	1.03	1.40
	39	53D390F450KE6	1.125 × 1.125	3,901	2,086	0.30	0.41
	82	53D820F450KJ6	1.125 × 1.625	1,770	948	0.51	0.70
	180	53D181F450KP6	1.125 × 2.625	874	468	0.88	1.20
	220	53D221F450KS6	1.125 × 3.125	706	379	1.05	1.44
	270	53D271F450KT6	1.125 × 3.625	593	318	1.22	1.67
	330	53D331F450KD6	1.125 × 4.125	511	274	1.39	1.90
	68	53D680F450ME6	1.375 × 1.125	2,495	1,338	0.43	0.59
	120	53D121F450MJ6	1.375 × 1.625	1,262	677	0.69	0.94
	270	53D271F450MP6	1.375 × 2.625	559	322	1.20	1.63
	330	53D331F450MS6	1.375 × 3.125	468	252	1.45	1.98
	390	53D391F450MT6	1.375 × 3.625	394	213	1.68	2.29
	470	53D471F450MD6	1.375 × 4.125	333	180	1.93	2.63

\*The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.