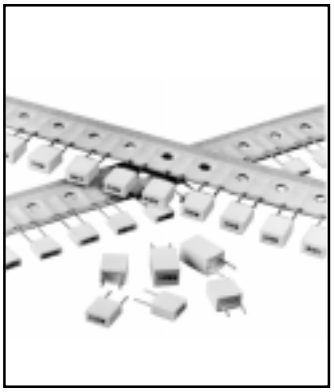
168/185 Series
Metallized Polyester / Radial Leads



- Low Leakage
- Radial Leaded (5.0mm)
- 168 Series Bulk Packaging
- 185 Series Available Reel or Ammo Pack
- Non-Polar
- Flame Retardant Case Meets UL94V-0
- Epoxy Encapsulant Meets UL94V-0
- Lead Material
  Tinned Copper Wire
  Minimum Lead Content 5%

GENERAL SPECIFICATIONS

Operating Temperature:
-55°C to +125°C with voltage derating above 85°C
Voltage Range:
50 VDC to 400 VDC
Capacitance Range:
0.0010 μF to 1.0 μF
Capacitance Tolerance:
±5%, ±10%, ±20%
CECC Approval:
Detail Specification 30401-009
Total Self Inductance:
Approximately 7nH

Dielectric Withstand Voltage:
1.6 x rated voltage for 2 sec at +25°C ±5°C
Dissipation Factor (DF):
tgδ x 10^{-4} at +25°C ±5°C

kHz	C≤0.1μF	C>0.1μF
1	≤100	≤100
10	≤150	≤150
100	≤300	

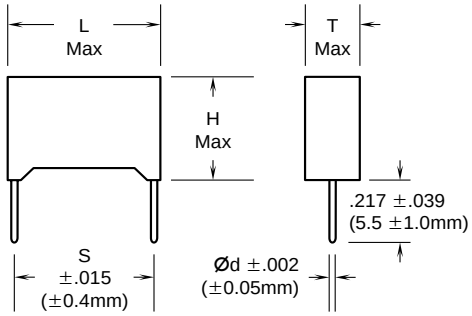
Excellent choice for general purpose applications such as bypass, decoupling, smoothing and some timing, energy storage/discharge and arc suppression.

Maximum Pulse Rise Time (dv/dt)

Vn	Capacitance	V/μ Sec
50		4
63		8
100	C > .0068μF	10
	.0033μF < C < .0068μF	15
	C ≤ .0033μF	30
250		44
400		100

If the working voltage (V) is less than the nominal voltage (Vn), the capacitor can work at higher dv/dt. In this case, the maximum value allowed is obtained by multiplying the above value (See table dv/dt) with the ratio Vn/V.

Outline Dimensions



Lead Length shown is as supplied on 168 Series

Test Method and Performance

Insulation Resistance	
Test Conditions	
Temperature	25°C ±5°C
Voltage Charge Time	1 minute
Voltage Charge	50 VDC for Vn < 100 VDC 100 VDC for Vn ≥ 100 VDC
Performance	
For Vn > 100 VDC	≥30,000 MΩ
For Vn ≤ 100 VDC	≥10,000 MΩ for C ≤ 0.1μF ≥ 1,000 MΩ x μF for C > 0.1μF
Damp Heat Test	
Test Conditions	
Temperature	+40°C
Relative Humidity	95%
Test Duration	21 days
Performance	
Capacitance Change ΔC/C	≤ ± 5%
DF Change Δtgδ	≤ 50 x 10^{4} at 1kHz
Insulation Resistance	≥ 50% of limit value
Life Test	
Test Conditions	
Temperature	+85°C
Test Duration	1000 hrs
Voltage Applied	1.25 x Vn
Performance	
Capacitance ChangeΔC/C	≤ ± 5%
DF Change Δtgδ	≤ 30 x 10^{-4} at 10kHz
Insulation Resistance	≥ 50% of limit value
Soldering	
Test Conditions	
Soldering Temperature	260°C ± 5°C
Soldering Duration	10 sec ± 1 sec
Performance	
Capacitance Change ΔC/C	≤ ± 2%
DF Change Δtgδ	≤ 30 x 10^{-4} at 10kHz
Insulation Resistance	≥ limit value
Long Term Stability (after two years)	
Storage	Standard Environmental Conditions
Performance	
Capacitance Change ΔC/C	≤ ± 3%

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168/185 Series
Metallized Polyester / Radial Leads

MALLORY

Catalog Number		Cap	Inches					Millimeters				
Bulk Pack	Tape and Reel Ammo Pack	µF	L Length	T Thickness	H Height	S Spacing	Ød	L Length	T Thickness	H Height	S Spacing	Ød
50 VDC/30 VAC												
168104*50A	185104*50#A>	.10	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168154*50A	185154*50#A>	.15	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168224*50C	185224*50#C>	.22	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168334*50C	185334*50#C>	.33	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168474*50H	185474*50#H>	.47	.283	.177	.335	.197	.024	7.2	4.5	8.5	5.0	.6
168684*50F	185684*50#F>	.68	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168824*50G	185824*50#G>	.82	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6
168105*50G	185105*50#G>	1	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6
63 VDC/40 VAC												
168473*63A	185473*63#A>	.047	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168563*63A	185563*63#A>	.056	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168683*63A	185683*63#A>	.068	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168823*63A	185823*63#A>	.082	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168104*63A	185104*63#A>	.10	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168154*63C	185154*63#C>	.15	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168184*63C	185184*63#C>	.18	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168224*63C	185224*63#C>	.22	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168274*63C	185274*63#C>	.27	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168334*63H	185334*63#H>	.33	.283	.177	.335	.197	.024	7.2	4.5	8.5	5.0	.6
168474*63H	185474*63#H>	.47	.283	.177	.335	.197	.024	7.2	4.5	8.5	5.0	.6
168684*63F	185684*63#F>	.68	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168105*63G	185105*63#G>	1	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6
100 VDC/63 VAC												
168102*100A	185102*100#A>	.001	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168152*100A	185152*100#A>	.0015	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168222*100A	185222*100#A>	.0022	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168272*100A	185272*100#A>	.0027	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168332*100A	185332*100#A>	.0033	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168392*100A	185392*100#A>	.0039	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168472*100A	185472*100#A>	.0047	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168562*100A	185562*100#A>	.0056	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168682*100A	185682*100#A>	.0068	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168822*100A	185822*100#A>	.0082	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168103*100A	185103*100#A>	.010	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168153*100A	185153*100#A>	.015	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168183*100A	185183*100#A>	.018	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168223*100A	185223*100#A>	.022	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168273*100A	185273*100#A>	.027	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168333*100C	185333*100#C>	.033	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168393*100C	185393*100#C>	.039	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168473*100C	185473*100#C>	.047	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168683*100H	185683*100#H>	.068	.283	.177	.335	.197	.024	7.2	4.5	8.5	5.0	.6
168104*100H	185104*100#H>	.10	.283	.177	.335	.197	.024	7.2	4.5	8.5	5.0	.6
168154*100F	185154*100#F>	.15	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168224*100G	185224*100#G>	.22	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6
250 VDC/160 VAC												
168332*250A	185332*250#A>	.0033	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168472*250A	185472*250#A>	.0047	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168682*250A	185682*250#A>	.0068	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168103*250A	185103*250#A>	.010	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168153*250A	185153*250#A>	.015	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168223*250C	185223*250#C>	.022	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168333*250C	185333*250#C>	.033	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168473*250F	185473*250#F>	.047	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168683*250F	185683*250#F>	.068	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168104*250G	185104*250#G>	.10	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6

* Indicate capacitance tolerance:
J = ±5%, K = ±10%, M = ±20%

# Indicate packaging type:
R = Tape and Reel, A = Ammo Pack

> Indicate tooling code:
A = 16.5mm, B = 18.5mm, C = 16.0mm
(See H dimension in taping specifications)

168/185 Series
Metallized Polyester / Radial Leads

MALLORY

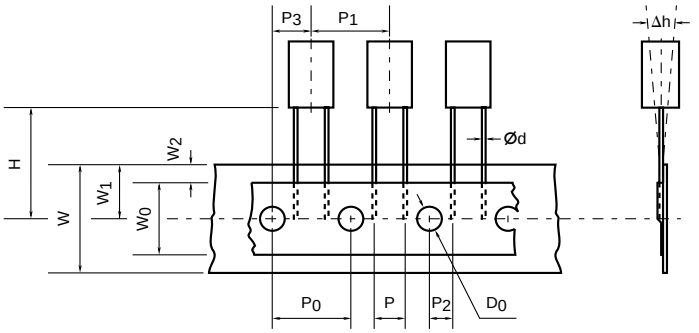
Catalog Number		Cap µF	Inches					Millimeters				
Bulk Pack	Tape and Reel Ammo Pack		L Length	T Thickness	H Height	S Spacing	Ød	L Length	T Thickness	H Height	S Spacing	Ød
400 VDC/200 VAC												
168102*400A	185102*400#A>	.0010	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168152*400A	185152*400#A>	.0015	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168222*400A	185222*400#A>	.0022	.283	.098	.256	.197	.024	7.2	2.5	6.5	5.0	.6
168332*400C	185332*400#C>	.0033	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168472*400C	185472*400#C>	.0047	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168682*400C	185682*400#C>	.0068	.283	.138	.295	.197	.024	7.2	3.5	7.5	5.0	.6
168103*400F	185103*400#F>	.010	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168153*400F	185153*400#F>	.015	.283	.197	.394	.197	.024	7.2	5.0	10.0	5.0	.6
168223*400G	185223*400#G>	.022	.283	.236	.433	.197	.024	7.2	6.0	11.0	5.0	.6

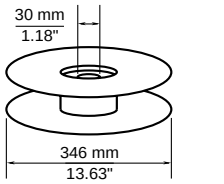
* Indicate capacitance tolerance:
J = ±5%, K = ±10%, M = ±20%

# Indicate packaging type:
R = tape and reel, A = ammo pack

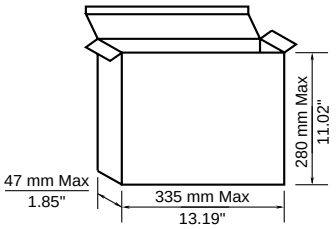
> Indicate tooling code:
A = 16.5mm, B = 18.5mm, C = 16.0mm
(See H dimension in taping specifications)

Tape Specifications - 5.0 mm Lead Spacing





Reel Packing



Ammo Box Packing

Dimensions

Item	Code	Millimeters	Inches
Lead-Wire Diameter	Ød	$0.6^{+0.04-0.01}$	$.024^{\pm.001}$
Lead-to-Lead Distance	P	$5.0^{+0.6-0.2}$	$.197^{+.024-.040}$
Feed Hole Pitch	p_0	$12.7^{\pm0.3}$	$.5^{\pm.012}$
Pitch of Component	p_1	$12.7^{\pm1.0}$	$.5^{\pm.039}$
Hole Center to Lead	p_2	$3.85^{\pm0.7}$	$.152^{\pm.028}$
Feed Hole Center to Component Center	p_3	$6.35^{\pm1.3}$	$.250^{\pm.051}$
Component Alignment, F-R	Δh	$0^{\pm2.0}$	$0^{\pm.079}$
Tape Width	W	$18^{+1.0-0.1}$	$.709^{+.039-.004}$
Hold-Down Tape Width	W_0	6.0 min	.236 min
Hole Position	W_1	$9.0^{+0.75-0.05}$	$.355^{+.030-.001}$
Hold-Down Tape Position	W_2	3.0 Max	.118 Max
Height of Component from Tape Center	H	>	>
Feed Hole Diameter	D_0	$4.0^{\pm0.3}$	$.157^{\pm.012}$

Component Quantity Per Reel

Case Code	Quantity Reeled	Quantity Ammo Pack
A	2500	3500
C	1800	1500
F	1200	1200
G	1000	1000
H	1400	1400

> The H dimension depends on the insertion equipment used. Specify the proper tooling code as indicated below.

Tooling Code	H Dimension	
	Millimeters	Inches
A	$16.5^{\pm0.75}$	$.679^{\pm.030}$
B	$18.5^{\pm0.75}$	$.728^{\pm.030}$
C	$16.0^{\pm0.75}$	$.630^{\pm.030}$

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