

A1 Series

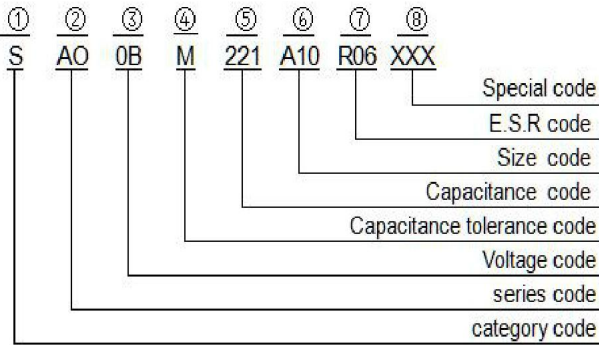


- Endurance :2000 hours at 105 °C
- Low ESR
- Recommended Applications: System Board ,Display Card, Small Changer
- RoHS Compliance and lead-free

Specifications

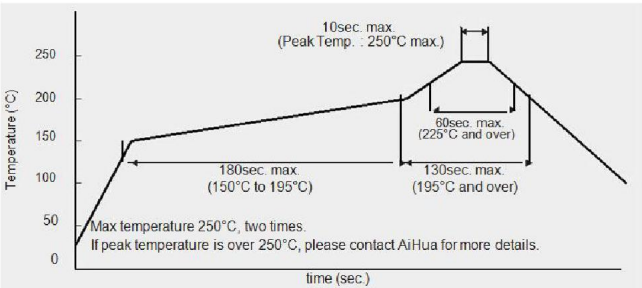
Items		Performance Characteristics
Operating Temperature Range		- 55℃ ~ 105℃
Rated Working Voltage Range		2V ~25V.DC
Nominal Capacitance Range		2.2µF~560µF
Capacitance Tolerance		±20%(M) (at 20℃,120Hz)
DC Leakage Current		I ≤0.06CV (µA) 2 minutes (2V ~ 10V.DC) I ≤0.1CV (µA) 2 minutes (12.5V ~ 25V.DC)
tan δ		≤0.06~0.1 (120HZ,20℃)
Surge Voltage		Rated voltage x 1.25 (2V.DC to 16V.DC) ,×1.15(20V.DC to 25V.DC) (15℃ ~ 35℃)
Endurance (+105℃, 2,000 hours, rated voltage applied)	ΔC/C	Within ±20% of the initial measured value
	tan δ	≤150% of the initial specified value
	LC	≤The initial specified value
Moisture Resistance After storing for 500 hours at 60℃, 90%RH	ΔC/C	+70, -20% (2V~2.5V.DC) +60, -20% (4V.DC) +50, -20% (6.3V~7.5V.DC) +40, -20%(8V~25V)
	tan δ	≤200% of the initial specified value
	LC	≤The initial specified value

Part Numbering

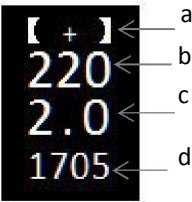


Reflow Soldering Conditions

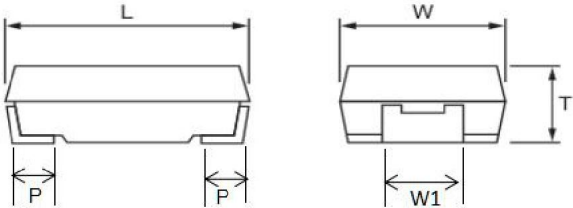
Recommended Reflow Profile



Mark & Dimension



- a): Polarity code
- b): Capacitance code
- c): Rated voltage code
- d): Date code



Series Code	L(±0.3)	W(±0.2)	T(±0.2)	P(±0.2)	W1 (±0.2)
A1	7.3	4.3	1.9	1.3	2.4

◆ STANDARD RATINGS

Rated Voltage VDC	Cap. (uF)120HZ, 20℃	Size (LxWxT mm)	Cap Tolerance(%)	ESR (mΩ),20℃ 100kHz (max.)	Rated ripple current(mArms) 100kHz, 20℃ 105℃	Leakage Current (uA max) 20℃	Min. Packaging Quantity (PCS)	Part Number
2	100	7.3*4.3*1.9	M	16	2000	12.0	3500	SA10BM101A19R16XXX
2	150	7.3*4.3*1.9	M	9	3000	18.0	3500	SA10BM151A19R09XXX
2	220	7.3*4.3*1.9	M	9	3000	26.4	3500	SA10BM221A19R09XXX
2	220	7.3*4.3*1.9	L	9	3000	26.4	3500	SA10BL221A19R09XXX
2	270	7.3*4.3*1.9	M	9	3500	32.4	3500	SA10BM271A19R09XXX
2	330	7.3*4.3*1.9	M	6	3500	39.6	3500	SA10BM271A19R06XXX
2	330	7.3*4.3*1.9	M	9	3500	39.6	3500	SA10BM331A19R09XXX
2	330	7.3*4.3*1.9	M	9	3500	132.0	3500	SA10BM331A19R09XXX
2	330	7.3*4.3*1.9	L	6	3500	39.6	3500	SA10BL331A19R06XXX
2	330	7.3*4.3*1.9	L	9	3500	39.6	3500	SA10BL331A19R09XXX
2	330	7.3*4.3*1.9	L	9	3500	132.0	3500	SA10BL331A19R09XXX
2	470	7.3*4.3*1.9	M	4.5	3500	56.4	3500	SA10BM471A19R04XXX
2	470	7.3*4.3*1.9	M	6	3500	56.4	3500	SA10BM471A19R06XXX
2	470	7.3*4.3*1.9	M	9	3500	56.4	3500	SA10BM471A19R09XXX
2	470	7.3*4.3*1.9	M	9	3500	188.0	3500	SA10BM471A19R09XXX
2	470	7.3*4.3*1.9	L	9	3500	56.4	3500	SA10BL471A19R09XXX
2	470	7.3*4.3*1.9	L	9	3500	188.0	3500	SA10BL471A19R09XXX
2.5	100	7.3*4.3*1.9	M	16	2000	15.0	3500	SA10EM101A19R16XXX
2.5	150	7.3*4.3*1.9	M	9	3000	22.5	3500	SA10EM151A19R09XXX
2.5	180	7.3*4.3*1.9	M	9	3000	27.0	3500	SA10EM181A19R09XXX
2.5	220	7.3*4.3*1.9	M	9	3000	33.0	3500	SA10EM221A19R09XXX
2.5	220	7.3*4.3*1.9	L	9	3000	33.0	3500	SA10EL221A19R09XXX
2.5	270	7.3*4.3*1.9	M	9	3500	40.5	3500	SA10EM271A19R09XXX
2.5	330	7.3*4.3*1.9	M	7	3500	49.5	3500	SA10EM331A19R07XXX
2.5	330	7.3*4.3*1.9	M	9	3500	49.5	3500	SA10EM331A19R09XXX
2.5	470	7.3*4.3*1.9	M	4.5	3500	70.5	3500	SA10EM471A19R04XXX
2.5	470	7.3*4.3*1.9	M	6	3500	70.5	3500	SA10EM471A19R06XXX
4	68	7.3*4.3*1.9	M	20	1900	16.3	3500	SA10GM680A19R20XXX
4	82	7.3*4.3*1.9	M	16	2100	19.7	3500	SA10GM820A19R16XXX
4	120	7.3*4.3*1.9	M	16	2100	28.8	3500	SA10GM121A19R16XXX
4	150	7.3*4.3*1.9	M	16	2100	36.0	3500	SA10GM151A19R16XXX
4	220	7.3*4.3*1.9	M	15	3000	52.8	3500	SA10GM221A19R15XXX
6.3	10	7.3*4.3*1.9	M	55	1000	3.8	3500	SA10JM100A19R55XXX
6.3	22	7.3*4.3*1.9	M	80	1000	8.3	3500	SA10JM220A19R80XXX
6.3	33	7.3*4.3*1.9	M	80	1800	12.5	3500	SA10JM330A19R80XXX
6.3	47	7.3*4.3*1.9	M	35	1800	17.8	3500	SA10JM470A19R35XXX
6.3	47	7.3*4.3*1.9	M	40	1800	17.8	3500	SA10JM470A19R40XXX
6.3	68	7.3*4.3*1.9	M	15	2000	25.7	3500	SA10JM680A19R15XXX
6.3	100	7.3*4.3*1.9	M	15	2000	37.8	3500	SA10JM101A19R15XXX
6.3	100	7.3*4.3*1.9	M	20	1900	37.8	3500	SA10JM101A19R20XXX
6.3	120	7.3*4.3*1.9	M	10	3000	45.4	3500	SA10JM121A19R10XXX
6.3	150	7.3*4.3*1.9	M	10	3000	56.7	3500	SA10JM151A19R10XXX
6.3	150	7.3*4.3*1.9	M	15	3000	56.7	3500	SA10JM151A19R15XXX

◆ STANDARD RATINGS

Rated Voltage VDC	Cap. (uF)120HZ, 20℃	Size (LxWxT mm)	Cap Tolerance(%)	ESR (mΩ),20℃ 100kHz (max.)	Rated ripple current(mArms) 100kHz, 20℃ 105℃	Leakage Current (uA max) 20℃	Min. Packaging Quantity (PCS)	Part Number
6.3	220	7.3*4.3*1.9	M	10	3000	83.2	3500	SA10JM221A19R10XXX
6.3	220	7.3*4.3*1.9	M	15	3000	83.2	3500	SA10JM221A19R15XXX
7.5	150	7.3*4.3*1.9	M	10	3000	67.5	3500	SA10AM151A19R10XXX
7.5	200	7.3*4.3*1.9	M	12	3000	90.0	3500	SA10AM201A19R12XXX
10	10	7.3*4.3*1.9	M	55	1000	6.0	3500	SA11AM100A19R55XXX
10	22	7.3*4.3*1.9	M	120	1600	13.2	3500	SA11AM220A19RA2XXX
10	33	7.3*4.3*1.9	M	25	1800	19.8	3500	SA11AM330A19R25XXX
10	39	7.3*4.3*1.9	M	25	1800	23.4	3500	SA11AM390A19R25XXX
10	47	7.3*4.3*1.9	M	40	1800	28.2	3500	SA11AM470A19R40XXX
10	100	7.3*4.3*1.9	M	15	2500	60.0	3500	SA11AM101A19R15XXX
12.5	10	7.3*4.3*1.9	M	55	1000	12.5	3500	SA11TM100A19R55XXX
12.5	15	7.3*4.3*1.9	M	45	1000	18.8	3500	SA11TM150A19R45XXX
12.5	22	7.3*4.3*1.9	M	30	1600	27.5	3500	SA11TM220A19R30XXX
12.5	33	7.3*4.3*1.9	M	25	1800	41.3	3500	SA11TM330A19R25XXX
12.5	47	7.3*4.3*1.9	M	20	2000	58.8	3500	SA11TM470A19R20XXX
12.5	56	7.3*4.3*1.9	M	15	2000	70.0	3500	SA11TM560A19R15XXX
12.5	100	7.3*4.3*1.9	M	12	2500	125.0	3500	SA11TM101A19R12XXX
16	6.8	7.3*4.3*1.9	M	70	1000	10.9	3500	SA11CM6R8A19R70XXX
16	10	7.3*4.3*1.9	M	60	1000	16.0	3500	SA11CM100A19R60XXX
16	15	7.3*4.3*1.9	M	40	1000	24.0	3500	SA11CM150A19R40XXX
16	47	7.3*4.3*1.9	M	55	1400	75.2	3500	SA11CM470A19R55XXX
16	68	7.3*4.3*1.9	M	30	1600	108.8	3500	SA11CM680A19R30XXX
16	100	7.3*4.3*1.9	M	25	2500	160.0	3500	SA11CM101A19R25XXX
16	100	7.3*4.3*1.9	M	40	1800	160.0	3500	SA11CM101A19R50XXX
25	2.2	7.3*4.3*1.9	M	350	800	5.5	3500	SA11EM2R2A19RC0XXX
25	4.7	7.3*4.3*1.9	M	120	1000	11.8	3500	SA11EM4R7A19RA2XXX
25	10	7.3*4.3*1.9	M	35	1000	25.0	3500	SA11EM100A19R35XXX
25	10	7.3*4.3*1.9	M	60	1400	25.0	3500	SA11EM100A19R60XXX
25	15	7.3*4.3*1.9	M	60	1400	37.5	3500	SA11EM150A19R60XXX
25	22	7.3*4.3*1.9	M	60	1400	55.0	3500	SA11EM220A19R60XXX
25	33	7.3*4.3*1.9	M	60	1400	82.5	3500	SA11EM330A19R60XXX
25	33	7.3*4.3*1.9	M	80	1400	82.5	3500	SA11EM330A19R80XXX

A2 Series

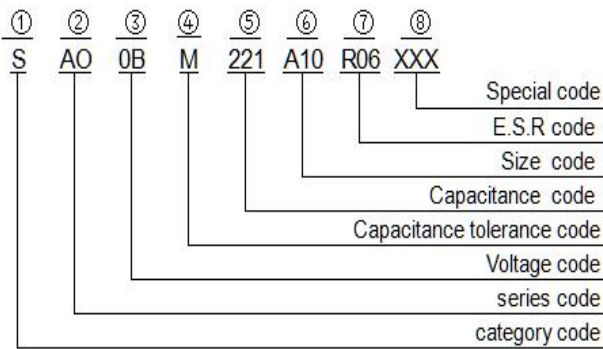


- Endurance :2000 hours at 105 °C
- Low ESR
- Recommended Applications: System Board ,Display Card, Small Changer
- RoHS Compliance and lead-free

Specifications

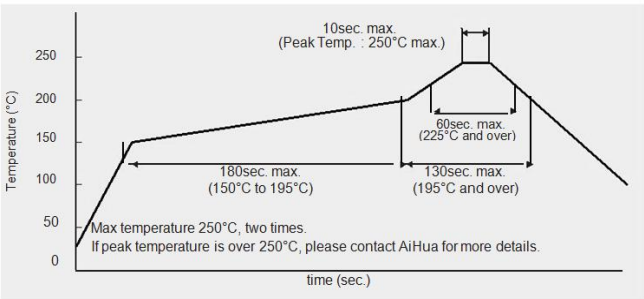
Items		Performance Characteristics
Operating Temperature Range		- 55℃ ~ 105℃
Rated Working Voltage Range		2V ~25V.DC
Nominal Capacitance Range		6.8μF~560μF
Capacitance Tolerance		±20%(M) (at 20℃,120Hz)
DC Leakage Current		I ≤0.06CV (μA) 2 minutes (2V ~ 10V.DC) I ≤0.1CV (μA) 2 minutes (12.5V ~ 25V.DC)
tan δ		≤0.06~0.1 (120HZ,20℃)
Surge Voltage		Rated voltage x 1.25 (2V.DC to 16V.DC) , x1.15(20V.DC to 25V.DC) (15℃ ~ 35℃)
Endurance (+105℃, 2,000 hours, rated voltage applied)	ΔC/C	Within ±20% of the initial measured value
	tan δ	≤150% of the initial specified value
	LC	≤The initial specified value
Moisture Resistance After storing for 500 hours at 60℃, 90%RH	ΔC/C	+70, -20% (2V~2.5V.DC) +60, -20% (4V.DC) +50, -20% (6.3V~7.5V.DC) +40, -20%(8V~25V)
	tan δ	≤200% of the initial specified value
	LC	≤The initial specified value

Part Numbering

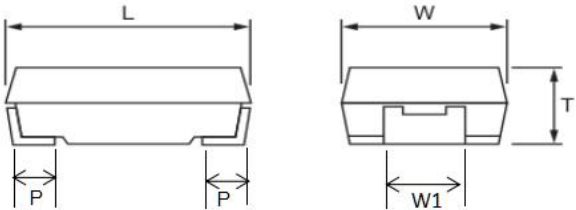
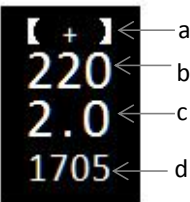


Reflow Soldering Conditions

Recommended Reflow Profile



Mark & Dimension



- a): Polarity code
- b): Capacitance code
- c): Rated voltage code
- d): Date code

Series Code	L(±0.3)	W(±0.2)	T(±0.2)	P(±0.2)	W1 (±0.2)
A2	7.3	4.3	2.8	1.3	2.4

◆ STANDARD RATINGS

Rated Voltage VDC	Cap. (uF)120H Z, 20℃	Size (LxWxT mm)	Cap Toleran ce(%)	ESR (mΩ),20℃ 100kHz (max.)	Rated ripple current(mArms) 100kHz, 20℃-105℃	Leakage Current (uA max) 20℃	Min. Packaging Quantity (PCS)	Part Number
2	100	7.3*4.3*2.8	M	16	2000	12.0	3000	SA20BM101A28R16XXX
2	150	7.3*4.3*2.8	M	9	3000	18.0	3000	SA20BM151A28R09XXX
2	220	7.3*4.3*2.8	M	9	3000	26.4	3000	SA20BM221A28R09XXX
2	270	7.3*4.3*2.8	M	9	3500	32.4	3000	SA20BM271A28R09XXX
2	330	7.3*4.3*2.8	M	9	3500	39.6	3000	SA20BM331A28R09XXX
2	330	7.3*4.3*2.8	L	9	3500	132.0	3000	SA20BL331A28R09XXX
2	470	7.3*4.3*2.8	M	9	3500	56.4	3000	SA20BM471A28R09XXX
2	470	7.3*4.3*2.8	L	9	3500	188.0	3000	SA20BL471A28R09XXX
2.5	100	7.3*4.3*2.8	M	16	2000	15.0	3000	SA20EM101A28R16XXX
2.5	150	7.3*4.3*2.8	M	9	3000	22.5	3000	SA20EM151A28R09XXX
2.5	180	7.3*4.3*2.8	M	12	2500	27.0	3000	SA20EM181A28R12XXX
2.5	220	7.3*4.3*2.8	M	10	3000	33.0	3000	SA20EM221A28R10XXX
2.5	270	7.3*4.3*2.8	M	9	3500	40.5	3000	SA20EM271A28R09XXX
2.5	330	7.3*4.3*2.8	M	7	3500	49.5	3000	SA20EM331A28R07XXX
2.5	330	7.3*4.3*2.8	M	9	3500	49.5	3000	SA20EM331A28R09XXX
2.5	470	7.3*4.3*2.8	M	4.5	3500	70.5	3000	SA20EM471A28R04XXX
2.5	470	7.3*4.3*2.8	M	6	3500	70.5	3000	SA20EM471A28R06XXX
2.5	470	7.3*4.3*2.8	M	9	3500	70.5	3000	SA20EM471A28R09XXX
4	68	7.3*4.3*2.8	M	20	1900	16.3	3000	SA20GM680A28R20XXX
4	82	7.3*4.3*2.8	M	16	2100	19.7	3000	SA20GM820A28R16XXX
4	150	7.3*4.3*2.8	M	18	2100	36.0	3000	SA20GM151A28R18XXX
6.3	10	7.3*4.3*2.8	M	55	1000	3.8	3000	SA20JM100A28R55XXX
6.3	22	7.3*4.3*2.8	M	45	1000	8.3	3000	SA20JM220A28R45XXX
6.3	33	7.3*4.3*2.8	M	25	1800	12.5	3000	SA20JM330A28R25XXX
6.3	47	7.3*4.3*2.8	M	25	1800	17.8	3000	SA20JM470A28R25XXX
6.3	68	7.3*4.3*2.8	M	15	2000	25.7	3000	SA20JM680A28R15XXX
6.3	100	7.3*4.3*2.8	M	15	2000	37.8	3000	SA20JM101A28R15XXX
6.3	150	7.3*4.3*2.8	M	10	3000	56.7	3000	SA20JM151A28R10XXX
6.3	150	7.3*4.3*2.8	M	15	3000	56.7	3000	SA20JM151A28R15XXX
6.3	220	7.3*4.3*2.8	M	10	3000	83.2	3000	SA20JM221A28R10XXX
6.3	220	7.3*4.3*2.8	M	15	3000	83.2	3000	SA20JM221A28R15XXX
7.5	150	7.3*4.3*2.8	M	10	3000	67.5	3000	SA20AM151A28R10XXX
7.5	200	7.3*4.3*2.8	M	12	3000	90.0	3000	SA20AM201A28R12XXX
10	10	7.3*4.3*2.8	M	55	1000	6.0	3000	SA21AM100A28R55XXX
10	22	7.3*4.3*2.8	M	28	1600	13.2	3000	SA21AM220A28R28XXX
10	33	7.3*4.3*2.8	M	25	1800	19.8	3000	SA21AM330A28R25XXX
10	68	7.3*4.3*2.8	M	15	2000	40.8	3000	SA21AM680A28R15XXX
10	100	7.3*4.3*2.8	M	15	2500	60.0	3000	SA21AM101A28R15XXX

◆ STANDARD RATINGS

Rated Voltage VDC	Cap. (uF)120HZ, 20℃	Size (LxWxT mm)	Cap Tolerance(%)	ESR (mΩ),20℃ 100kHz (max.)	Rated ripple current(mArms) 100kHz, 20℃-105℃	Leakage Current (uA max) 20℃	Min. Packaging Quantity (PCS)	Part Number
12.5	10	7.3*4.3*2.8	M	55	1000	12.5	3000	SA21TM100A28R55XXX
12.5	15	7.3*4.3*2.8	M	45	1000	18.8	3000	SA21TM150A28R45XXX
12.5	22	7.3*4.3*2.8	M	30	1600	27.5	3000	SA21TM220A28R30XXX
12.5	33	7.3*4.3*2.8	M	25	1800	41.3	3000	SA21TM330A28R25XXX
12.5	47	7.3*4.3*2.8	M	20	2000	58.8	3000	SA21TM470A28R20XXX
12.5	56	7.3*4.3*2.8	M	15	2000	70.0	3000	SA21TM560A28R15XXX
12.5	100	7.3*4.3*2.8	M	12	2500	125.0	3000	SA21TM101A28R12XXX
16	6.8	7.3*4.3*2.8	M	70	1000	10.9	3000	SA21CM6R8A28R70XXX
16	10	7.3*4.3*2.8	M	60	1000	16.0	3000	SA21CM100A28R60XXX
16	15	7.3*4.3*2.8	M	40	1000	24.0	3000	SA21CM150A28R40XXX
16	22	7.3*4.3*2.8	M	30	1600	35.2	3000	SA21CM220A28R30XXX
16	22	7.3*4.3*2.8	M	60	1400	35.2	3000	SA21CM220A28R60XXX
16	33	7.3*4.3*2.8	M	30	1600	52.8	3000	SA21CM330A28R30XXX
16	47	7.3*4.3*2.8	M	30	1600	75.2	3000	SA21CM470A28R30XXX
16	68	7.3*4.3*2.8	M	30	1600	108.8	3000	SA21CM680A28R30XXX
16	100	7.3*4.3*2.8	M	25	1800	160.0	3000	SA21CM101A28R25XXX
25	10	7.3*4.3*2.8	M	45	1000	25.0	3000	SA21EM100A28R45XXX
25	33	7.3*4.3*2.8	M	60	1400	82.5	3000	SA21EM330A28R60XXX