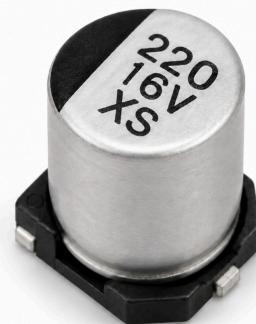


KXS Series

SMD Aluminium Electrolytic Capacitors (V-chip)



Features

- Designed for reflow soldering
- Designed for surface mounting on high-density PCB
- RoHS 2.0 compliant
- 219 SVHC & REACH compliant

TEMPERATURE RANGE
-40°C ... +85°C

RATED VOLTAGE
6.3 – 100 V

CAPACITANCE
1 – 2200 μ F

ENDURANCE
85°C 2000 h

Specifications

Category temp. range	-40°C to +85°C	
Capacitance tolerance	±20% (120 Hz / +20 °C)	
Leakage current	I ≤ 0.01 CV or 3 μA whichever is greater (after 2 minutes)	
Tan δ	See the characteristics list	
Endurance	After applying rated working voltage for 2000 hours at +85 °C ± 2 °C, and then being stabilized at +20 °C , capacitors shall meet the following limits.	
	Capacitance change	Within ±20% of the initial value Part Number with "*" : Within ±30% of the initial value
	Dissipation factor (tan δ)	Less than 200% of the initial value Part Number with "*" : Less than 300% of the initial value
	Leakage current	Within the initial limit
Shelf life	After storage for 1000 h at +85 °C ± 2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance.	
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.	
	Capacitance change	Within ±10% of the initial value
	Dissipation factor (tan δ)	Within the initial limit
	Leakage current	Within the initial limit

Low-temperature characteristics

Rated voltage (V)	6.3	10	16	25	35	50	63	100
Z(-25°C)/Z(+20°C)	4	4	3	2	2	2	2	2
Z(-40°C)/Z(+20°C)	8	6	4	3	3	3	3	3

Impedance ratio at 120 Hz

Ripple current frequency correction factor

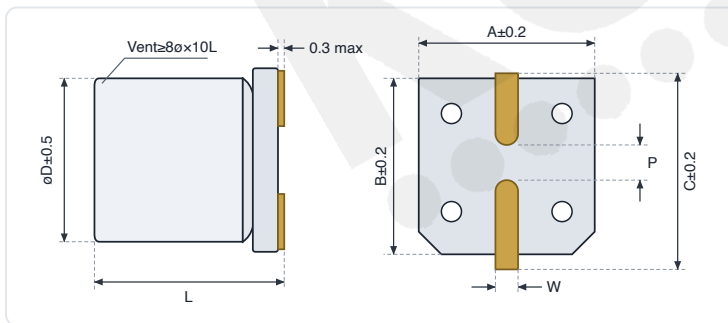
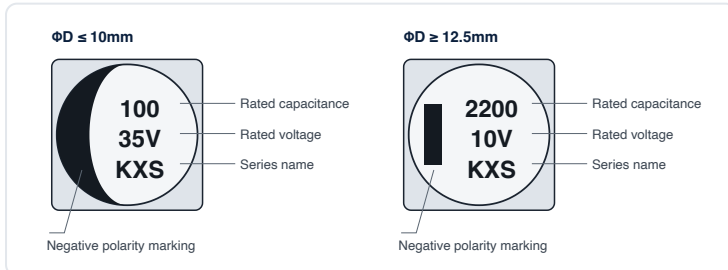
Frequency	50Hz	120Hz	1kHz	10kHz $\leq$
$C \leq 1000\mu\text{F}$	0.7	1.0	1.2	1.3
$C > 1000\mu\text{F}$	0.8	1.0	1.1	1.2

Standard ratings

$\mu\text{F} \setminus \text{V}$	6.3	10	16	25	35	50	63	100
1						4x5.4	4x5.4	
2.2						4x5.4	4x5.4	
3.3						4x5.4	5x5.4 6.3x5.4	
4.7				4x5.4	4x5.4	4x5.4 5x5.4	5x5.4 6.3x5.4	5x5.4 6.3x5.4 6.3x7.7
10			4x5.4	4x5.4 5x5.4	4x5.4 5x5.4	5x5.4 6.3x5.4	6.3x5.4 8x6.5	6.3x5.4 6.3x7.7 8x6.5 8x10.5
22	4x5.4	4x5.4	4x5.4 5x5.4	5x5.4 6.3x5.4	5x5.4 6.3x5.4	6.3x5.4 6.3x7.7 8x6.5	6.3x7.7 8x6.5 8x10.5	8x10.5 10x10.5
33	4x5.4	4x5.4 5x5.4	5x5.4	5x5.4 6.3x5.4	6.3x5.4 8x6.5	6.3x7.7 8x6.5	8x10.5	10x10.5
47	4x5.4 5x5.4	5x5.4	5x5.4 6.3x5.4	6.3x5.4 8x6.5	6.3x5.4 6.3x7.7 8x6.5	6.3x7.7 8x6.5 8x10.5	8x10.5 10x10.5	10x10.5 10x13 12.5x13.5
68	6.3x5.4	6.3x5.4	6.3x5.4	6.3x5.4	6.3x7.7	8x6.5 8x10.5		10x13 12.5x13.5
100	5x5.4 6.3x5.4	5x5.4 6.3x5.4	6.3x5.4 6.3x7.7 8x6.5	6.3x5.4 6.3x7.7 8x6.5 8x10.5	6.3x7.7 8x10.5 10x7.7	8x10.5 10x10.5	10x10.5 10x13 12.5x13.5	12.5x13.5
150		6.3x5.4	6.3x7.7 8x6.5	6.3x7.7 8x10.5	8x10.5			
220	6.3x5.4 6.3x7.7	6.3x5.4 6.3x7.7 8x6.5	6.3x7.7 8x6.5 8x10.5	8x10.5 10x7.7	8x10.5 10x10.5	10x10.5 10x13	12.5x13.5	
330	6.3x7.7 8x6.5	6.3x7.7 8x10.5	8x10.5 10x7.7	8x10.5 10x10.5	10x10.5 10x13	10x13 12.5x13.5		
470	6.3x7.7 8x10.5	8x10.5 10x7.7	8x10.5 10x10.5	10x10.5	10x13 12.5x13.5			
680			10x10.5	10x13	12.5x13.5			
1000	8x10.5 10x10.5	10x10.5	10x10.5 10x13 12.5x13.5	12.5x13.5				
2200	12.5x13.5	12.5x13.5						

Case size $\Phi D \times L$ (mm). Full ratings in the characteristics list.

Dimensions and marking



ΦD	L	A	B	C	W	P ± 0.2
4	5.4 ± 0.4	4.3	4.3	5.1	0.5~0.8	1.0
5	5.4 ± 0.4	5.3	5.3	6.1	0.5~0.8	1.3
6.3	5.4 ± 0.4	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7 ± 0.3	6.6	6.6	7.3	0.5~0.8	2.2
8	6.5 ± 0.5	8.3	8.3	9.2	0.7~1.2	3.1
8	10.5 ± 0.5	8.3	8.3	9.2	0.7~1.2	3.1
10	7.7 ± 0.3	10.3	10.3	11.2	0.7~1.2	4.4
10	10.5 ± 0.5	10.3	10.3	11.2	0.7~1.2	4.4
10	13 ± 0.5	10.3	10.3	11.2	0.7~1.2	4.4
12.5	13.5 ± 0.5	13.0	13.0	14.0	1.0~1.4	4.4
12.5	16 ± 0.5	13.0	13.0	14.0	1.0~1.4	4.4

Unit: mm

Marking: black

Part number system

KXS

Series name
KXS series

1C

Rated voltage
16V

221

Capacitance
220 μ F

M

Capacitance tolerance
 $\pm 20\%$

0607

Case Size
6.3 Φ X7.7L

Example: KXS1C221M0607

Characteristics list

Rated voltage (V)	Capacitance ($\pm 20\%$) (μ F)	Φ D (mm)	L (mm)	Rated ripple current① (mA rms)	$\tan \delta$ ②	Part Number③	MPQ (pcs/reel)
6.3	22	4	5.4	26	0.30	KXS0J220M0405	2000
6.3	33	4	5.4	31	0.30	KXS0J330M0405	2000
6.3	47	4	5.4	34	0.30	KXS0J470M0405	2000
6.3	47	5	5.4	46	0.30	KXS0J470M0505	1000
6.3	68	6.3	5.4	71	0.30	KXS0J680M0605	1000
6.3	100	5	5.4	47	0.30	KXS0J101M0505	1000
6.3	100	6.3	5.4	71	0.30	KXS0J101M0605	1000
6.3	220	6.3	5.4	74	0.30	KXS0J221M0605	1000
6.3	220	6.3	7.7	124	0.30	KXS0J221M0607	1000
6.3	330	6.3	7.7	124	0.30	KXS0J331M0607	1000
6.3	330	8	6.5	190	0.30	KXS0J331M0806	1000
6.3	470	6.3	7.7	124	0.30	KXS0J471M0607	1000
6.3	470	8	10.5	290	0.30	KXS0J471M0810	500
6.3	1000	8	10.5	350	0.32	*KXS0J102M0810	500
6.3	1000	10	10.5	430	0.32	KXS0J102M1010	500
6.3	2200	12.5	13.5	700	0.42	KXS0J222M1313	200
10	22	4	5.4	28	0.24	KXS1A220M0405	2000
10	33	4	5.4	29	0.24	KXS1A330M0405	2000
10	33	5	5.4	43	0.24	KXS1A330M0505	1000
10	47	5	5.4	43	0.24	KXS1A470M0505	1000
10	68	6.3	5.4	70	0.24	KXS1A680M0605	1000
10	100	5	5.4	50	0.24	KXS1A101M0505	1000
10	100	6.3	5.4	70	0.24	KXS1A101M0605	1000
10	150	6.3	5.4	70	0.24	KXS1A151M0605	1000
10	220	6.3	5.4	70	0.24	KXS1A221M0605	1000
10	220	6.3	7.7	124	0.24	KXS1A221M0607	1000
10	220	8	6.5	175	0.24	KXS1A221M0806	1000
10	330	6.3	7.7	125	0.24	KXS1A331M0607	1000
10	330	8	10.5	290	0.24	KXS1A331M0810	500
10	470	8	10.5	290	0.24	KXS1A471M0810	500
10	470	10	7.7	290	0.24	KXS1A471M1007	500
10	1000	10	10.5	400	0.26	KXS1A102M1010	500
10	2200	12.5	13.5	750	0.38	KXS1A222M1313	200
16	10	4	5.4	26	0.20	KXS1C100M0405	2000
16	22	4	5.4	28	0.20	KXS1C220M0405	2000
16	22	5	5.4	39	0.20	KXS1C220M0505	1000
16	33	5	5.4	35	0.20	KXS1C330M0505	1000
16	47	5	5.4	39	0.20	KXS1C470M0505	1000
16	47	6.3	5.4	70	0.20	KXS1C470M0605	1000
16	68	6.3	5.4	70	0.20	KXS1C680M0605	1000
16	100	6.3	5.4	70	0.20	KXS1C101M0605	1000
16	100	6.3	7.7	109	0.20	KXS1C101M0607	1000
16	100	8	6.5	125	0.20	KXS1C101M0806	1000
16	150	6.3	7.7	109	0.20	KXS1C151M0607	1000
16	150	8	6.5	125	0.20	KXS1C151M0806	1000
16	220	6.3	7.7	125	0.20	KXS1C221M0607	1000
16	220	8	6.5	160	0.20	KXS1C221M0806	1000
16	220	8	10.5	270	0.20	KXS1C221M0810	500
16	330	8	10.5	270	0.20	KXS1C331M0810	500
16	330	10	7.7	270	0.20	KXS1C331M1007	500
16	470	8	10.5	270	0.20	KXS1C471M0810	500
16	470	10	10.5	360	0.20	KXS1C471M1010	500
16	680	10	10.5	360	0.20	KXS1C681M1010	500
16	1000	10	10.5	360	0.22	KXS1C102M1010	500

Rated voltage (V)	Capacitance (±20%) (μF)	ΦD (mm)	L (mm)	Rated ripple current① (mA rms)	tan δ②	Part Number③	MPQ (pcs/reel)
16	1000	10	13	420	0.22	KXS1C102M1013	400
16	1000	12.5	13.5	600	0.32	KXS1C102M1313	200
25	4.7	4	5.4	22	0.18	KXS1E4R7M0405	2000
25	10	4	5.4	22	0.18	KXS1E100M0405	2000
25	10	5	5.4	28	0.18	KXS1E100M0505	1000
25	22	5	5.4	35	0.18	KXS1E220M0505	1000
25	22	6.3	5.4	55	0.18	KXS1E220M0605	1000
25	33	5	5.4	42	0.18	KXS1E330M0505	1000
25	33	6.3	5.4	65	0.18	KXS1E330M0605	1000
25	47	6.3	5.4	70	0.18	KXS1E470M0605	1000
25	47	8	6.5	80	0.18	KXS1E470M0806	1000
25	68	6.3	5.4	70	0.18	*KXS1E680M0605	1000
25	100	6.3	5.4	70	0.18	*KXS1E101M0605	1000
25	100	6.3	7.7	100	0.18	KXS1E101M0607	1000
25	100	8	6.5	100	0.18	KXS1E101M0806	1000
25	100	8	10.5	180	0.18	KXS1E101M0810	500
25	150	6.3	7.7	100	0.18	KXS1E151M0607	1000
25	150	8	10.5	180	0.18	KXS1E151M0810	500
25	220	8	10.5	175	0.18	KXS1E221M0810	500
25	220	10	7.7	160	0.18	KXS1E221M1007	500
25	330	8	10.5	270	0.18	KXS1E331M0810	500
25	330	10	10.5	340	0.18	KXS1E331M1010	500
25	470	10	10.5	380	0.18	KXS1E471M1010	500
25	680	10	13	400	0.18	KXS1E681M1013	400
25	1000	12.5	13.5	580	0.30	KXS1E102M1313	200
35	4.7	4	5.4	22	0.16	KXS1V4R7M0405	2000
35	10	4	5.4	22	0.16	KXS1V100M0405	2000
35	10	5	5.4	30	0.16	KXS1V100M0505	1000
35	22	5	5.4	36	0.16	KXS1V220M0505	1000
35	22	6.3	5.4	59	0.16	KXS1V220M0605	1000
35	33	6.3	5.4	60	0.16	KXS1V330M0605	1000
35	33	8	6.5	85	0.16	KXS1V330M0806	1000
35	47	6.3	5.4	70	0.16	KXS1V470M0605	1000
35	47	6.3	7.7	98	0.16	KXS1V470M0607	1000
35	47	8	6.5	105	0.16	KXS1V470M0806	1000
35	68	6.3	7.7	98	0.16	KXS1V680M0607	1000
35	100	6.3	7.7	132	0.16	KXS1V101M0607	1000
35	100	8	10.5	140	0.16	KXS1V101M0810	500
35	100	10	7.7	140	0.16	KXS1V101M1007	500
35	150	8	10.5	185	0.16	KXS1V151M0810	500
35	220	8	10.5	200	0.16	KXS1V221M0810	500
35	220	10	10.5	310	0.16	KXS1V221M1010	500
35	330	10	10.5	350	0.16	KXS1V331M1010	500
35	330	10	13	400	0.16	KXS1V331M1013	400
35	470	10	13	400	0.16	KXS1V471M1013	400
35	470	12.5	13.5	520	0.22	KXS1V471M1313	200
35	680	12.5	13.5	530	0.22	KXS1V681M1313	200
50	1	4	5.4	10	0.14	KXS1H010M0405	2000
50	2.2	4	5.4	14	0.14	KXS1H2R2M0405	2000
50	3.3	4	5.4	16	0.14	KXS1H3R3M0405	2000
50	4.7	4	5.4	18	0.14	KXS1H4R7M0405	2000
50	4.7	5	5.4	23	0.14	KXS1H4R7M0505	1000
50	10	5	5.4	27	0.14	KXS1H100M0505	1000
50	10	6.3	5.4	35	0.14	KXS1H100M0605	1000
50	22	6.3	5.4	40	0.14	KXS1H220M0605	1000
50	22	6.3	7.7	65	0.14	KXS1H220M0607	1000
50	22	8	6.5	70	0.14	KXS1H220M0806	1000
50	33	6.3	7.7	75	0.14	KXS1H330M0607	1000
50	33	8	6.5	90	0.14	KXS1H330M0806	1000
50	47	6.3	7.7	75	0.14	KXS1H470M0607	1000
50	47	8	6.5	90	0.14	KXS1H470M0806	1000
50	47	8	10.5	120	0.14	KXS1H470M0810	500

Rated voltage (V)	Capacitance (±20%) (μF)	ΦD (mm)	L (mm)	Rated ripple current① (mA rms)	tan δ②	Part Number③	MPQ (pcs/reel)
50	68	8	6.5	90	0.14	KXS1H680M0806	1000
50	68	8	10.5	120	0.14	KXS1H680M0810	500
50	100	8	10.5	190	0.14	KXS1H101M0810	500
50	100	10	10.5	230	0.14	KXS1H101M1010	500
50	220	10	10.5	280	0.14	KXS1H221M1010	500
50	220	10	13	320	0.14	KXS1H221M1013	400
50	330	10	13	320	0.14	KXS1H331M1013	400
50	330	12.5	13.5	520	0.18	KXS1H331M1313	200
63	1	4	5.4	8	0.14	KXS1J010M0405	2000
63	2.2	4	5.4	12	0.14	KXS1J2R2M0405	2000
63	3.3	5	5.4	22	0.14	KXS1J3R3M0505	1000
63	3.3	6.3	5.4	30	0.14	KXS1J3R3M0605	1000
63	4.7	5	5.4	25	0.14	KXS1J4R7M0505	1000
63	4.7	6.3	5.4	30	0.14	KXS1J4R7M0605	1000
63	10	6.3	5.4	30	0.14	KXS1J100M0605	1000
63	10	8	6.5	32	0.14	KXS1J100M0806	1000
63	22	6.3	7.7	49	0.14	KXS1J220M0607	1000
63	22	8	6.5	55	0.14	KXS1J220M0806	1000
63	22	8	10.5	98	0.14	KXS1J220M0810	500
63	33	8	10.5	98	0.14	KXS1J330M0810	500
63	47	8	10.5	119	0.14	KXS1J470M0810	500
63	47	10	10.5	160	0.14	KXS1J470M1010	500
63	100	10	10.5	196	0.14	KXS1J101M1010	500
63	100	10	13	210	0.14	KXS1J101M1013	400
63	100	12.5	13.5	270	0.16	KXS1J101M1313	200
63	220	12.5	13.5	470	0.16	KXS1J221M1313	200
100	4.7	5	5.4	15	0.14	KXS2A4R7M0505	1000
100	4.7	6.3	5.4	21	0.14	KXS2A4R7M0605	1000
100	4.7	6.3	7.7	35	0.14	KXS2A4R7M0607	1000
100	10	6.3	5.4	25	0.14	*KXS2A100M0605	1000
100	10	6.3	7.7	35	0.14	KXS2A100M0607	1000
100	10	8	6.5	50	0.14	KXS2A100M0806	1000
100	10	8	10.5	90	0.14	KXS2A100M0810	500
100	22	8	10.5	90	0.14	KXS2A220M0810	500
100	22	10	10.5	120	0.14	KXS2A220M1010	500
100	33	10	10.5	120	0.14	KXS2A330M1010	500
100	47	10	10.5	120	0.14	KXS2A470M1010	500
100	47	10	13	160	0.14	KXS2A470M1013	400
100	47	12.5	13.5	250	0.16	KXS2A470M1313	200
100	68	10	13	180	0.14	KXS2A680M1013	400
100	68	12.5	13.5	300	0.16	KXS2A680M1313	200
100	100	12.5	13.5	380	0.16	KXS2A101M1313	200

① Rated ripple current (120Hz / +85°C)

② tan δ (120Hz / +20°C)

③ For plastic reel packaging , the Part Number is appended with "PR" at the end.