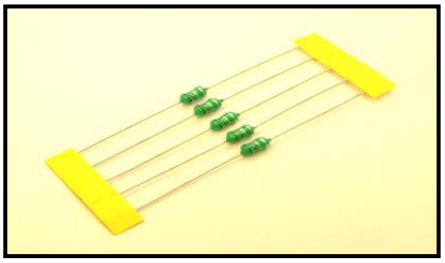
Fixed Inductors / AL TYPE

.Features:

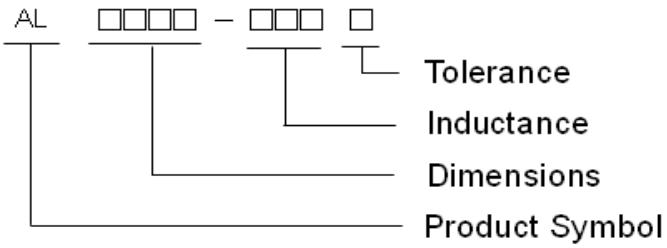
1.Coating epoxy resin that ensures the humidity resistance to be long life.
2.Contribute to be high Q and self-resonant frequencies



.Applications:

1.Electronics products.
2.Communication equipment.
3.Computer Devices.
4.TV, VCR

.Product Identification :



.Rating

1. Operating temperature: -20°C ~+105°C

.Shape and Dimension

Figure A

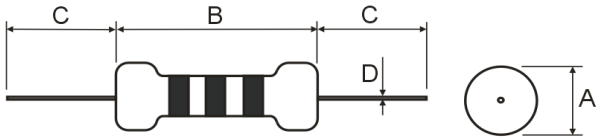
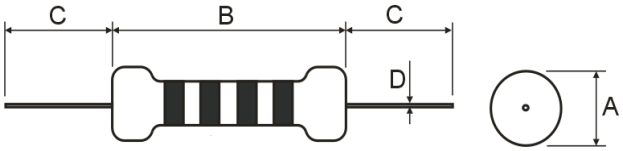
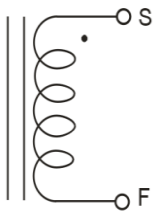


Figure B



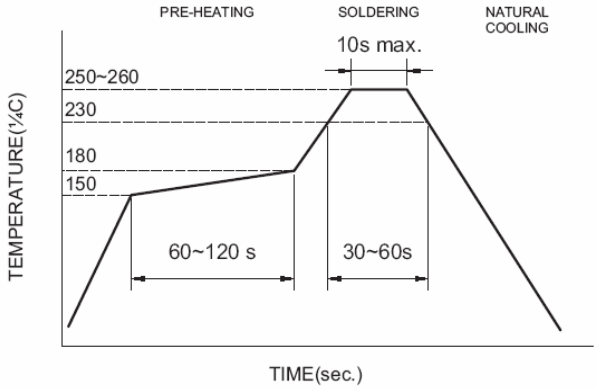
.Schematic



Dimensions in mm

TYPE	A(max)	B(max)	C(max)	D(max)	Figure
AL0307	3.00	8.00	33	0.6	B
AL0410	4.00	10.00	31	0.7	B
AL0510	5.00	12.00	31	0.7	B

.Recommended Reflow



Fixed Inductors / AL TYPE

Electrical Characteristics（AL0307 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	SRF	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(MHZ)Min.	(Ω)Max.	(mA)Max.	(±%)
AL0307ST-R10K	0.1	25.2	40	470	0.06	1400	10
AL0307ST-R12K	0.12	25.2	40	450	0.06	1350	10
AL0307ST-R15K	0.15	25.2	40	420	0.07	1270	10
AL0307ST-R18K	0.18	25.2	40	400	0.07	1200	10
AL0307ST-R22K	0.22	25.2	40	380	0.08	1150	10
AL0307ST-R27K	0.27	25.2	40	360	0.08	1110	10
AL0307ST-R33K	0.33	25.2	40	350	0.09	1110	10
AL0307ST-R39K	0.39	25.2	40	320	0.10	1000	10
AL0307ST-R47K	0.47	25.2	40	300	0.11	1000	10
AL0307ST-R56K	0.56	25.2	40	280	0.12	950	10
AL0307ST-R68K	0.68	25.2	40	250	0.13	900	10
AL0307ST-R70K	0.7	25.2	40	230	0.14	900	10
AL0307ST-R82K	0.82	25.2	40	200	0.14	900	10
AL0307ST-R90K	0.9	25.2	40	190	0.15	850	10
AL0307ST-1R0K	1	25.2	40	180	0.15	815	10
AL0307ST-1R1K	1.1	7.96	40	170	0.17	780	10
AL0307ST-1R2K	1.2	7.96	40	165	0.18	740	10
AL0307ST-1R5K	1.5	7.96	40	150	0.20	700	10
AL0307ST-1R6K	1.6	7.96	40	130	0.22	680	10
AL0307ST-1R8K	1.8	7.96	50	125	0.23	655	10
AL0307ST-2R0K	2	7.96	50	115	0.24	640	10
AL0307ST-2R2K	2.2	7.96	50	110	0.25	630	10
AL0307ST-2R3K	2.3	7.96	50	105	0.26	620	10
AL0307ST-2R4K	2.4	7.96	50	100	0.27	610	10
AL0307ST-2R7K	2.7	7.96	50	95	0.28	595	10
AL0307ST-3R0K	3	7.96	50	90	0.29	580	10
AL0307ST-3R2K	3.2	7.96	50	85	0.29	570	10
AL0307ST-3R3K	3.3	7.96	50	70	0.30	575	10
AL0307ST-3R6K	3.6	7.96	50	65	0.31	560	10
AL0307ST-3R9K	3.9	7.96	50	65	0.32	555	10
AL0307ST-4R2K	4.2	7.96	50	60	0.33	540	10
AL0307ST-4R7K	4.7	7.96	50	50	0.35	530	10
AL0307ST-5R6K	5.6	7.96	50	40	0.40	500	10
AL0307ST-6R0K	6	7.96	50	35	0.43	490	10
AL0307ST-6R4K	6.4	7.96	50	33	0.44	480	10
AL0307ST-6R8K	6.8	7.96	50	30	0.45	470	10
AL0307ST-8R2K	8.2	7.96	50	28	0.56	425	10
AL0307ST-100K	10	7.96	50	22	0.75	370	10
AL0307ST-120K	12	2.52	50	20	0.80	350	10

Fixed Inductors / AL TYPE

Electrical Characteristics（AL0307 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	SRF	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(MHZ)Min.	(Ω)Max.	(mA)Max.	(±%)
AL0307ST-150K	15	2.52	50	16	0.93	335	10
AL0307ST-180K	18	2.52	50	15	1.00	315	10
AL0307ST-200K	20	2.52	50	14	1.10	300	10
AL0307ST-220K	22	2.52	50	12	1.50	280	10
AL0307ST-270K	27	2.52	50	11	1.80	270	10
AL0307ST-330K	33	2.52	50	10	2.10	255	10
AL0307ST-360K	36	2.52	50	9.7	2.20	250	10
AL0307ST-390K	39	2.52	50	9.5	2.30	240	10
AL0307ST-470K	47	2.52	50	8.5	2.60	205	10
AL0307ST-560K	56	2.52	50	7.5	2.90	195	10
AL0307ST-680K	68	2.52	50	6.5	3.30	185	10
AL0307ST-820K	82	2.52	50	6	3.80	175	10
AL0307ST-101K	100	2.52	50	5.5	4.20	165	10
AL0307ST-121K	120	0.796	60	5.4	4.70	160	10
AL0307ST-151K	150	0.796	60	4.7	5.40	150	10
AL0307ST-161K	160	0.796	60	4.5	5.70	145	10
AL0307ST-181K	180	0.796	60	4.3	6.00	140	10
AL0307ST-221K	220	0.796	60	4	7.00	130	10
AL0307ST-271K	270	0.796	60	3.7	7.70	120	10
AL0307ST-331K	330	0.796	60	3.4	11.10	100	10
AL0307ST-391K	390	0.796	60	2.8	12.60	95	10
AL0307ST-471K	470	0.796	60	2.5	14.00	90	10
AL0307ST-561K	560	0.796	60	2.3	15.50	85	10
AL0307ST-621K	620	0.796	60	2.1	23.00	80	10
AL0307ST-681K	680	0.796	60	2	25.30	75	10
AL0307ST-821K	820	0.796	60	1.5	27.50	65	10
AL0307ST-102K	1000	0.796	50	1.2	31.40	60	10

Electrical Characteristics（AL0410 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	SRF	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(MHZ)Min.	(Ω)Max.	(mA)Max.	(±%)
AL0410ST-R10K	0.1	25.2	25	470	0.06	1700	10
AL0410ST-R12K	0.12	25.2	25	450	0.06	1640	10
AL0410ST-R15K	0.15	25.2	25	420	0.07	1560	10
AL0410ST-R18K	0.18	25.2	25	400	0.07	1480	10
AL0410ST-R22K	0.22	25.2	25	380	0.08	1400	10
AL0410ST-R27K	0.27	25.2	25	340	0.09	1320	10
AL0410ST-R33K	0.33	25.2	25	300	0.10	1280	10
AL0410ST-R39K	0.39	25.2	25	280	0.12	1200	10
AL0410ST-R47K	0.47	25.2	25	250	0.13	1150	10

Fixed Inductors / AL TYPE

Electrical Characteristics（AL0410 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	SRF	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(MHZ)Min.	(Ω)Max.	(mA)Max.	(±%)
AL0410ST-R56K	0.56	25.2	25	230	0.14	1100	10
AL0410ST-R68K	0.68	25.2	25	210	0.15	1030	10
AL0410ST-R70K	0.7	25.2	25	190	0.16	1000	10
AL0410ST-R82K	0.82	25.2	45	172	0.16	980	10
AL0410ST-R85K	0.85	25.2	45	160	0.17	950	10
AL0410ST-1R0K	1	25.2	45	157	0.17	920	10
AL0410ST-1R2K	1.2	7.96	50	144	0.18	880	10
AL0410ST-1R5K	1.5	7.96	50	131	0.20	830	10
AL0410ST-1R6K	1.6	7.96	50	125	0.21	810	10
AL0410ST-1R8K	1.8	7.95	55	121	0.22	790	10
AL0410ST-1R9K	1.9	7.96	55	120	0.22	780	10
AL0410ST-2R0K	2	7.96	55	115	0.22	770	10
AL0410ST-2R2K	2.2	7.96	55	110	0.24	750	10
AL0410ST-2R4K	2.4	7.96	55	105	0.25	730	10
AL0410ST-2R7K	2.7	7.96	60	100	0.25	720	10
AL0410ST-3R0K	3	7.96	60	97	0.27	690	10
AL0410ST-3R3K	3.3	7.96	65	94	0.30	670	10
AL0410ST-3R9K	3.9	7.96	65	86	0.35	640	10
AL0410ST-4R2K	4.2	7.96	65	83	0.38	620	10
AL0410ST-4R7K	4.7	7.96	70	80	0.40	620	10
AL0410ST-5R6K	5.6	7.96	70	74	0.45	590	10
AL0410ST-6R4K	6.4	7.96	70	70	0.48	570	10
AL0410ST-6R8K	6.8	7.96	75	68	0.50	550	10
AL0410ST-8R2K	8.2	7.96	80	53	0.60	530	10
AL0410ST-100K	10	7.96	80	45	0.65	500	10
AL0410ST-120K	12	2.52	75	34	0.70	480	10
AL0410ST-150K	15	2.52	70	20	0.75	460	10
AL0410ST-180K	18	2.52	65	14	0.80	430	10
AL0410ST-220K	22	2.52	50	9.9	0.90	410	10
AL0410ST-270K	27	2.52	55	7.6	1.00	390	10
AL0410ST-330K	33	2.52	55	6.3	1.10	370	10
AL0410ST-390K	39	2.52	50	6.3	1.20	350	10
AL0410ST-470K	47	2.52	45	6.3	1.30	340	10
AL0410ST-560K	56	2.52	40	6.2	1.50	320	10
AL0410ST-680K	68	2.52	40	5.7	1.80	305	10
AL0410ST-820K	82	2.52	35	5.3	2.00	290	10
AL0410ST-101K	100	2.52	30	4.8	2.50	275	10
AL0410ST-121K	120	0.796	70	3.8	3.00	185	10
AL0410ST-151K	150	0.796	70	3.5	4.20	175	10

Fixed Inductors / AL TYPE

Electrical Characteristics（AL0410 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	SRF	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(MHZ)Min.	(Ω)Max.	(mA)Max.	(±%)
AL0410ST-181K	180	0.796	70	3.3	4.60	165	10
AL0410ST-201K	200	0.796	70	3.1	4.90	160	10
AL0410ST-221K	220	0.796	70	3	5.10	155	10
AL0410ST-271K	270	0.796	65	2.8	6.00	145	10
AL0410ST-331K	330	0.796	65	2.6	6.50	137	10
AL0410ST-391K	390	0.796	65	2.4	7.50	133	10
AL0410ST-471K	470	0.796	60	2.2	8.50	126	10
AL0410ST-561K	560	0.796	60	2.1	9.50	120	10
AL0410ST-621K	620	0.796	55	2	11.00	117	10
AL0410ST-681K	680	0.796	55	1.9	12.00	113	10
AL0410ST-821K	820	0.796	55	1.8	14.00	105	10
AL0410ST-102K	1000	0.796	55	1.4	20.00	85	10
AL0410ST-122K	1200	0.252	55	1.2	22.00	70	10
AL0410ST-152K	1500	0.252	55	1	25.00	60	10
AL0410ST-202K	2000	0.252	55	0.8	30.00	50	10
AL0410ST-222K	2200	0.252	55	0.7	35.00	45	10
AL0410ST-272K	2700	0.252	55	0.6	36.00	40	10
AL0410ST-332K	3300	0.252	55	0.5	40.00	35	10

Electrical Characteristics（AL0510 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(Ω)Max.	(mA)Max.	(±%)
AL0510ST-100K	10	0.001	10	0.10	630	10
AL0510ST-120K	12	0.001	25	0.15	610	10
AL0510ST-220K	22	0.001	30	0.20	540	10
AL0510ST-300K	30	0.001	25	0.30	490	10
AL0510ST-360K	36	0.001	25	0.40	460	10
AL0510ST-430K	43	0.001	25	0.50	450	10
AL0510ST-101K	100	0.001	45	0.90	280	10
AL0510ST-221K	220	0.001	30	1.80	180	10
AL0510ST-102K	1000	0.001	70	6.00	90	10
AL0510ST-112K	1100	0.001	70	8.00	82	10
AL0510ST-122K	1200	0.001	75	9.00	75	10
AL0510ST-152K	1500	0.001	80	10.00	69	10
AL0510ST-182K	1800	0.001	80	11.00	60	10
AL0510ST-222K	2200	0.001	80	14.00	58	10
AL0510ST-272K	2700	0.001	75	18.00	52	10
AL0510ST-302K	3000	0.001	75	20.00	50	10
AL0510ST-312K	3100	0.001	75	21.00	49	10
AL0510ST-332K	3300	0.001	70	22.00	48	10

Fixed Inductors / AL TYPE

Electrical Characteristics（AL0510 TYPE）

Part No.	Inductance	L/Q Test Freq.	Q	RDC	IDC	Tolerance
	(μH)	(MHZ)	Min.	(Ω)Max.	(mA)Max.	(±%)
AL0510ST-392K	3900	0.001	60	26.00	45	10
AL0510ST-472K	4700	0.001	60	30.00	40	10
AL0510ST-562K	5600	0.001	50	34.00	37	10
AL0510ST-682K	6800	0.001	50	45.00	34	10
AL0510ST-822K	8200	0.001	50	60.00	31	10
AL0510ST-103K	10000	0.001	45	70.00	28	10
AL0510ST-123K	12000	0.001	45	82.00	24	10
AL0510ST-153K	15000	0.001	40	89.00	22	10
AL0510ST-163K	16000	0.001	40	100.00	18	10
AL0510ST-183K	18000	0.001	40	140.00	14	10
AL0510ST-203K	20000	0.001	40	155.00	13	10
AL0510ST-223K	22000	0.001	40	170.00	12	10
AL0510ST-253K	25000	0.001	40	185.00	11	10
AL0510ST-273K	27000	0.001	35	210.00	9.5	10
AL0510ST-303K	30000	0.001	40	240.00	8.5	10
AL0510ST-333K	33000	0.001	40	250.00	8	10
AL0510ST-393K	39000	0.001	40	300.00	7.5	10
AL0510ST-403K	40000	0.001	40	350.00	7	10
AL0510ST-473K	47000	0.001	35	380.00	6.5	10
AL0510ST-683K	68000	0.001	35	400.00	6	10

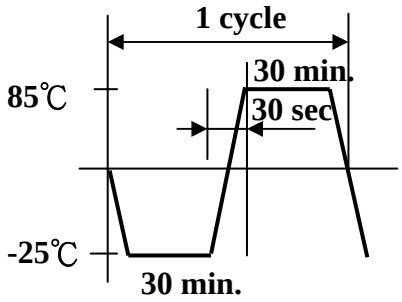
NOTE:
The Nominal Inductance Is Marked By a Color Code As Listed In Table Below

Color	Nomial Inductance(uH)			
	First Figure	Second Figure	Magnification	Tolerance
Black	0		1	±20%
Brown	1		10	-
Red	2		100	-
Orange	3		1000	-
Yellow	4		-	-
Green	5		-	-
Blue	6		-	-
Purple	7		-	-
Grey	8		-	-
White	9		-	-
Gold	-		0.1	±5%
Silver	-		0.01	±10%

Fixed Inductors / AL TYPE

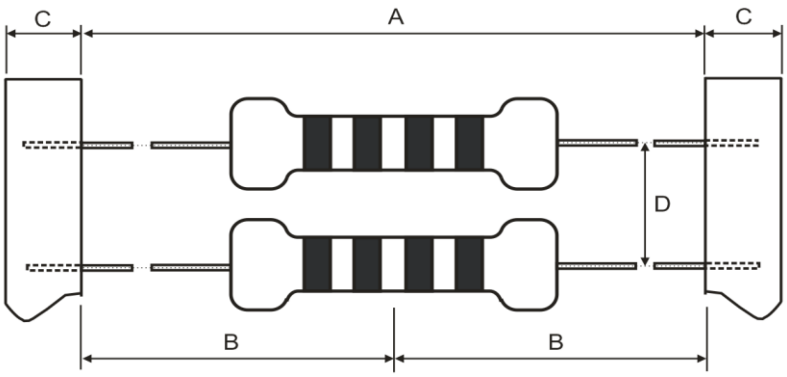
. Reliability and Test Conditions(可靠性測試條件)

1-1.Environmental Performance

Item	Specification	Test Method
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot(96.5 Sn/3.5 Ag solder) at 255°C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260° C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
Vibration	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x,y and z directions for 2 house for a total of 6 hours. Frequency : 10~50 Hz Amplitude : 1.5mm
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 85±2℃ for 500±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or open winding.	Inductors shall be subjected to temperature 85±2℃ and 90 to 95%RH. for ten 24-hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion(push test)	Inductors shall be subjected to 0.9Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.
Low temperature storage	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature -25±2℃ for 48±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 10 cycles to the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.

Fixed Inductors / AL TYPE

.Packing Specifications



TYPE	Packaging Quantity	Tape Dimension(mm)			
	Pcs / BOX	A	B	C	D
AL0307	3000	52	26	6 ± 1	5 ± 0.5
AL0410	2000	52	26	6 ± 1	5 ± 0.5
AL0510	1000	52	26	6 ± 1	5 ± 0.5