THE DATASHEET OF

228KXM050M

KXM

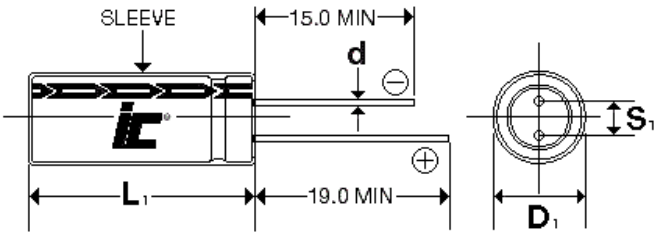
Radial Lead Aluminum Electrolytic Capacitors

+105°C Low Impedance

FEATURES	Standardized Case Sizes - High Ripple Current – Multiple Case Sizes
APPLICATIONS	Bypass – Coupling – Filtering – De-Coupling

Operating Temperature Range		**-55°C to +105°C**							
Capacitance Tolerance		**±20% at 120 Hz, 20°C**							
Surge Voltage	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**
	SVDC	7.9	13	20	32	44	63	79	125
Dissipation Factor	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**
	Tan δ	.22	.19	.16	.14	.12	.1	.1	.1
		Add .02 for every 1000uF above 1000uF							
Leakage Current		**2 Minutes**							
		.01CV or 3uA, Whichever is greater							
Low Temperature Stability Impedance Ratio (120 Hz)	**WVDC**	**6.3**	**10**	**16**	**25**	**35**	**50**	**63**	**100**
	-25°C to +20°C	4	3	2	2	2	2	2	2
	-40°C to +20°C	8	6	4	3	3	3	3	3
Load Life		**5000 hours at 105°C with rated WVDC and ripple current applied (4000 hrs. for D=10, 3000 hrs. for D=8, 2000 hrs. for D≤6.3)**							
	Capacitance Change	≤25% of initial measured value							
	Dissipation Factor	≤200% of maximum specified value							
	Leakage Current	≤100% of maximum specified value							
Shelf Life		**1000 hours at 105°C with no voltage applied**							
	Capacitance Change	≤25% initial measured value							
	Dissipation Factor	≤200% of maximum specified value							
	Leakage Current	≤100% of maximum specified value							
Ripple Current Multipliers			**Frequency (Hz)**						
	Capacitance	**50**	**120**	**1k**	**10k**	**100k**			
	C≤180	.4	.4	.75	.9	1.0			
	220<C≤560	.5	.5	.85	.94	1.0			
	680<C≤1800	.6	.6	.87	.95	1.0			
	2200<C≤3900	.75	.75	.9	.95	1.0			
	C≥4700	.85	.85	.95	.98	1.0			

Special Order Options



D	5	6.3	8	10	12.5	16	18
S	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8

mm

L_1=L+1.5 mm Max. (L<20mm)
L_1=L+2.0 mm Max. (L>20mm)
D_1=D+0.5 mm Max.
S_1=S+0.5 mm

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KXM

+105°C, High Voltage Low Impedance Long Life, 5000 hours

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Impedance Ω +20°C/ -10°C, 100kHz	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
6.3	150	157KXM6R3M	2.4315	0.3/1	250	5x11
6.3	330	337KXM6R3M	1.1052	0.13/0.41	405	6.3x11
6.3	560	567KXM6R3M	0.6513	0.072/0.22	760	8x11.5
6.3	820	827KXM6R3M	0.4448	0.056/0.17	995	8x16
6.3	1000	108KXM6R3M	0.3647	0.053/0.16	1030	10x12.5
6.3	1200	128KXM6R3M	0.3039	0.041/0.13	1250	8x20
6.3	1200	128KXM6R3MLQ	0.3039	0.058/0.144	1430	10x16
6.3	1500	158KXM6R3M	0.2432	0.023/0.069	1820	10x20
6.3	2200	228KXM6R3M	0.1658	0.022/0.066	1980	10x25
6.3	3300	338KXM6R3M	0.1105	0.021/0.053	2080	12.5x20
6.3	3900	398KXM6R3M	0.0935	0.018/0.045	2470	12.5x25
6.3	4700	478KXM6R3M	0.0776	0.016/0.041	3290	12.5x30
6.3	5600	568KXM6R3M	0.0651	0.015/0.039	3400	12.5x35
6.3	6800	688KXM6R3M	0.0536	0.016/0.043	3250	16x25
6.3	10000	109KXM6R3M	0.0365	0.022/0.043	3000	16x30
6.3	15000	159KXM6R3M	0.0243	0.02/0.041	3610	18x35
10	100	107KXM010M	3.1499	0.3/1	250	5x11
10	220	227KXM010M	1.4318	0.13/0.41	405	6.3x11
10	470	477KXM010M	0.6702	0.072/0.22	760	8x11.5
10	680	687KXM010M	0.4632	0.056/0.17	995	8x16
10	680	687KXM010MLN	0.4632	0.077/0.194	760	10x12.5
10	1000	108KXM010M	0.315	0.041/0.13	1250	8x20
10	1000	108KXM010MLQ	0.315	0.063/0.158	1430	10x16
10	1200	128KXM010M	0.2901	0.023/0.069	1820	10x20
10	1500	158KXM010M	0.21	0.022/0.066	2150	10x25
10	2200	228KXM010M	0.1733	0.021/0.053	2150	12.5x20
10	3300	338KXM010M	0.0955	0.018/0.045	2770	12.5x25
10	3900	398KXM010M	0.0808	0.016/0.041	3290	12.5x30
10	4700	478KXM010M	0.067	0.015/0.039	3400	12.5x35
10	4700	478KXM010MQV	0.067	0.025/0.051	2350	16x25
10	5600	568KXM010M	0.0562	0.016/0.043	3018	16x25
10	6800	688KXM010M	0.0463	0.023/0.045	2850	16x30
10	10000	109KXM010M	0.0315	0.021/0.041	3430	18x35
10	15000	159KXM010M	0.021	0.019/0.039	3850	18x40
16	56	566KXM016M	4.7368	0.3/1	250	5x11
16	68	686KXM016M	3.9009	0.5/1.25	180	5x11
16	120	127KXM016M	2.2105	0.13/0.41	405	6.3x11
16	330	337KXM016M	0.8038	0.072/0.22	760	8x11.5
16	470	477KXM016M	0.5644	0.056/0.17	995	8x16
16	470	477KXM016MLN	0.5644	0.053/0.233	1030	10x12.5
16	680	687KXM016M	0.3901	0.041/0.13	1250	8x20
16	680	687KXM016MLQ	0.3901	0.074/0.184	880	10x16
16	1000	108KXM016M	0.2653	0.023/0.069	1820	10x20
16	1200	128KXM016M	0.221	0.022/0.066	2150	10x25
16	1500	158KXM016M	0.1768	0.021/0.053	2360	12.5x20
16	2200	228KXM016M	0.1206	0.018/0.045	2770	12.5x25
16	2700	278KXM016M	0.0982	0.016/0.041	3290	12.5x30
16	3300	338KXM016M	0.0804	0.015/0.039	3150	12.5x35
16	3300	338KXM016MQV	0.0804	0.029/0.057	2200	16x25
16	3900	398KXM016M	0.068	0.016/0.043	3460	16x25
16	4700	478KXM016M	0.0564	0.024/0.048	2670	16x30
16	6800	688KXM016M	0.039	0.022/0.043	3280	18x35
16	10000	109KXM016M	0.0265	0.019/0.039	3670	18x40
25	47	476KXM025M	4.9383	0.3/1	250	5x11
25	100	107KXM025M	2.321	0.13/0.41	410	6.3x11
25	220	227KXM025M	1.055	0.072/0.22	760	8x11.5
25	330	337KXM025M	0.7033	0.056/0.17	995	8x16
25	330	337KXM025MLN	0.7033	0.053/0.17	1030	10x12.5

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Impedance Ω +20°C/ -10°C, 100kHz	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
25	470	477KXM025M	0.4938	0.041/0.13	1250	8x20
25	470	477KXM025MLQ	0.4938	0.038/0.221	1430	10x16
25	680	687KXM025M	0.3413	0.023/0.069	1820	10x20
25	820	827KXM025M	0.283	0.022/0.066	2150	10x25
25	1000	108KXM025M	0.2321	0.021/0.053	2360	12.5x20
25	1200	128KXM025M	0.1934	0.05/0.124	1730	12.5x20
25	1500	158KXM025M	0.1547	0.018/0.045	2770	12.5x25
25	1800	188KXM025M	0.1289	0.016/0.041	3290	12.5x30
25	2200	228KXM025M	0.1055	0.015/0.039	3400	12.5x35
25	2200	228KXM025MQV	0.1055	0.032/0.065	2390	16x25
25	2700	278KXM025M	0.086	0.016/0.043	3000	16x25
25	3300	338KXM025M	0.0703	0.027/0.054	3020	16x30
25	4700	478KXM025M	0.0494	0.023/0.046	3700	18x35
35	33	336KXM035M	6.0286	0.3/1	250	5x11
35	56	566KXM035M	3.5526	0.25/0.41	350	6.3x11
35	68	686KXM035M	2.9256	0.397/0.991	280	6.3x11
35	150	157KXM035M	1.3263	0.072/0.22	760	8x11.5
35	220	227KXM035M	0.9043	0.065/0.17	980	8x16
35	220	227KXM035MLN	0.9043	0.06/0.319	1050	10x12.5
35	270	277KXM035M	0.7368	0.041/0.13	1250	8x20
35	330	337KXM035M	0.6029	0.038/0.12	1430	10x16
35	470	477KXM035M	0.4233	0.023/0.069	1820	10x20
35	560	567KXM035M	0.3553	0.022/0.066	2150	10x25
35	680	687KXM035M	0.2926	0.021/0.053	2150	12.5x20
35	1000	108KXM035M	0.1989	0.018/0.045	2770	12.5x25
35	1200	128KXM035M	0.1658	0.016/0.041	3290	12.5x30
35	1500	158KXM035M	0.1326	0.015/0.039	3400	12.5x35
35	1500	158KXM035MQV	0.1326	0.04/0.079	2700	16x25
35	1800	188KXM035M	0.1105	0.016/0.043	3460	16x25
35	2200	228KXM035M	0.0904	0.031/0.077	2880	16x30
35	3300	338KXM035M	0.0603	0.026/0.064	3650	18x35
50	4.7	475KXM050M	35.2737	1.699/5.096	80	5x11
50	10	106KXM050M	16.579	0.55/3.992	240	5x11
50	22	226KXM050M	7.5357	0.34/1.18	238	5x11
50	33	336KXM050M	5.0238	0.564/1.411	230	6.3x11
50	47	476KXM050M	3.5274	0.24/1.132	320	6.3x11
50	56	566KXM050M	2.9605	0.14/0.5	385	6.3x11
50	68	686KXM050M	2.438	0.352/0.88	380	8x11.5
50	100	107KXM050M	1.6579	0.1/0.24	610	8x11.5
50	120	127KXM050M	1.3816	0.061/0.18	950	8x15
50	150	157KXM050M	1.1052	0.061/0.18	979	10x12.5
50	180	187KXM050M	0.921	0.046/0.14	1190	8x20
50	220	227KXM050M	0.7536	0.06/0.12	1136	10x16
50	270	277KXM050M	0.614	0.03/0.09	1580	10x20
50	330	337KXM050M	0.5024	0.028/0.085	1870	10x25
50	470	477KXM050M	0.3527	0.035/0.068	1900	12.5x20
50	560	567KXM050M	0.296	0.023/0.059	2410	12.5x25
50	680	687KXM050M	0.2438	0.021/0.052	2860	12.5x30
50	820	827KXM050M	0.2022	0.019/0.023	3960	12.5x35
50	1000	108KXM050M	0.1658	0.021/0.056	2850	16x25
50	1200	128KXM050M	0.1382	0.042/0.083	2710	16x30
50	1500	158KXM050M	0.1326	0.035/0.071	3010	16x35
50	2200	228KXM050M	0.1055	0.027/0.055	3690	18x35
50	3300	338KXM050M	0.0804	0.023/0.046	4350	18x40
63	10	106KXM063M	16.579	1.08/2.16	137	5x11
63	12	126KXM063M	11.0524	0.95/1.9	148	5x11
63	15	156KXM063M	8.842	0.75/1.5	185	6.3x11
63	18	186KXM063M	7.3683	0.64/1.28	198	6.3x11

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KXM

+105°C, High Voltage Low Impedance Long Life, 5000 hours

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Impedance Ω +20°C/ -10°C, 100kHz	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
63	22	226KXM063M	7.5357	0.5/1.06	250	6.3x11
63	27	276KXM063M	6.1402	0.43/0.86	240	6.3x11
63	33	336KXM063M	5.0238	0.36/0.72	308	6.3x15
63	39	396KXM063M	4.2509	0.31/0.62	325	6.3x15
63	47	476KXM063M	3.5274	0.22/0.81	480	8x11.5
63	56	566KXM063MJP	2.9605	0.22/0.44	460	8x16
63	56	566KXM063M	2.9605	0.24/0.48	445	10x12.5
63	68	686KXM063MJP	2.438	0.18/0.36	510	8x16
63	68	686KXM063M	2.438	0.2/0.4	500	10x12.5
63	82	826KXM063MJU	2.0218	0.17/0.34	600	8x20
63	82	826KXM063M	2.0218	0.16/0.32	580	10x15
63	100	107KXM063M	1.6579	0.13/0.26	748	10x20
63	100	107KXM063MNP	1.6579	0.15/0.3	700	12.5x15
63	120	127KXM063M	1.3816	0.11/0.22	820	10x20
63	120	127KXM063MNP	1.3816	0.125/0.15	755	12.5x15
63	150	157KXM063M	1.1052	0.092/0.184	940	10x25
63	150	157KXM063MNP	1.1052	0.095/0.19	847	12.5x15
63	180	187KXM063M	0.921	0.077/0.154	1100	10x30
63	180	187KXM063MQP	0.921	0.082/0.164	1025	16x15
63	220	227KXM063M	0.6029	0.067/0.134	1145	12.5x20
63	220	227KXM063MQP	0.6029	0.072/0.144	1125	16x15
63	270	277KXM063M	0.614	0.056/0.112	1350	12.5x25
63	270	277KXM063MRP	0.614	0.06/0.12	1300	18x15
63	330	337KXM063M	0.5024	0.05/0.1	1425	12.5x25
63	330	337KXM063MRP	0.5024	0.051/0.102	1400	18x15
63	390	397KXM063M	0.4251	0.044/0.088	1625	12.5x30
63	390	397KXM063MQU	0.4251	0.047/0.094	1500	16x20
63	470	477KXM063M	0.3527	0.04/0.08	1785	12.5x35
63	470	477KXM063MQV	0.3527	0.042/0.084	1700	16x25
63	560	567KXM063M	0.296	0.036/0.072	1950	12.5x40
63	560	567KXM063MRU	0.296	0.04/0.08	1725	18x20
63	680	687KXM063M	0.195	0.033/0.066	2050	16x30
63	680	687KXM063MRV	0.195	0.036/0.072	1950	18x25
63	820	827KXM063M	0.2022	0.03/0.06	2225	16x35
63	820	827KXM063MRW	0.2022	0.032/0.064	2100	18x30
63	1000	108KXM063M	0.1658	0.028/0.056	2375	16x40
63	1000	108KXM063MRY	0.1658	0.03/0.06	2280	18x35
63	1200	128KXM063M	0.1243	0.026/0.052	2500	18x40
100	1	105KXM100M	132.629	17/46	26	5x11
100	1.5	155KXM100M	88.419	10/27	33	5x11
100	2.2	225KXM100M	75.3575	6.8/18.36	45	5x11
100	3.3	335KXM100M	40.191	4.15/11.205	55	5x11

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Impedance Ω +20°C/ -10°C, 100kHz	Maximum RMS Ripple Current (mA) 100 kHz, +105°C	Dims DxL (mm)
100	4.7	475KXM100M	35.2737	3/8.1	70	6.3x11
100	6.8	685KXM100M	24.38	2/5.4	85	6.3x11
100	10	106KXM100M	16.579	1/3.375	150	6.3x11
100	12	126KXM100M	11.0524	1/2.7	115	6.3x11
100	15	156KXM100M	8.842	0.82/2.214	132	6.3x15
100	18	186KXM100M	7.3683	0.39/1.863	155	6.3x15
100	22	226KXM100M	7.5357	0.8/1.54	370	8x11.5
100	27	276KXM100MJP	6.1402	0.48/1.3	280	8x16
100	27	276KXM100M	6.1402	0.05/1.4	270	10x12.5
100	33	336KXM100MJP	5.0238	0.4/1.08	300	8x16
100	33	336KXM100M	5.0238	0.44/1.19	295	10x12.5
100	39	396KXM100MJU	4.2509	0.34/0.92	350	8x20
100	39	396KXM100M	4.2509	0.38/1.03	340	10x15
100	47	476KXM100M	3.5274	0.3/0.81	420	10x20
100	47	476KXM100MNP	3.5274	0.33/0.89	400	12.5x15
100	56	566KXM100M	2.9605	0.25/0.675	455	10x20
100	56	566KXM100MNP	2.9605	0.29/0.78	430	12.5x15
100	68	686KXM100M	2.438	0.22/0.594	530	10x25
100	68	686KXM100MNP	2.438	0.25/0.675	465	12.5x15
100	82	826KXM100M	2.0218	0.2/0.54	610	10x30
100	82	826KXM100MQP	2.0218	0.21/0.567	680	16x15
100	100	107KXM100M	1.6579	0.16/0.432	660	10x30
100	100	107KXM100MQP	1.6579	0.18/0.486	715	16x15
100	120	127KXM100M	1.3816	0.135/0.351	770	12.5x25
100	120	127KXM100MQP	1.3816	0.15/0.405	795	16x15
100	150	157KXM100M	1.1052	0.12/0.324	800	12.5x25
100	150	157KXM100MRP	1.1052	0.13/0.351	915	18x15
100	180	187KXM100M	0.921	0.1/0.27	900	12.5x30
100	180	187KXM100MQU	0.921	0.11/0.3	995	16x20
100	220	227KXM100M	0.6029	0.088/0.238	1000	12.5x35
100	220	227KXM100MQV	0.6029	0.094/0.254	1150	16x25
100	270	277KXM100M	0.614	0.074/0.2	1110	12.5x40
100	270	277KXM100MRU	0.614	0.082/0.221	1225	18x20
100	330	337KXM100M	0.5024	0.065/0.176	1520	16x30
100	330	337KXM100MRV	0.5024	0.072/0.194	1425	18x25
100	390	397KXM100M	0.4251	0.055/0.149	1725	16x35
100	390	397KXM100MRW	0.4251	0.063/0.17	1600	18x30
100	470	477KXM100M	0.3527	0.049/0.132	1920	16x40
100	470	477KXM100MRY	0.3527	0.056/0.157	1775	18x35
100	560	567KXM100M	0.296	0.043/0.116	2050	18x35
100	680	687KXM100M	0.195	0.038/0.103	2300	18x40

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