Aluminum Capacitors
+105 °C, Miniature, Axial Lead, General Purpose

FEATURES

- Long life
- High performance
- High CV per case size
- Case sizes to 0.709" [18.0 mm] diameters
- 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	0.248" x 0.512" [6.3 x 13.0] to 0.709" x 1.574" [18.0 x 40.0]
Operating temperature	-40 °C to +105 °C
Rated capacitance range, C_R	1 µF to 4700 µF
Tolerance on C_R	± 20 %
Rated voltage range, U_R	3 WV_{DC} to 250 WV_{DC}
Termination	Axial leads
Life validation test at 105 °C	2000 h: ΔCAP ≤ 20 % from initial measurement. ΔESR ≤ 1.5 x initial specified limit. ΔDCL ≤ initial specified limit.
Shelf life at 85 °C	500 h: ΔCAP ≤ 20 % from initial measurement. ΔESR ≤ 1.5 x initial specified limit. ΔDCL ≤ 2.0 x initial specified limit.
DC leakage current	3 WV_{DC} to 16 WV_{DC}: $I = 0.1\sqrt{CV} + 2$ 25 WV_{DC} to 250 WV_{DC}: $I = 0.2\sqrt{CV} + 2$ I in µA, C in µF, V in Volts

RIPPLE CURRENT MULTIPLIERS				
TEMPERATURE				
AMBIENT TEMPERATURE			**MULTIPLIERS**	
+105 °C			0.5	
+85 °C			1.0	
≤ 65 °C			2.0	
FREQUENCY (Hz)				
WV_{DC}	**50 TO 60**	**100 TO 120**	**300 TO 400**	**1K TO 100K**
3 to 50	0.9	1.0	1.1	1.4
51 to 250	0.8	1.0	1.3	1.6

DIMENSIONS in inches [millimeters]

CASE CODE	NOMINAL		STYLE 2		STYLE 5 RESIN END SEAL APPLIED	
	D	L	D (max.)	L (max.)	D (max.)	L (max.)
BA	0.248 [6.300]	0.512 [13.000]	0.276 [7.000]	0.567 [14.400]	0.276 [7.000]	0.626 [15.900]
BB	0.248 [6.300]	0.689 [17.500]	0.276 [7.000]	0.756 [19.200]	0.276 [7.000]	0.815 [20.700]
CB	0.315 [8.000]	0.689 [17.500]	0.339 [8.600]	0.756 [19.200]	0.339 [8.600]	0.815 [20.700]
CC	0.315 [8.000]	0.807 [20.500]	0.339 [8.600]	0.878 [22.300]	0.339 [8.600]	0.937 [23.800]
DC	0.374 [9.500]	0.807 [20.500]	0.402 [10.200]	0.878 [22.300]	0.402 [10.200]	0.937 [23.800]
DD	0.374 [9.500]	0.945 [24.000]	0.402 [10.200]	1.01 [25.500]	0.402 [10.200]	1.063 [27.000]
DF	0.374 [9.500]	1.260 [32.000]	0.402 [10.200]	1.319 [33.500]	0.402 [10.200]	1.378 [35.000]
DH	0.374 [9.500]	1.496 [38.000]	0.402 [10.200]	1.567 [39.800]	0.402 [10.200]	1.626 [41.300]
EF	0.433 [11.000]	1.260 [32.000]	0.465 [11.800]	1.319 [33.500]	0.465 [11.800]	1.378 [35.000]
EH	0.433 [11.000]	1.496 [38.000]	0.465 [11.800]	1.567 [39.800]	0.465 [11.800]	1.626 [41.300]
FH	0.492 [12.500]	1.496 [38.000]	0.516 [13.100]	1.567 [39.800]	0.516 [13.100]	1.626 [41.300]
FK	0.492 [12.500]	1.752 [44.500]	0.516 [13.100]	1.831 [46.500]	0.516 [13.100]	1.890 [48.000]
GH	0.630 [16.000]	1.496 [38.000]	0.654 [16.600]	1.567 [39.800]	0.654 [16.600]	1.626 [41.300]
GK	0.630 [16.000]	1.752 [44.500]	0.654 [16.600]	1.831 [46.500]	0.654 [16.600]	1.890 [48.000]
LS	0.709 [18.000]	1.575 [40.000]	0.736 [18.700]	1.673 [42.500]	0.736 [18.700]	1.693 [43.000]

Note

- Lead diameter AWG 20 (0.032" [0.81 mm])

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ORDERING EXAMPLE

Electrolytic capacitor 30D series: 30D 128 M 025 EH 2 A

DESCRIPTION	
CODE	**EXPLANATION**
30D	Product type
128	Capacitance value (1200 µF)
M	Tolerance (M = ± 20 %)
025	Voltage rating at 105 °C (024 = 25 V)
EH	Can size (see Dimensions table)
2	Sleeve and sealing (2 = mylar sleeve)
A	Packaging (A = bulk)

Note

- For lead (Pb)-free / RoHS-compliant products add suffix “E3” to part number.
  Example: 30D128M025EH2AE3

ELECTRICAL DATA AND ORDERING INFORMATION				
CAPACITANCE (µF)	**PART NUMBER**	**NOMINAL CASE SIZE D x L [mm]**	**MAX. ESR AT +25 °C 120 Hz (Ω)**	**MAX. RIPPLE AT +85 °C 120 Hz (A)**
6.3 WV_{DC} AT +105 °C, SURGE = 8 V				
150.0	30D157M6R3BB2A	0.248 x 0.689 [6.3 x 17.5]	2.875	0.163
330.0	30D337M6R3CC2A	0.315 x 0.807 [8.0 x 20.5]	1.277	0.299
1200.0	30D128M6R3DF2A	0.374 x 1.260 [9.5 x 32.0]	0.345	0.767
2200.0	30D228M6R3EF2A	0.433 x 1.260 [11.0 x 32.0]	0.206	1.080
4700.0	30D478M6R3GH2A	0.630 x 1.496 [16.0 x 38.0]	0.118	1.910
10 WV_{DC} AT +105 °C, SURGE = 12 V				
47.0	30D476M010BA2A	0.248 x 0.512 [6.3 x 13.0]	7.487	0.089
100.0	30D107M010BB2A	0.248 x 0.689 [6.3 x 17.5]	3.561	0.147
330.0	30D337M010CC2A	0.315 x 0.807 [8.0 x 20.5]	1.081	0.325
470.0	30D477M010DC2A	0.374 x 0.807 [9.5 x 20.5]	0.748	0.434
1000.0	30D108M010DF2A	0.374 x 1.260 [9.5 x 32.0]	0.356	0.755
2200.0	30D228M010EH2A	0.433 x 1.496 [11.0 x 38.0]	0.184	1.240
16 WV_{DC} AT +105 °C, SURGE = 20 V				
33.0	30D336M016BA2A	0.248 x 0.512 [6.3 x 13.0]	9.814	0.078
150.0	30D157M016CB2A	0.315 x 0.689 [8.0 x 17.5]	2.208	0.212
330.0	30D337M016DC2A	0.374 x 0.807 [9.5 x 20.5]	1.981	0.379
470.0	30D477M016DD2A	0.374 x 0.945 [9.5 x 24.0]	0.679	0.483
1200.0	30D128M016DH2A	0.374 x 1.496 [9.5 x 38.0]	0.265	0.947
4700.0	30D478M016GK2A	0.630 x 1.752 [16.0 x 44.5]	0.093	2.290
20 WV_{DC} AT +105 °C, SURGE = 25 V				
150.0	30D157M020CC2A	0.315 x 0.807 [8.0 x 20.5]	2.110	0.233
220.0	30D227M020DC2A	0.374 x 0.807 [9.5 x 20.5]	1.410	0.318
1000.0	30D108M020EF2A	0.433 x 1.260 [11.0 x 32.0]	0.323	0.863
1500.0	30D158M020EH2A	0.433 x 1.496 [11.0 x 38.0]	0.221	1.140
3300.0	30D338M020GK2A	0.630 x 1.752 [16.0 x 44.5]	0.118	2.040

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CAPACITANCE (µF)	PART NUMBER	NOMINAL CASE SIZE D x L [mm]	MAX. ESR AT +25 °C 120 Hz (Ω)	MAX. RIPPLE AT +85 °C 120 Hz (A)
25 WV_{DC} AT +105 °C, SURGE = 35 V				
22.0	30D226M025BA2A	0.248 x 0.512 [6.3 x 13.0]	13.270	0.067
47.0	30D476M025BB2A	0.248 x 0.689 [6.3 x 17.5]	6.128	0.112
100.0	30D107M025CC2A	0.315 x 0.807 [8.0 x 20.5]	2.914	0.197
220.0	30D227M025DC2A	0.374 x 0.807 [9.5 x 20.5]	1.327	0.326
330.0	30D337M025DD2A	0.374 x 0.945 [9.5 x 24.0]	0.885	0.423
470.0	30D477M025DF2A	0.374 x 1.260 [9.5 x 32.0]	0.612	0.575
1200.0	30D128M025EH2A	0.433 x 1.496 [11.0 x 38.0]	0.239	1.090
3300.0	30D338M025LS2A	0.709 x 1.575 [18.0 x 40.0]	0.108	2.190
35 WV_{DC} AT +105 °C, SURGE = 45 V				
33.0	30D336M035BB2A	0.248 x 0.689 [6.3 x 17.5]	8.330	0.096
100.0	30D107M035DC2A	0.374 x 0.807 [9.5 x 20.5]	2.740	0.212
220.0	30D227M035DD2A	0.374 x 0.945 [9.5 x 24.0]	1.250	0.356
330.0	30D337M035DF2A	0.374 x 1.260 [9.5 x 32.0]	0.830	0.495
1000.0	30D108M035EH2A	0.433 x 1.496 [11.0 x 38.0]	0.274	1.020
2200.0	30D228M035GK2A	0.630 x 1.752 [16.0 x 44.5]	0.125	1.980
40 WV_{DC} AT +105 °C, SURGE = 50 V				
15.0	30D156M040BA2A	0.248 x 0.512 [6.3 x 13.0]	17.600	0.058
22.0	30D226M040BB2A	0.248 x 0.689 [6.3 x 17.5]	11.700	0.081
47.0	30D476M040CB2A	0.315 x 0.689 [8.0 x 17.5]	5.435	0.134
100.0	30D107M040DC2A	0.374 x 0.807 [9.5 x 20.5]	2.585	0.234
470.0	30D477M040DH2A	0.374 x 1.496 [9.5 x 38.0]	0.543	0.663
1000.0	30D108M040FK2A	0.492 x 1.752 [12.5 x 44.5]	0.258	1.210
2200.0	30D228M040LS2A	0.709 x 1.575 [18.0 x 40.0]	0.125	2.040
50 WV_{DC} AT +105 °C, SURGE = 65 V				
10.0	30D106M050BA2A	0.248 x 0.512 [6.3 x 13.0]	25.85	0.048
22.0	30D226M050BB2A	0.248 x 0.689 [6.3 x 17.5]	11.700	0.081
33.0	30D336M050CB2A	0.315 x 0.689 [8.0 x 17.5]	7.850	0.112
100.0	30D107M050DC2A	0.374 x 0.807 [9.5 x 20.5]	2.585	0.233
220.0	30D227M050DF2A	0.374 x 1.260 [9.5 x 32.0]	1.177	0.417
330.0	30D337M050DH2A	0.374 x 1.496 [9.5 x 38.0]	0.785	0.551
1500.0	30D158M050GK2A	0.630 x 1.752 [16.0 x 44.5]	0.176	1.670
63 WV_{DC} AT +105 °C, SURGE = 75 V				
15.0	30D156M063BB2A	0.248 x 0.689 [6.3 x 17.5]	16.580	0.068
33.0	30D336M063CB2A	0.315 x 0.689 [8.0 x 17.5]	7.370	0.116
47.0	30D476M063CC2A	0.315 x 0.807 [8.0 x 20.5]	5.100	0.149
100.0	30D107M063DD2A	0.374 x 0.945 [9.5 x 24.0]	2.426	0.256
220.0	30D227M063EF2A	0.433 x 1.260 [11.0 x 32.0]	1.105	0.467
470.0	30D477M063EH2A	0.433 x 1.496 [11.0 x 38.0]	0.510	0.745
1000.0	30D108M063GK2A	0.630 x 1.752 [16.0 x 44.5]	0.242	1.420

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CAPACITANCE (µF)	PART NUMBER	NOMINAL CASE SIZE D x L [mm]	MAX. ESR AT +25 °C 120 Hz (Ω)	MAX. RIPPLE AT +85 °C 120 Hz (A)
75 WV_{DC} AT +105 °C, SURGE = 85 V				
12.0	30D126M075BB2A	0.248 x 0.689 [6.3 x 17.5]	13.200	0.076
47.0	30D476M075DC2A	0.374 x 0.807 [9.5 x 20.5]	3.384	0.204
120.0	30D127M075DF2A	0.374 x 1.260 [9.5 x 32.0]	1.320	0.392
1000.0	30D108M075LS2A	0.709 x 1.575 [18.0 x 40.0]	0.160	1.810
100 WV_{DC} AT +105 °C, SURGE = 125 V				
4.7	30D475M100BB2A	0.248 x 0.689 [6.3 x 17.5]	33.840	0.048
10.0	30D106M100CB2A	0.315 x 0.689 [8.0 x 17.5]	16.097	0.079
100.0	30D107M100DH2A	0.374 x 1.496 [9.5 x 38.0]	1.609	0.386
220.0	30D227M100EK2A	0.492 x 1.752 [12.5 x 44.5]	0.733	0.717
470.0	30D477M100LS2A	0.709 x 1.575 [18.0 x 40.0]	0.338	1.240
160 WV_{DC} AT +105 °C, SURGE = 180 V				
1.5	30D155M160BA2A	0.248 x 0.512 [6.3 x 13.0]	110.10	0.023
3.3	30D335M160CB2A	0.315 x 0.689 [8.0 x 17.5]	48.880	0.045
10.0	30D106M160DC2A	0.374 x 0.807 [9.5 x 20.5]	16.097	0.093
22.0	30D226M160DF2A	0.374 x 1.260 [9.5 x 32.0]	7.333	0.166
33.0	30D336M160EF2A	0.433 x 1.260 [11.0 x 32.0]	4.888	0.222
47.0	30D476M160EH2A	0.433 x 1.496 [11.0 x 38.0]	3.384	0.289
100.0	30D107M160GK2A	0.630 x 1.752 [16.0 x 44.5]	1.609	0.552
200 WV_{DC} AT +105 °C, SURGE = 250 V				
1.2	30D125M200BA2A	0.248 x 0.512 [6.3 x 13.0]	132.01	0.022
4.7	30D475M200CC2A	0.315 x 0.807 [8.0 x 20.5]	33.850	0.058
8.2	30D825M200DC2A	0.374 x 0.807 [9.5 x 20.5]	19.410	0.085
10.0	30D106M200DD2A	0.374 x 0.945 [9.5 x 24.0]	16.090	0.101
22.0	30D226M200DH2A	0.374 x 1.496 [9.5 x 38.0]	7.331	0.181
33.0	30D336M200EH2A	0.433 x 1.496 [11.0 x 38.0]	4.880	0.241
47.0	30D476M200EK2A	0.492 x 1.752 [12.5 x 44.5]	3.384	0.334
100.0	30D107M200LS2A	0.709 x 1.575 [18.0 x 40.0]	1.609	0.571
250 WV_{DC} AT +105 °C, SURGE = 300 V				
1.0	30D105M250BA2A	0.248 x 0.512 [6.3 x 13.0]	160.97	0.021
3.3	30D335M250CC2A	0.315 x 0.807 [8.0 x 20.5]	48.010	0.049
12.0	30D126M250DF2A	0.374 x 1.260 [9.5 x 32.0]	13.210	0.124
47.0	30D476M250GH2A	0.630 x 1.496 [16.0 x 38.0]	3.384	0.355

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