

Inductors

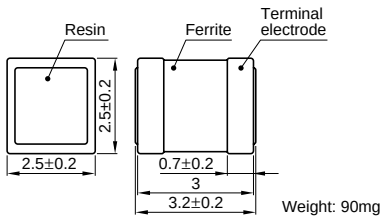
For Power Line SMD

ACL Series ACL3225 Type

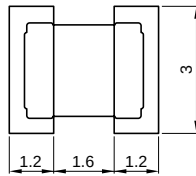
FEATURES

- The ACL series wire-wound chip inductors are magnetically shielded, permitting their use in high-density mounting configurations.
- High inductance values are achieved without size increase.
- Low DC resistance ensures high Q.
- The temperature coefficient is low despite the magnetic shielding. Accordingly, immunity to ambient temperature change is high.

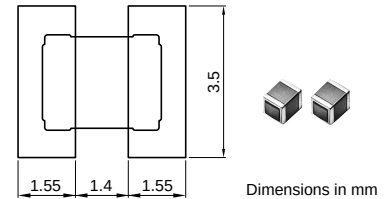
SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERNS



REFLOW SOLDERING



FLOW SOLDERING



ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current*1 (mA)max.	Part No.
0.01	±20%	10	100	2000	0.19	725	ACL3225S-10nM-X*2
0.012	±20%	10	100	1750	0.2	705	ACL3225S-12nM-X
0.015	±20%	10	100	1550	0.23	655	ACL3225S-15nM-X
0.018	±20%	15	100	1450	0.25	630	ACL3225S-18nM-X
0.022	±20%	15	100	1300	0.28	595	ACL3225S-22nM-X
0.027	±20%	15	100	1150	0.3	575	ACL3225S-27nM-X
0.033	±20%	15	100	1040	0.34	540	ACL3225S-33nM-X
0.039	±20%	20	100	950	0.37	515	ACL3225S-39nM-X
0.047	±20%	20	100	850	0.41	490	ACL3225S-47nM-X
0.056	±20%	20	100	770	0.47	460	ACL3225S-56nM-X
0.068	±20%	20	100	740	0.5	445	ACL3225S-68nM-X
0.082	±20%	20	100	600	0.55	425	ACL3225S-82nM-X
0.1	±20%	30	100	510	0.64	395	ACL3225S-R10M-X
0.12	±10%	35	25.2	580	0.24	645	ACL3225S-R12K-X
0.15	±10%	35	25.2	470	0.26	620	ACL3225S-R15K-X
0.18	±10%	35	25.2	400	0.29	585	ACL3225S-R18K-X
0.22	±10%	40	25.2	340	0.33	550	ACL3225S-R22K-X
0.27	±10%	40	25.2	290	0.37	515	ACL3225S-R27K-X
0.33	±10%	40	25.2	250	0.39	505	ACL3225S-R33K-X
0.39	±10%	40	25.2	220	0.42	485	ACL3225S-R39K-X
0.47	±10%	50	25.2	200	0.46	465	ACL3225S-R47K-X
0.56	±10%	50	25.2	180	0.51	440	ACL3225S-R56K-X
0.68	±10%	50	25.2	155	0.55	425	ACL3225S-R68K-X
0.82	±10%	50	25.2	140	0.6	405	ACL3225S-R82K-X
1	±10%	50	25.2	130	0.68	380	ACL3225S-1R0K-X
1.2	±10%	60	7.96	150	0.52	435	ACL3225S-1R2K-X
1.5	±10%	60	7.96	130	0.59	360	ACL3225S-1R5K-X
1.8	±10%	60	7.96	120	0.64	330	ACL3225S-1R8K-X
2.2	±10%	60	7.96	105	0.71	310	ACL3225S-2R2K-X
2.7	±10%	60	7.96	90	0.77	300	ACL3225S-2R7K-X
3.3	±10%	60	7.96	80	0.85	240	ACL3225S-3R3K-X
3.9	±10%	60	7.96	70	0.94	230	ACL3225S-3R9K-X
4.7	±10%	60	7.96	60	1	220	ACL3225S-4R7K-X

*1 The rated current is for the smaller of the inductance change due to either temperature increase or DC current superposition.

*2 X: packaging style (T: Taping[ø180mm reel], TL: Taping[ø330mm reel], B: Bulk)

Inductors

For Power Line
SMD

ACL Series ACL3225 Type

ELECTRICAL CHARACTERISTICS

Inductance (μ H)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current* ¹ (mA)max.	Part No.
5.6	±10%	60	7.96	52	1.1	180	ACL3225S-5R6K-X* ²
6.8	±10%	60	7.96	44	1.25	160	ACL3225S-6R8K-X
8.2	±10%	60	7.96	37	1.35	130	ACL3225S-8R2K-X
10	±10%	60	7.96	31	1.5	120	ACL3225S-100K-X
12	±10%	50	2.52	49	1.5	120	ACL3225S-120K-X
15	±10%	50	2.52	30	1.75	120	ACL3225S-150K-X
18	±10%	50	2.52	22	1.95	110	ACL3225S-180K-X
22	±10%	50	2.52	17	2.15	100	ACL3225S-220K-X
27	±10%	50	2.52	14.5	2.35	85	ACL3225S-270K-X
33	±10%	50	2.52	12.5	2.65	85	ACL3225S-330K-X
39	±10%	50	2.52	11.5	2.9	70	ACL3225S-390K-X
47	±10%	50	2.52	10.5	3.15	65	ACL3225S-470K-X
56	±10%	50	2.52	10	3.4	45	ACL3225S-560K-X
68	±10%	50	2.52	9	3.8	55	ACL3225S-680K-X
82	±10%	50	2.52	8.5	4.3	40	ACL3225S-820K-X
100	±10%	50	2.52	7.8	4.7	40	ACL3225S-101K-X
120	±20%	25	0.796	7.6	3.05	14	ACL3225S-121M-X
150	±20%	25	0.796	6.8	3.5	13	ACL3225S-151M-X
180	±20%	25	0.796	6.2	3.95	10	ACL3225S-181M-X
220	±20%	25	0.796	5.6	4.2	10	ACL3225S-221M-X
270	±20%	25	0.796	5.1	4.8	8.5	ACL3225S-271M-X
330	±20%	25	0.796	4.6	5.55	8.5	ACL3225S-331M-X
390	±20%	25	0.796	4.2	6	8	ACL3225S-391M-X
470	±20%	25	0.796	3.7	6.7	8	ACL3225S-471M-X
560	±20%	25	0.796	3.4	7.5	7.5	ACL3225S-561M-X
680	±20%	25	0.796	3.1	8.35	6	ACL3225S-681M-X
820	±20%	25	0.796	2.7	9.55	5.5	ACL3225S-821M-X
1000	±20%	25	0.796	2.4	11	5	ACL3225S-102M-X

*¹ The rated current is for the smaller of the inductance change due to either temperature increase or DC current superposition.

*² X:packaging style (T:Taping[ϕ 180mm reel], TL:Taping[ϕ 330mm reel], B: Bulk)

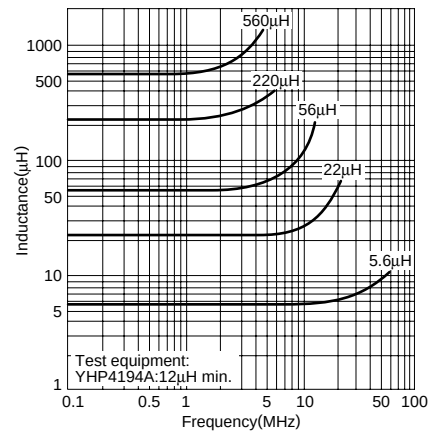
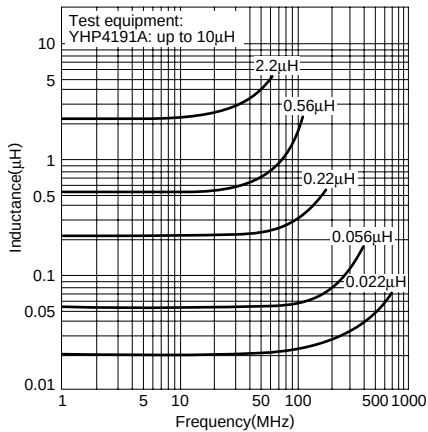
Inductors

For Power Line
SMD

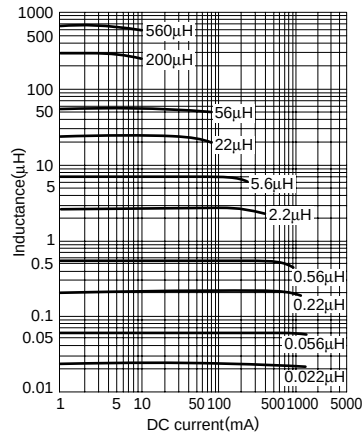
ACL Series ACL3225 Type

TYPICAL ELECTRICAL CHARACTERISTICS

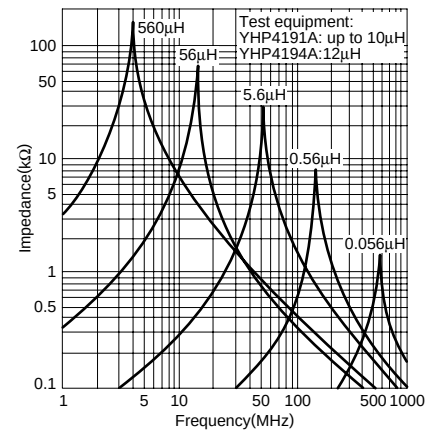
INDUCTANCE vs. FREQUENCY CHARACTERISTICS



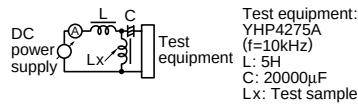
INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



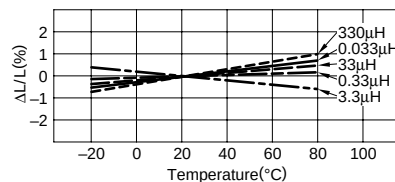
IMPEDANCE vs. FREQUENCY CHARACTERISTICS



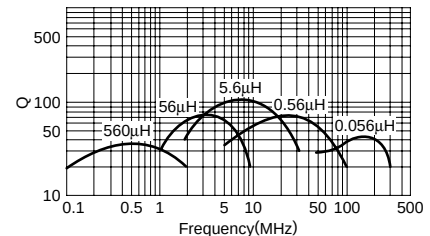
MEASURING CIRCUIT



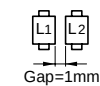
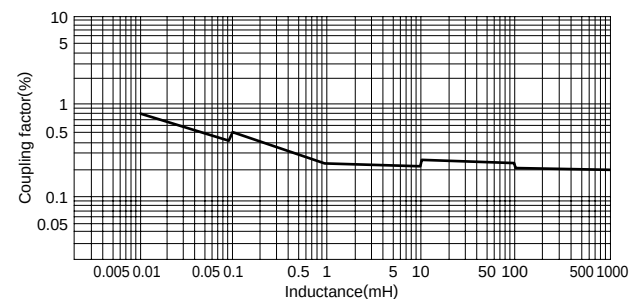
INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



Q vs. FREQUENCY CHARACTERISTICS



COUPLING FACTORS



Measuring conditions MIL-C-15305E
#4, 8, 8, 4
Test equipment YHP 4275A
Test frequency L ≤ 1μH at 100kHz
1μH < L ≤ 100μH at 10kHz
100μH < L at 1kHz
Coupling factor (%) = $M \div (\frac{L_1 \cdot L_2}{4}) \times 100$
 $M = (L_{t1} - L_{t2}) \div 4$
 $L_{t1} = L_1 + L_2 + 2M$
 $L_{t2} = L_1 + L_2 - 12M$

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