

Aluminum Capacitors

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



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 √CV + 2 25 WV _{DC} to 250 WV _{DC} : I = 0.2 √CV + 2 I in µA, C in µF, V in Volts

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



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]

STYLE 2 STYLE 5						
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])

**ORDERING EXAMPLE**

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

DESCRIPTION	
CODE	EXPLANATION
30D	Product type
128	Capacitance value (1200 μ F)
M	Tolerance (M = $\pm$ 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 (μ F)	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

**ELECTRICAL DATA AND ORDERING INFORMATION**

CAPACITANCE (μ F)	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

**ELECTRICAL DATA AND ORDERING INFORMATION**

CAPACITANCE (μ F)	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

Statements about product lifetime are based on calculations and internal testing. They should only be interpreted as estimations. Also due to external factors, the lifetime in the field application may deviate from the calculated lifetime. In general, nothing stated herein shall be construed as a guarantee of durability.



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.