Type 3410 85 °C, 4-Pin, Multipin Snap-In Aluminum Electrolytic

Round Snap-In Aluminum Electrolytic Capacitors

Type 3410 multipin polarized snap-in aluminum electrolytic capacitors are great as high ripple current bus capacitors. The 3410 performs well in linear and switchmode power supplies and energy storage pulse

Highlights

- Reverse proof keyed polarity with 4 snap-in terminals
- Long useful life of more than 5000 hours at 85 °C
- Very high ripple current per capacitance value
- Cylindrical insulated case with light blue sleeve

Specifications

Capacitance Range	330 µF to 1600 µF
Capacitance Tolerance	±20%
Rated Voltage	100 Vdc to 450 Vdc
Operating Temperature Range	–40 °C to +85 °C
DC Leakage Current	≤ 0.002CV+4 µA at 5 minutes
Reverse Voltage	≤ 1 V
Ripple Current Multipliers	Ambient Temperature 45 °C: 2.24 55 °C: 2.00 65 °C: 1.73 75 °C: 1.41 85 °C: 1.00 Frequency 50 Hz: 100 V 0.86; 250–450 V 0.86 100 Hz: 100 V 1.00; 250–450 V 1.00 300 Hz: 100 V 1.15; 250–450 V 1.25 1000 Hz: 100 V 1.35; 250–450 V 1.40 ≥10 kHz: 100 V 1.45; 250–450 V 1.50
Series Inductance:	19 nH typical, 25nH maximum, all case sizes
Life Endurance	2,000 h at 85 °C and rated voltage Δ Capacitance ±30% ESR 300% of limit DCL 100% of limit
Expected Life	≥ 5000 h at 85 °C and rated ripple current Δ Capacitance ±15% ESR 200% of limit DCL 100% of limit Total failures ≤ 4%
Shelf Life Test	500 h at 85 °C and no voltage Δ Capacitance ±15% ESR 120% of limit DCL 200% of limit
Vibration	10 to 5 Hz, 0.06" and 10 g max, 2 h in each plane
	RoHS Compliant

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Part Numbering System

3410	DH	331	M	450	H	P	A2
Type	Case Code	Capacitance	Tolerance	Voltage	Terminal	Insulation	Construction
3410	See Table	331 = 330 µF 163 = 16000 µF	M = ±20%	100 = 100 Vdc 450 = 450 Vdc	H = 4 pins J = 5 pins (5 pins for 45 & 50 mm dia)	P = 0.008" PVC	(factory assigned sequence number)

Case Codes and Dimensions

Case Dimensions, Insulated Can

Case Code	Diam. (D) ±0.031 (in)	Diam. (D) ±0.8 (mm)	Length (L) ±0.062 (in)	Length (L) ±1.6 (mm)	Typical Weight (oz)	Typical Weight (g)
DF	1.378	35	2.05	52	2.5	72
DG	1.378	35	2.56	65	3.2	91
DH	1.378	35	3.23	82	4.1	115
DJ	1.378	35	4.21	107	5.3	151
EF	1.575	40	2.05	52	3.3	94
EG	1.575	40	2.56	65	4.2	118
EH	1.575	40	3.23	82	5.3	150
EJ	1.575	40	4.21	107	6.9	197
FF	1.772	45	2.05	52	4.2	119
FG	1.772	45	2.56	65	5.3	150
FH	1.772	45	3.23	82	6.7	190
FJ	1.772	45	4.21	107	8.8	250
GF	1.969	50	2.05	52	5.2	147
GG	1.969	50	2.56	65	6.5	185
GH	1.969	50	3.23	82	8.3	235
GJ	1.969	50	4.21	107	10.9	309

Ratings

Cap. (µF)	Catalog Part Number	Max ESR @ 25 °C		Ripple Amps Max @ 85 °C		Nominal Size D x L (mm)
		120 Hz (Ω)	20 kHz (Ω)	120 Hz (A)	20 kHz (A)	
100 Vdc (125 Vdc Surge)						
4700	3410DF472M100HPA1	0.037	0.018	7.70	11.17	35 x 50
5600	3410EF562M100HPA1	0.038	0.018	8.10	11.75	40 x 50
6800	3410DG682M100HPA1	0.031	0.015	9.10	13.20	35 x 63
6800	3410FF682M100HPA1	0.037	0.018	8.90	12.91	45 x 50
8200	3410DH822M100HPA1	0.026	0.012	10.90	15.81	35 x 80
8200	3410EG822M100HPA1	0.027	0.013	10.40	15.08	40 x 63
8200	3410GF822M100HPA1	0.040	0.019	9.10	13.20	50 x 50
10000	3410DJ103M100HPA1	0.021	0.010	13.50	19.58	35 x 105
10000	3410EH103M100HPA1	0.023	0.011	12.20	17.69	40 x 80
10000	3410FG103M100HPA1	0.029	0.014	10.80	15.66	45 x 63
11000	3410FH113M100HPA1	0.025	0.012	12.50	18.13	45 x 80
11000	3410GG113M100HPA1	0.031	0.015	10.80	15.66	50 x 63
12000	3410EJ123M100HPA1	0.021	0.010	14.60	21.17	40 x 105
13000	3410GH133M100HPA1	0.026	0.012	12.70	18.42	50 x 80
14000	3410FJ143M100HPA1	0.020	0.010	15.00	21.75	45 x 105
16000	3410GJ163M100HPA1	0.022	0.010	15.00	21.75	50 x 105
250 Vdc (300 Vdc Surge)						
1200	3410DF122M250HPA1	0.085	0.040	5.20	7.54	35 x 50
1400	3410EF142M250HPA1	0.075	0.036	5.90	8.56	40 x 50
1600	3410FF162M250HPA1	0.071	0.034	6.30	9.14	45 x 50
1800	3410DG182M250HPA1	0.055	0.026	7.10	10.30	35 x 63
1900	3410GF192M250HPA1	0.065	0.031	7.10	10.30	50 x 50
2100	3410EG212M250HPA1	0.054	0.026	7.50	10.88	40 x 63
2200	3410DH222M250HPA1	0.048	0.023	7.90	11.46	35 x 80
2500	3410FG252M250HPA1	0.051	0.024	8.10	11.75	45 x 63
2600	3410EH262M250HPA1	0.043	0.020	8.80	12.76	40 x 80
2700	3410DJ272M250HPA1	0.040	0.019	9.40	13.63	35 x 105
3000	3410GG302M250HPA1	0.046	0.022	9.00	13.05	50 x 63
3100	3410FH312M250HPA1	0.041	0.020	9.60	13.92	45 x 80
3300	3410EJ332M250HPA1	0.035	0.017	10.70	15.52	40 x 105
3700	3410GH372M250HPA1	0.037	0.018	10.50	15.23	50 x 80
3900	3410FJ392M250HPA1	0.034	0.016	11.50	16.68	45 x 105
4700	3410GJ472M250HPA1	0.031	0.015	12.50	18.13	50 x 105
350 Vdc (400 Vdc Surge)						
560	3410DF561M350HPA1	0.089	0.042	3.40	4.93	35 x 50
680	3410EF681M350HPA1	0.159	0.076	4.00	5.80	40 x 50
820	3410DG821M350HPA1	0.132	0.063	4.50	6.53	35 x 63
820	3410FF821M350HPA1	0.145	0.069	4.50	6.53	45 x 50
1000	3410DH102M350HPA1	0.103	0.049	5.30	7.69	35 x 80
1000	3410EG102M350HPA1	0.112	0.053	5.20	7.54	40 x 63
1000	3410GF102M350HPA1	0.121	0.058	5.20	7.54	50 x 50

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Ratings

Cap. (µF)	Catalog Part Number	Max ESR @ 25 °C 120 Hz (Ω)	Max ESR @ 25 °C 20 kHz (Ω)	Ripple Amps Max @ 85 °C 120 Hz (A)	Ripple Amps Max @ 85 °C 20 kHz (A)	Nominal Size D x L (mm)
350 Vdc (400 Vdc Surge)						
1200	3410DJ122M350HPA1	0.091	0.043	6.30	9.14	35 x 105
1200	3410EH122M350HPA1	0.093	0.044	6.10	8.85	40 x 80
1200	3410FG122M350HPA1	0.102	0.049	5.80	8.41	45 x 63
1400	3410EJ142M350HPA1	0.079	0.038	7.10	10.30	40 x 105
1400	3410FH142M350HPA1	0.087	0.041	6.60	9.57	45 x 80
1400	3410GG142M350HPA1	0.091	0.043	6.40	9.28	50 x 63
1600	3410FJ162M350HPA1	0.075	0.036	7.70	11.17	45 x 105
1600	3410GH162M350HPA1	0.078	0.037	7.30	10.59	50 x 80
1900	3410GJ192M350HPA1	0.066	0.031	8.60	12.47	50 x 105
400 Vdc (450 Vdc Surge)						
470	3410DF471M400HPA1	0.209	0.099	3.30	4.79	35 x 50
560	3410EF561M400HPA1	0.178	0.085	3.80	5.51	40 x 50
680	3410DG681M400HPA1	0.146	0.069	4.20	6.09	35 x 63
680	3410FF681M400HPA1	0.161	0.077	4.30	6.24	45 x 50
820	3410DH821M400HPA1	0.122	0.058	5.00	7.25	35 x 80
820	3410EG821M400HPA1	0.125	0.059	4.90	7.11	40 x 63
820	3410GF821M400HPA1	0.137	0.065	4.90	7.11	50 x 50
1000	3410DJ102M400HPA1	0.101	0.048	6.00	8.70	35 x 105
1000	3410EH102M400HPA1	0.102	0.049	5.80	8.41	40 x 80
1000	3410FG102M400HPA1	0.112	0.053	5.50	7.98	45 x 63
1200	3410EJ122M400HPA1	0.089	0.042	6.90	10.01	40 x 105
1200	3410FH122M400HPA1	0.094	0.045	6.40	9.28	45 x 80
1200	3410GG122M400HPA1	0.097	0.046	6.20	8.99	50 x 63
1400	3410FJ142M400HPA1	0.081	0.039	7.50	10.88	45 x 105
1400	3410GH142M400HPA1	0.084	0.040	7.20	10.44	50 x 80
1600	3410GJ162M400HPA1	0.073	0.035	8.20	11.89	50 x 105
450 Vdc (500 Vdc Surge)						
330	3410DF331M450HPA1	0.291	0.138	2.80	4.06	35 x 50
390	3410EF391M450HPA1	0.246	0.117	3.20	4.64	40 x 50
470	3410DG471M450HPA1	0.205	0.098	3.60	5.22	35 x 63
470	3410FF471M450HPA1	0.220	0.105	3.70	5.37	45 x 50
560	3410DH561M450HPA1	0.172	0.082	4.20	6.09	35 x 80
560	3410EG561M450HPA1	0.174	0.083	4.10	5.95	40 x 63
560	3410GF561M450HPA1	0.188	0.089	4.20	6.09	50 x 50
680	3410DJ681M450HPA1	0.144	0.068	5.00	7.25	35 x 105
680	3410EH681M450HPA1	0.146	0.205	5.80	4.90	40 x 80
680	3410FG681M450HPA1	0.155	0.074	4.70	6.82	45 x 63
820	3410EJ821M450HPA1	0.122	0.058	5.90	8.56	40 x 105
820	3410FH821M450HPA1	0.129	0.061	5.50	7.98	45 x 80
820	3410GG821M450HPA1	0.133	0.063	5.30	7.69	50 x 63
1000	3410FJ102M450HPA1	0.107	0.051	6.50	9.43	45 x 105
1000	3410GH102M450HPA1	0.107	0.051	6.30	9.14	50 x 80
1200	3410GJ122M450HPA1	0.092	0.044	7.30	10.59	50 x 105

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