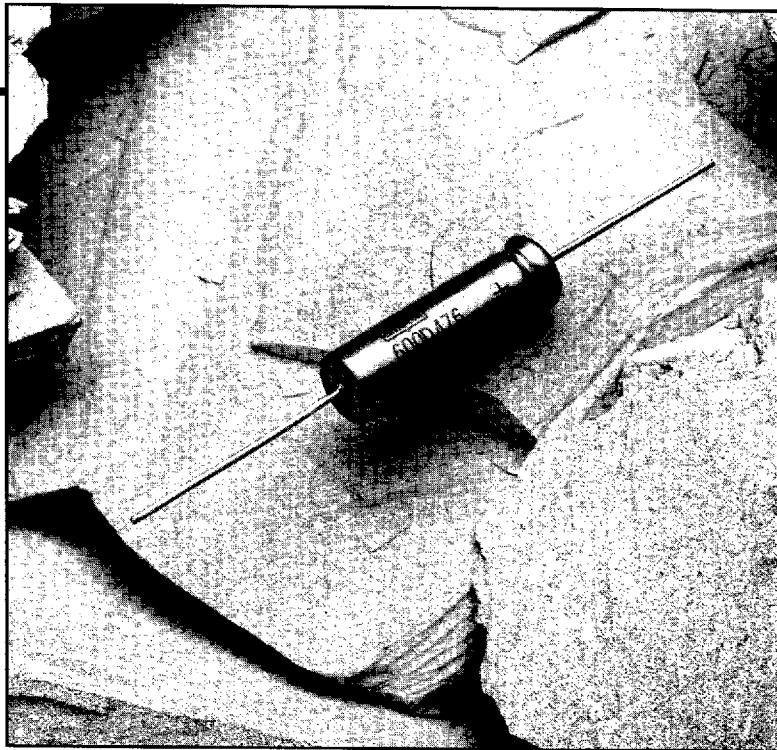


# 600D Series



- Miniature Axial
- High Reliability
- Extended Temperature Range to +125°C
- Military MIL-C-39018/01 Equivalent



600D  
MINIATURE - 125°C

The 600D series offers a combination of an extended temperature range of +125°C and voltage range of 250VDC. The unique Teflon® end-seal allows the 600D to have a long expected life with a life test of 2,000 hours at +125°C. This high reliability capacitor is the commercial equivalent to the MIL-C-39018/01 style of military aluminum electrolytic capacitors. As a low cost alternative to equivalent foil tantalum capacitors, the 600D is smaller and approximately 1/3 the weight of the foil tantalum capacitor.

The 600D series capacitors are available with a standard polyester insulating sleeve with an optional solvent proof resin 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: 2.2 to 2,700µF.
- Voltage range: 5 to 250VDC.
- Operating temperature range: -55°C to +125°C.
- Leakage current:  $0.15\sqrt{CV}$  (µA) for 5 to 75V or  $0.15\sqrt{CV} + 5$  (µA) for 100 to 250V after 5 minutes at +25°C.
- Standard capacitance tolerance: -10% to +50%.
- Nominal case size (D × L): 0.281" × 0.937" to 0.375" × 2.687"
- Rated lifetime: 2,000 hours at +125°C.

D 10F ■ 6618896 0003477 176 ■

# 600D Series

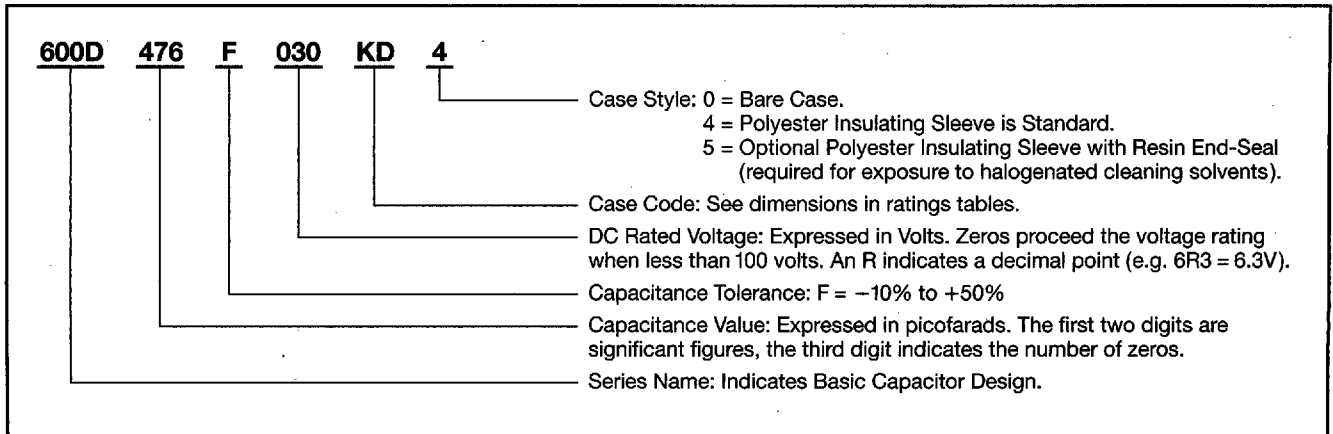
## 600D Specifications

Item	Characteristics																							
Operating Temperature Range	-55 to +125°C																							
Rated Voltage Range	5 to 250VDC																							
Capacitance Range	2.2 to 2,700µF at +25°C, 120Hz																							
Capacitance Tolerance	-10% to +50% (F) at +25°C, 120Hz																							
Leakage Current	$I = K\sqrt{CV}$ (0-75V); $I = K\sqrt{CV} + 5$ (100-250V) : $K = 0.15$ at +25°C after 5 minutes. Where I = Leakage current (µA), C = Nominal capacitance (µF) and V = Rated voltage (V)																							
Ripple Current Multipliers <i>Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.</i>	<p>Ambient Temperature (°C)</p> <table border="1"> <tr> <td>≤+75°C</td> <td>+85°C</td> <td>+105°C</td> <td>+125°C</td> </tr> <tr> <td>3.6</td> <td>3.0</td> <td>2.2</td> <td>1.0</td> </tr> </table> <p>Frequency (Hz)</p> <table border="1"> <tr> <td>DC Rated Voltage</td> <td>50-60Hz</td> <td>100-120Hz</td> <td>300-400Hz</td> <td>≥1kHz</td> </tr> <tr> <td>0-30V</td> <td>0.85</td> <td>1.00</td> <td>1.04</td> <td>1.08</td> </tr> <tr> <td>31-250V</td> <td>0.80</td> <td>1.00</td> <td>1.30</td> <td>1.40</td> </tr> </table>	≤+75°C	+85°C	+105°C	+125°C	3.6	3.0	2.2	1.0	DC Rated Voltage	50-60Hz	100-120Hz	300-400Hz	≥1kHz	0-30V	0.85	1.00	1.04	1.08	31-250V	0.80	1.00	1.30	1.40
≤+75°C	+85°C	+105°C	+125°C																					
3.6	3.0	2.2	1.0																					
DC Rated Voltage	50-60Hz	100-120Hz	300-400Hz	≥1kHz																				
0-30V	0.85	1.00	1.04	1.08																				
31-250V	0.80	1.00	1.30	1.40																				
Life Validation Test	<p>The following specifications shall be satisfied when the capacitors are restored to +25°C after subjecting them to the DC rated voltage for 2,000 hours at +125°C.</p> <p>Capacitance change: ≤15% from initial measurement ESR change : ≤1.3× initial specified limit Leakage current : ≤ initial specified limit</p>																							
Shelf Test	<p>The following specifications shall be satisfied when the capacitors are restored to +25°C after exposing them for 500 hours at +125°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.</p> <p>Capacitance change: ≤10% from initial measurement ESR change : ≤1.15× initial specified limit Leakage current : ≤2× initial specified limit</p>																							

600D  
MINIATURE-125°C

### Part Numbering System for 600D Series

When ordering, always specify complete catalog number for 600D Series.



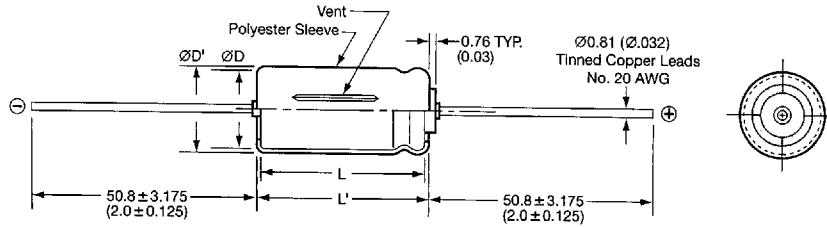
D 10F ■ 6618896 0003478 002 ■

# 600D Series

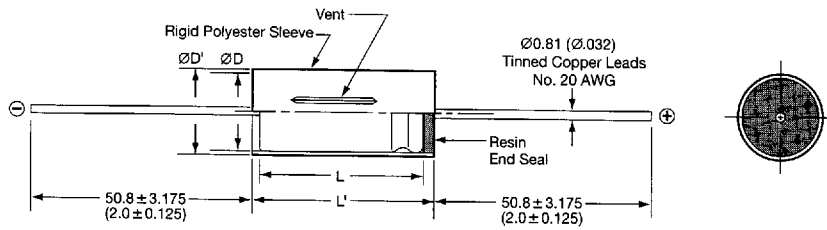
## Diagram of Dimensions

### 600D Axial Lead - Standard Polyester Sleeve

Unit: mm (inches)



### 600D Axial Lead - Optional Rigid Polyester Sleeve with Resin End-Seal



#### Dimensions in Millimeters

Case Code	ØD ±0.40 Bare Can	L ±0.79 Bare Can*	ØD' ±0.79 With Sleeve	L' Max. With Sleeve*	Typical Weight (grams)
KD	7.14	23.81	7.54	25.40	1.9
DD	9.53	23.81	9.92	25.40	3.4
DE	9.53	28.58	9.92	30.16	3.9
DG	9.53	34.93	9.92	36.51	4.6
DJ	9.53	41.28	9.92	42.86	5.3
DL	9.53	55.56	9.92	57.12	7.0
DX	9.53	68.26	9.92	69.82	8.4

\*Case Style 4. For case style 5 add 3.18mm.

#### Dimensions in Inches

Case Code	ØD ±0.015 Bare Can	L ±0.031 Bare Can*	ØD' ±0.031 With Sleeve	L' Max. With Sleeve*	Typical Weight (ounces)
KD	0.281	0.937	0.296	1.000	0.067
DD	0.375	0.937	0.391	1.000	0.120
DE	0.375	1.125	0.391	1.187	0.138
DG	0.375	1.375	0.391	1.437	0.162
DJ	0.375	1.625	0.391	1.680	0.187
DL	0.375	2.187	0.391	2.249	0.247
DX	0.375	2.687	0.391	2.749	0.296

\*Case Style 4. For case style 5 add 0.125 inches.

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +25°C, 120Hz	Maximum Ripple Current (A rms) at +125°C, 120Hz
5 Volts @ +85°C	220	600D227F005KD4	7.14 × 23.8	1.750	0.127
	470	600D477F005DD4	9.53 × 23.8	0.813	0.221
	680	600D687F005DE4	9.53 × 28.6	0.564	0.286
3 Volts @ +125°C	1,000	600D108F005DG4	9.53 × 35.0	0.388	0.377
	1,200	600D128F005DJ4	9.53 × 41.3	0.320	0.477
	1,800	600D188F005DL4	9.53 × 55.5	0.210	0.631
	2,700	600D278F005DX4	9.53 × 68.2	0.140	0.851

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

▷ 10F ■ 6618896 0003479 T49 ■

# 600D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +25°C, 120Hz	Maximum Ripple Current (A rms) at +125°C, 120Hz	
<b>7 Volts</b> @ +85°C	180	600D187F007KD4	7.14 × 23.8	2.121	0.115	
	390	600D397F007DD4	9.53 × 23.8	0.972	0.202	
	470	600D477F007DE4	9.53 × 28.6	0.813	0.238	
	680	600D687F007DG4	9.53 × 35.0	0.564	0.312	
<b>5 Volts</b> @ +125°C	1,000	600D108F007DJ4	9.53 × 41.3	0.388	0.406	
	1,500	600D158F007DL4	9.53 × 55.5	0.260	0.567	
	2,200	600D228F007DX4	9.53 × 68.2	0.175	0.761	
<b>10 Volts</b> @ +85°C	120	600D127F010KD4	7.14 × 23.8	3.180	0.094	
	330	600D337F010DD4	9.53 × 23.8	1.160	0.185	
	390	600D397F010DE4	9.53 × 28.6	0.972	0.218	
	560	600D567F010DG4	9.53 × 35.0	0.673	0.286	
<b>7 Volts</b> @ +125°C	820	600D827F010DJ4	9.53 × 41.3	0.460	0.373	
	1,200	600D128F010DL4	9.53 × 55.5	0.318	0.513	
	1,500	600D158F010DX4	9.53 × 68.2	0.230	0.664	
<b>15 Volts</b> @ +85°C	100	600D107F015KD4	7.14 × 23.8	3.880	0.085	
	220	600D227F015DD4	9.53 × 23.8	1.750	0.150	
	330	600D337F015DE4	9.53 × 28.6	1.160	0.199	
	470	600D477F015DG4	9.53 × 35.0	0.813	0.260	
<b>10 Volts</b> @ +125°C	560	600D567F015DJ4	9.53 × 41.3	0.686	0.305	
	820	600D827F015DL4	9.53 × 55.5	0.460	0.426	
	1,200	600D128F015DX4	9.53 × 68.2	0.320	0.563	
<b>20 Volts</b> @ +85°C	68	600D686F020KD4	7.14 × 23.8	4.274	0.081	
	150	600D157F020DD4	9.53 × 23.8	1.962	0.142	
	220	600D227F020DE4	9.53 × 28.6	1.325	0.186	
	330	600D337F020DG4	9.53 × 35.0	0.883	0.250	
<b>15 Volts</b> @ +125°C	390	600D397F020DJ4	9.53 × 41.3	0.679	0.299	
	680	600D687F020DL4	9.53 × 55.5	0.564	0.385	
	820	600D827F020DX4	9.53 × 68.2	0.360	0.530	
<b>30 Volts</b> @ +85°C	47	600D476F030KD4	7.14 × 23.8	3.060	0.096	
	100	600D107F030DD4	9.53 × 23.8	1.500	0.162	
	150	600D157F030DE4	9.53 × 28.6	1.000	0.215	
	220	600D227F030DG4	9.53 × 35.0	0.675	0.285	
	<b>20 Volts</b> @ +125°C	270	600D277F030DJ4	9.53 × 41.3	0.560	0.338
		390	600D397F030DL4	9.53 × 55.5	0.375	0.472
560		600D567F030DX4	9.53 × 68.2	0.264	0.620	
<b>40 Volts</b> @ +85°C	33	600D336F040KD4	7.14 × 23.8	4.500	0.079	
	82	600D826F040DD4	9.53 × 23.8	1.824	0.147	
	100	600D107F040DE4	9.53 × 28.6	1.500	0.175	
	150	600D157F040DG4	9.53 × 35.0	1.000	0.234	
	<b>30 Volts</b> @ +125°C	180	600D187F040DJ4	9.53 × 41.3	0.844	0.275
		270	600D277F040DL4	9.53 × 55.5	0.540	0.394
390		600D397F040DX4	9.53 × 68.2	0.397	0.505	
<b>50 Volts</b> @ +85°C	22	600D226F050KD4	7.14 × 23.8	6.750	0.065	
	56	600D566F050DD4	9.53 × 23.8	2.650	0.122	
	68	600D686F050DE4	9.53 × 28.6	2.170	0.146	
	100	600D107F050DG4	9.53 × 35.0	1.500	0.192	
	<b>40 Volts</b> @ +125°C	150	600D157F050DJ4	9.53 × 41.3	1.000	0.253
		180	600D187F050DL4	9.53 × 55.5	0.844	0.315
270		600D277F050DX4	9.53 × 68.2	0.540	0.433	

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

600D  
MINIATURE-125°C

D 10F ■ 6618896 0003480 760 ■

# 600D Series

## Standard Voltage Ratings - Axial Lead

Rated Voltage (WVDC)	Capacitance (μF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +25°C, 120Hz	Maximum Ripple Current (A rms) at +125°C, 120Hz	
60 Volts @ +85°C	15	600D156F060KD4	7.14 × 23.8	9.650	0.055	
	39	600D396F060DD4	9.53 × 23.8	3.850	0.102	
	47	600D476F060DE4	9.53 × 28.6	3.060	0.123	
	82	600D826F060DG4	9.53 × 35.0	1.820	0.174	
	50 Volts @ +125°C	100	600D107F060DJ4	9.53 × 41.3	1.500	0.207
		150	600D157F060DL4	9.53 × 55.5	1.000	0.290
220		600D227F060DX4	9.53 × 68.2	0.675	0.388	
75 Volts @ +85°C	12	600D126F075KD4	7.14 × 23.8	12.300	0.048	
	27	600D276F075DD4	9.53 × 23.8	5.625	0.084	
	39	600D396F075DE4	9.53 × 28.6	3.857	0.110	
	56	600D566F075DG4	9.53 × 35.0	2.640	0.144	
	60 Volts @ +125°C	82	600D826F075DJ4	9.53 × 41.3	1.820	0.187
		120	600D127F075DL4	9.53 × 55.5	1.227	0.261
150		600D157F075DX4	9.53 × 68.2	1.000	0.399	
100 Volts @ +85°C	6.8	600D685F100KD4	7.14 × 23.8	22.500	0.036	
	22	600D226F100DD4	9.53 × 23.8	6.750	0.077	
	27	600D276F100DE4	9.53 × 28.6	5.625	0.091	
	39	600D396F100DG4	9.53 × 35.0	3.857	0.120	
	75 Volts @ +125°C	56	600D566F100DJ4	9.53 × 41.3	2.640	0.156
		82	600D826F100DL4	9.53 × 55.5	1.824	0.215
120		600D127F100DX4	9.53 × 68.2	1.270	0.910	
150 Volts @ +85°C	3.3	600D335F150KD4	7.14 × 23.8	38.300	0.028	
	6.8	600D685F150DD4	9.53 × 23.8	19.160	0.046	
	12	600D126F150DE4	9.53 × 28.6	10.500	0.066	
	18	600D186F150DG4	9.53 × 35.0	6.850	0.090	
	100 Volts @ +125°C	22	600D226F150DJ4	9.53 × 41.3	5.750	0.106
		33	600D336F150DL4	9.53 × 55.5	3.830	0.148
47		600D476F150DX4	9.53 × 68.2	2.610	0.197	
200 Volts @ +85°C	3.3	600D335F200KD4	7.14 × 23.8	38.300	0.028	
	6.8	600D685F200DD4	9.53 × 23.8	19.160	0.046	
	8.2	600D825F200DE4	9.53 × 28.6	15.500	0.055	
	12	600D126F200DG4	9.53 × 35.0	10.500	0.073	
	150 Volts @ +125°C	18	600D186F200DJ4	9.53 × 41.3	6.780	0.098
		27	600D276F200DL4	9.53 × 55.5	4.790	0.132
33		600D336F200DX4	9.53 × 68.2	3.830	0.162	
250 Volts @ +85°C	2.2	600D225F250KD4	7.14 × 23.8	57.500	0.023	
	5.6	600D565F250DD4	9.53 × 23.8	23.100	0.042	
	6.8	600D685F250DE4	9.53 × 28.6	19.160	0.050	
	10	600D106F250DG4	9.53 × 35.0	12.700	0.066	
	200 Volts @ +125°C	15	600D156F250DJ4	9.53 × 41.3	8.230	0.088
		22	600D226F250DL4	9.53 × 55.5	5.750	0.121
27		600D276F250DX4	9.53 × 68.2	4.790	0.146	

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

600D  
MINIATURE - 125°C

▷ 10F ■ 6618896 0003481 6T7 ■