

Meet BH Electronics' Pak™ Family

RoHS
COMPLIANT



L10/L13 Series SMT Mount Dual Inductors/Transformers

QTR-Pak™ & QTR-Pak II™

1

HIGH FREQUENCY POWER PRODUCTS



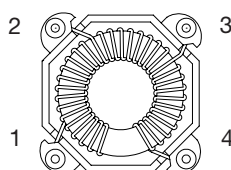
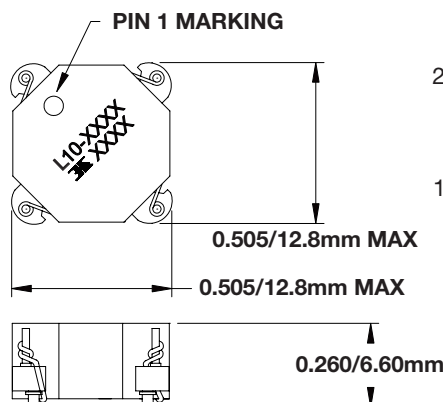
High Performance - High Reliability

- High energy storage in high reliability SMT package.
- Low EMI, self-shielding toroid based magnetics.
- Pins: 100% matte Sn over Ni plating over brass.
- Superior coplanarity vs. wire or self-leaded SMT foot designs.
- Magnet wire insulation hand tinned—outside the core area.
- No exposed copper - outside or hidden from view by SMT package.
- Pin / wire solder terminations 100% available to visual inspection.
- Feet available to RoHS reflow temps; pads not “shielded” by core.
- Solder-foot bond quality, wetting, can be viewed after reflow.
- Dual windings for SEPIC, ZETA and 1:1 transformer circuits.
- Variations quickly available: turns ratios; voltage isolation, etc.

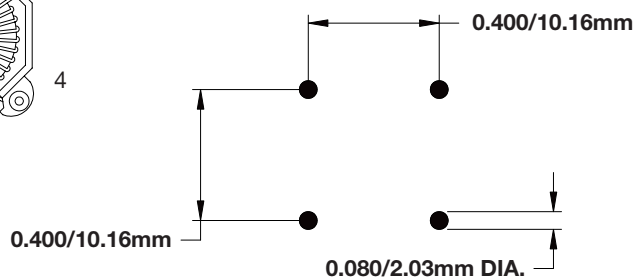
RoHS
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L10 Series: -40 to 125C Operating Range

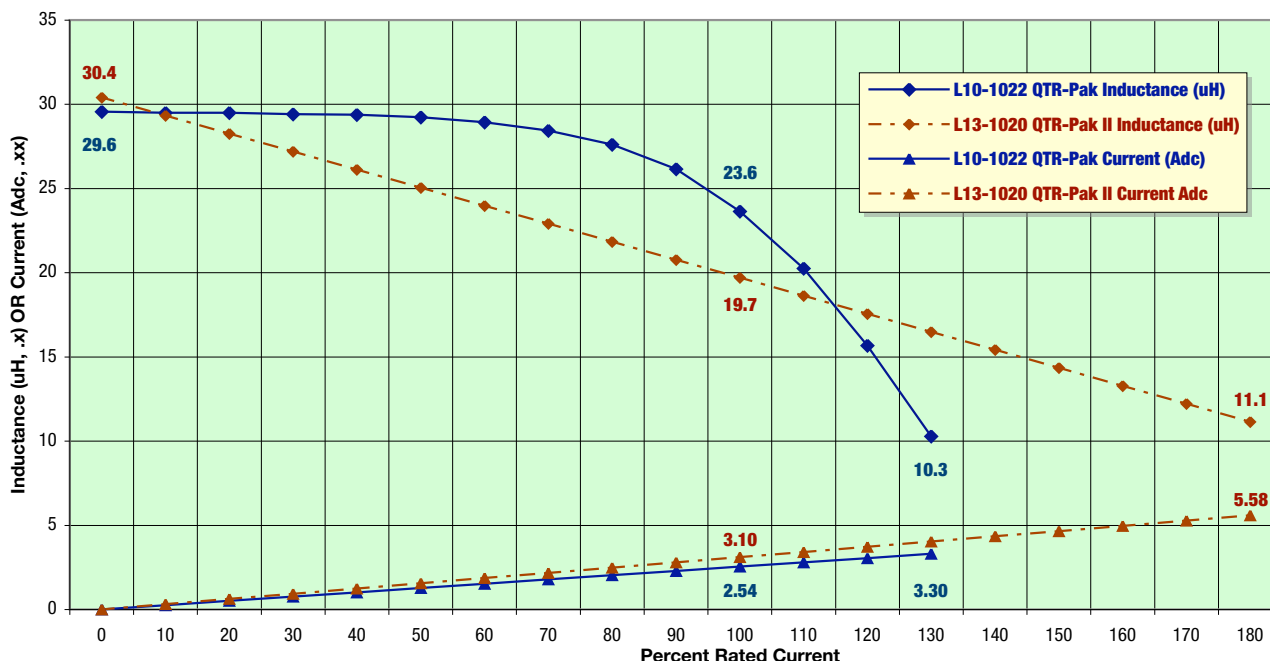
L13 Series: -40 to 150C Operating Range



RECOMMENDED PC BOARD LAYOUT



Comparison L10-1022 QTR-Pak vs L13-1020 QTR-Pak II: L (uH) @ I (Adc)



L10-xxxx QTR-Pak™

High Reliability, SMT Dual Inductors/1:1 Transformers


RoHS
COMPLIANT

BH Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (Ade) ³	Parallel DCR (Ohms) ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (Ade) ³	Series DCR (Ohms) ¹
L10-1004 ⁷	1.36	1.1	11.87	0.004	5.4	4.3	5.94	0.015
L10-1005	1.85	1.5	10.17	0.004	7.4	5.9	5.09	0.018
L10-1006	2.41	1.9	8.90	0.005	9.7	7.7	4.45	0.020
L10-1007	3.05	2.4	7.91	0.007	12.2	9.8	3.96	0.029
L10-1008	3.77	3.0	7.12	0.010	15.1	12.1	3.56	0.040
L10-1009	4.56	3.6	6.47	0.011	18.2	14.6	3.24	0.045
L10-1010	5.43	4.3	5.94	0.012	21.7	17.4	2.97	0.049
L10-1011	6.37	5.1	5.48	0.013	25.5	20.4	2.74	0.053
L10-1012	7.39	5.9	5.09	0.018	29.6	23.6	2.54	0.072
L01-0726	8.48	6.8	4.75	0.019	33.9	27.1	2.37	0.077
L10-1016	12.21	9.8	3.96	0.023	48.9	39.1	1.98	0.092
L10-1017	13.61	10.9	3.75	0.024	54.4	43.6	1.87	0.097
L10-1018	15.08	12.1	3.56	0.041	60.3	48.3	1.78	0.163
L10-1019	18.25	14.6	3.24	0.045	73.0	58.4	1.62	0.180
L10-1020	21.72	17.4	2.97	0.049	86.9	69.5	1.48	0.196
L10-1021	25.49	20.4	2.74	0.066	101.9	81.6	1.37	0.264
L10-1022	29.56	23.6	2.54	0.071	118.2	94.6	1.27	0.284
L10-1023	33.93	27.1	2.37	0.076	135.7	108.6	1.19	0.304
L10-1024	38.60	30.9	2.23	0.104	154.4	123.5	1.11	0.415
L10-1025	43.58	34.9	2.09	0.110	174.3	139.5	1.05	0.441
L10-1026	48.86	39.1	1.98	0.117	195.4	156.3	0.99	0.467
L10-1027	54.44	43.6	1.87	0.155	217.8	174.2	0.94	0.622
L10-1028	60.32	48.3	1.78	0.164	241.3	193.0	0.89	0.654
L10-1029	66.50	53.2	1.70	0.172	266.0	212.8	0.85	0.687
L10-1032	86.86	69.5	1.48	0.243	347.4	278.0	0.74	0.972
L10-1037	126.82	101.5	1.23	0.373	507.3	405.8	0.61	1.491
L10-1038	135.72	108.6	1.19	0.386	542.9	434.3	0.59	1.543
L10-1042	174.32	139.5	1.05	0.437	697.3	557.8	0.52	1.748
L10-1043	184.73	147.8	1.02	0.450	738.9	591.1	0.51	1.800
L10-1044	200.90	160.7	0.98	0.596	803.6	642.9	0.49	2.384
L10-1047	247.35	197.9	0.88	0.661	989.4	791.5	0.44	2.645
L10-1048	272.38	217.9	0.84	0.694	1089.5	871.6	0.42	2.776

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

3. Max. current measured at 25° C, 20% inductance roll-off. Above 85° C operating temp., max. current is reduced.

4. Plots of Inductance vs. Current available for all above parts. Contact BH.

5. Reflow: 30 Seconds @ 260° C maximum.

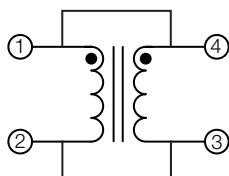
6. T&R available: 400 per 13" reel, 1,200 minimum release. Smaller quantities shipped in JEDEC trays.

7. **Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.**

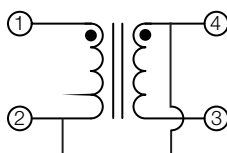
8. RoHS parts designated with "L" (e.g., L10-1007). The same part as non-RoHS designated with "5" (e.g., 510-1007).

9. Both RoHS and non-RoHS pins have matte Sn over Ni barrier over brass. Solder is SAC or Sn63/Pb37, respectively.

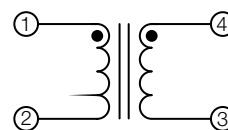
10. Above parts available with Sn90/Pb10 plated pins on a "custom" part basis. Contact BH for details.



Parallel



Series



Transformer

L13-10xx QTR-Pak II™ High Temperature (150°C Operating)

High Reliability, SMT Dual Inductors/1:1 Transformers



1

HIGH FREQUENCY POWER PRODUCTS

Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (Adc) ³	Parallel DCR (Ohms) ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (Adc) ³	Series DCR (Ohms) ¹
L13-1000 ⁷	1.90	1.24	13.10	0.006	7.60	4.94	6.55	0.024
L13-1001	2.30	1.49	11.79	0.009	9.20	5.98	5.89	0.034
L13-1002	2.74	1.78	10.72	0.009	10.9	7.11	5.36	0.037
L13-1003	3.21	2.09	9.82	0.013	12.8	8.35	4.91	0.051
L13-1004	3.72	2.42	9.07	0.014	14.9	9.68	4.53	0.055
L13-1005	4.28	2.78	8.42	0.015	17.1	11.1	4.21	0.058
L13-1006	4.86	3.16	7.86	0.020	19.5	12.6	3.93	0.079
L13-1007	5.49	3.57	7.37	0.021	22.0	14.3	3.68	0.084
L13-1008	6.16	4.00	6.93	0.022	24.6	16.0	3.47	0.089
L13-1009	6.86	4.46	6.55	0.023	27.4	17.8	3.27	0.094
L13-1010	7.60	4.94	6.20	0.031	30.4	19.8	3.10	0.124
L13-1011	9.20	5.98	5.89	0.034	36.8	23.9	2.95	0.136
L13-1012	10.9	7.11	5.36	0.037	43.8	28.5	2.68	0.149
L13-1014	14.9	9.68	4.53	0.055	59.6	38.7	2.27	0.220
L13-1015	17.1	11.1	4.21	0.073	68.4	44.5	2.11	0.293
L13-1017	22.0	14.3	3.68	0.083	87.9	57.1	1.84	0.333
L13-1018	24.6	16.0	3.47	0.088	98.5	64.0	1.73	0.352
L13-1020	30.4	19.8	3.10	0.125	122	79.0	1.55	0.500
L13-1021	33.5	21.8	2.95	0.131	134	87.1	1.47	0.525
L13-1022	36.8	23.9	2.81	0.137	147	95.6	1.40	0.550
L13-1024	43.8	28.5	2.56	0.189	175	114	1.28	0.757
L13-1025	47.5	30.9	2.46	0.197	190	124	1.23	0.788
L13-1027	63.9	41.5	2.18	0.283	256	166	1.09	1.132
L13-1029	82.8	53.8	1.90	0.322	331	215	0.95	1.288
L13-1031	104	67.6	1.68	0.458	416	271	0.84	1.834
L13-1034	141	91.3	1.44	0.533	562	365	0.72	2.131
L13-1035	154	100	1.37	0.708	616	400	0.69	2.833
L13-1037	182	119	1.25	0.771	730	474	0.63	3.085
L13-1038	198	128	1.20	0.803	791	514	0.60	3.211
L13-1040	230	149	1.11	0.866	920	598	0.56	3.462
L13-1042	265	172	1.03	1.175	1,058	688	0.52	4.701

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

3. Max. current measured at 25° C. Max. temp and inductance values stable at high temps. Contact BH for details.

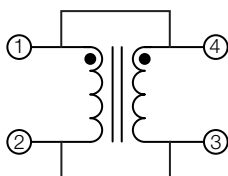
4. Plots of Inductance vs. Current available for all above parts. Contact BH.

5. Reflow: 30 Seconds @ 260° C maximum.

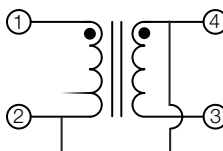
6. T&R available: 400 per 13" reel, 1,200 minimum release. Smaller quantities shipped in JEDEC trays.

7. Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.

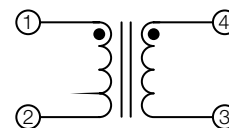
8. Cores have been tested at 200° C for 10,000 hours with no harmful effects.



Parallel



Series



Transformer

L11/L14 Series SMT Dual Inductors/Transformers

8th-Pak™ & 8th-Pak II™



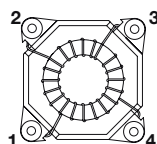
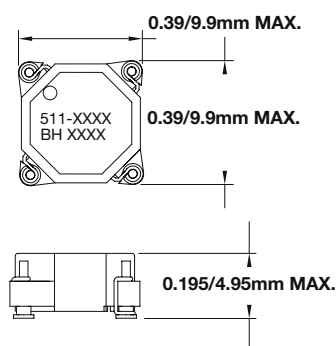
High Performance - High Reliability

- High energy storage in high reliability SMT package.
- Low EMI, self-shielding toroid based magnetics.
- Pins: 100% matte Sn over Ni plating over brass.
- Superior coplanarity vs. wire or self-leaded SMT foot designs.
- Magnet wire insulation hand tinned—outside the core area.
- No exposed copper - outside or hidden from view by SMT package.
- Pin / wire solder terminations 100% available to visual inspection.
- Feet available to RoHS reflow temps; pads not “shielded” by core.
- Solder-foot bond quality, wetting, can be viewed after reflow.
- Dual windings for SEPIC, ZETA and 1:1 transformer circuits.
- Variations quickly available: turns ratios; voltage isolation, etc.

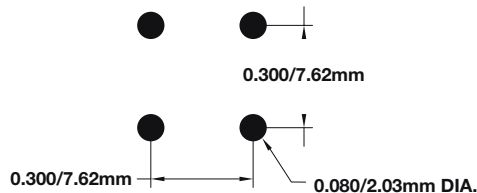
RoHS
COMPLIANT

L11 Series: -40 to 125C Operating Range

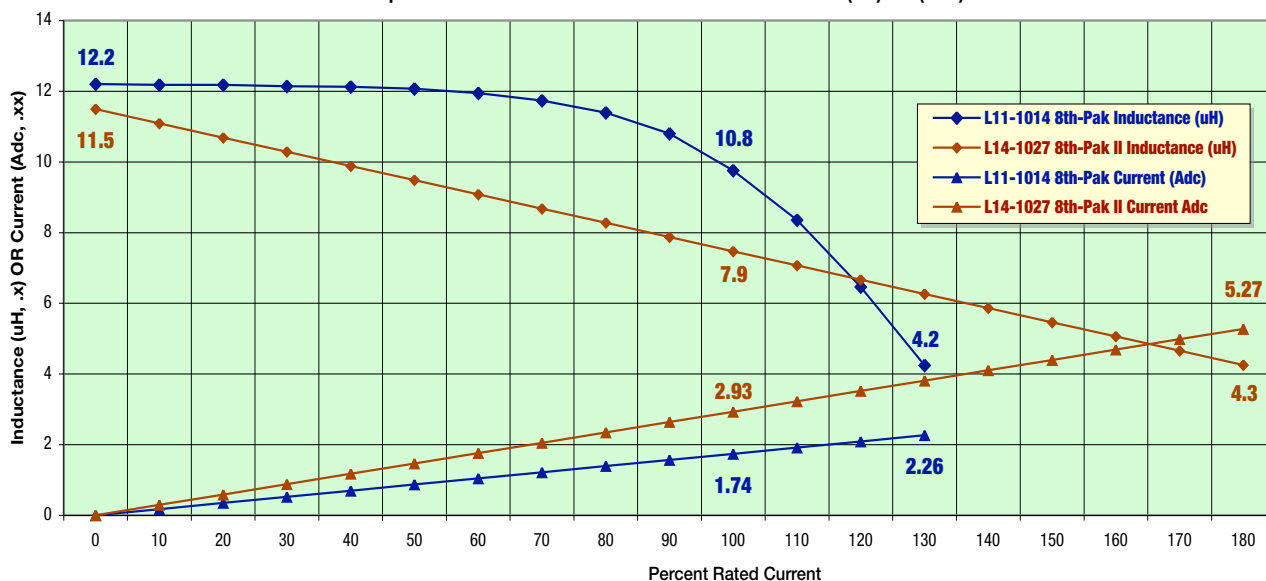
L14 Series: -40 to 150C Operating Range



RECOMMENDED PC BOARD LAYOUT



Comparison L11-1014 8th-Pak vs L14-1027 8th-Pak II: L (uH) @ I (Adc)



L11-10xx 8th-Pak™ SMT Dual Inductors/1:1 Transformers



RoHS
COMPLIANT

1
HIGH FREQUENCY POWER PRODUCTS

Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (A) ³	Parallel DCR (Ohms) ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (A) ³	Series DCR (Ohms) ¹
L11-1007 ⁷	0.56	0.45	8.11	0.002	2.2	1.79	4.05	0.007
L11-1008	0.99	0.79	6.08	0.004	4.0	3.17	3.04	0.014
L11-1009	1.55	1.24	4.86	0.006	6.2	4.96	2.43	0.022
L11-1010	2.23	1.79	4.05	0.007	8.9	7.14	2.03	0.027
L11-1110	3.04	2.43	3.47	0.010	12.2	9.72	1.74	0.040
L11-1011	3.97	3.17	3.04	0.014	15.9	12.7	1.52	0.057
L11-0033	5.02	3.76	2.70	0.013	20.1	15.0	1.35	0.050
L11-1012	6.20	4.96	2.43	0.023	24.8	19.8	1.22	0.091
L11-1013	8.93	7.14	2.03	0.034	35.7	28.6	1.01	0.137
L11-1014	12.2	9.72	1.74	0.050	48.6	38.9	0.87	0.198
L11-1015	15.9	12.7	1.52	0.057	63.5	50.8	0.76	0.227
L11-1016	20.1	16.1	1.35	0.064	80.4	64.3	0.68	0.255
L11-1017	24.8	19.8	1.22	0.090	99.2	79.4	0.61	0.360
L11-1018	30.0	24.0	1.11	0.099	120	96.0	0.55	0.396
L11-1019	35.7	28.6	1.01	0.137	143	114	0.51	0.549
L11-1020	41.9	33.5	0.94	0.149	168	134	0.47	0.594
L11-1021	48.6	38.9	0.87	0.160	194	156	0.43	0.640
L11-1022	55.8	44.6	0.81	0.217	223	179	0.41	0.868
L11-1023	63.5	50.8	0.76	0.231	254	203	0.38	0.926
L11-1024	71.7	57.3	0.72	0.246	287	229	0.36	0.984
L11-1025	80.4	64.3	0.68	0.327	321	257	0.34	1.307
L11-1026	89.5	71.6	0.64	0.345	358	286	0.32	1.379
L11-1027	99.2	79.4	0.61	0.363	397	317	0.30	1.452
L11-1028	109	87.5	0.58	0.470	437	350	0.29	1.882
L11-1029	120	96.0	0.55	0.493	480	384	0.28	1.972
L11-1030	131	105	0.53	0.515	525	420	0.26	2.061
L11-1031	143	114	0.51	0.538	571	457	0.25	2.151
L11-1032	155	124	0.49	0.560	620	496	0.24	2.240
L11-1033	168	134	0.47	0.583	671	536	0.23	2.330
L11-1034	181	145	0.45	0.766	723	579	0.23	3.063
L11-1035	194	156	0.43	0.794	778	622	0.22	3.176

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

3. Max. current measured at 25° C, 20% inductance roll-off. Above 85° C operating temp., max. current is reduced.

4. Plots of Inductance vs. Current available for all above parts. Contact BH.

5. Reflow: 30 Seconds @ 260° C maximum.

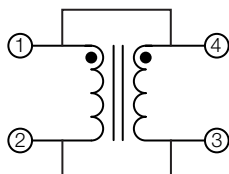
6. T&R available: 1,000 per 13" reel. Smaller quantities shipped in JEDEC trays.

7. Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.

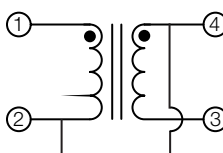
8. RoHS parts designated with "L" (e.g., L11-1013). The same part as non-RoHS designated with "5" (e.g., 511-1013).

9. Both RoHS and non-RoHS parts have matte Sn over Ni barrier over brass. Solder is SAC or Sn63/Pb37, respectively.

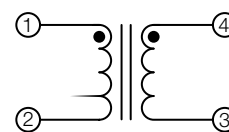
10. Above parts available with Sn90/Pb10 plated pins on a "custom" part basis. Contact BH for details.



Parallel



Series



Transformer

L14-10xx 8th-Pak II™ High Temperature (150°C Operating)

High Reliability, SMT Dual Inductors/1:1 Transformers



RoHS
COMPLIANT

BH Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (A _{dc}) ³	Parallel DCR (Ohms) ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current (A _{dc}) ³	Series DCR (Ohms) ¹
L14-1010	0.61	0.40	12.70	0.007	2.45	1.59	6.35	0.029
L14-1011	0.83	0.54	10.88	0.011	3.33	2.17	5.44	0.043
L14-1012	1.09	0.71	9.52	0.012	4.35	2.83	4.76	0.049
L14-1013	1.38	0.90	8.46	0.017	5.51	3.58	4.23	0.070
L14-1014	1.70	1.11	7.62	0.019	6.80	4.42	3.81	0.077
L14-1015	2.06	1.34	6.93	0.027	8.23	5.35	3.46	0.108
L14-1016	2.45	1.59	6.35	0.029	9.79	6.36	3.17	0.118
L14-1017	2.87	1.87	5.86	0.040	11.5	7.47	2.93	0.159
L14-1018	3.33	2.17	5.44	0.043	13.3	8.66	2.72	0.171
L14-1019	3.83	2.49	5.08	0.046	15.3	9.95	2.54	0.183
L14-1020	4.35	2.83	4.76	0.062	17.4	11.3	2.38	0.250
L14-1021	4.91	3.19	4.48	0.066	19.7	12.8	2.24	0.265
L14-1022	5.51	3.58	4.23	0.070	22.0	14.3	2.12	0.281
L14-1023	6.14	3.99	4.01	0.074	24.5	16.0	2.00	0.297
L14-1024	6.80	4.42	3.81	0.099	27.2	17.7	1.90	0.394
L14-1025	8.23	5.35	3.46	0.108	32.9	21.4	1.73	0.434
L14-1026	9.79	6.36	3.17	0.146	39.2	25.5	1.59	0.585
L14-1027	11.5	7.47	2.93	0.159	46.0	29.9	1.46	0.634
L14-1029	15.3	9.95	2.54	0.232	61.2	39.8	1.27	0.929
L14-1031	19.7	12.8	2.24	0.263	78.6	51.1	1.12	1.053
L14-1032	22.0	14.3	2.12	0.279	88.1	57.3	1.06	1.115
L14-1033	24.5	16.0	2.00	0.374	98.2	63.8	1.00	1.495
L14-1034	27.2	17.7	1.90	0.393	109	70.7	0.95	1.574
L14-1035	30.0	19.5	1.81	0.413	120	78.0	0.91	1.653
L14-1036	32.9	21.4	1.73	0.433	132	85.6	0.87	1.731
L14-1038	39.2	25.5	1.59	0.598	157	102	0.79	2.390
L14-1039	42.5	27.6	1.52	0.623	170	111	0.76	2.490
L14-1040	46.0	29.9	1.46	0.647	184	120	0.73	2.590
L14-1049	83.3	54.1	1.09	1.350	333	217	0.54	5.398

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

3. Max. current measured at 25° C. Max. temp and inductance values stable at high temps. Contact BH for details.

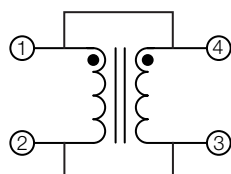
4. Plots of Inductance vs. Current available for all above parts. Contact BH.

5. Reflow: 30 Seconds @ 260° C maximum.

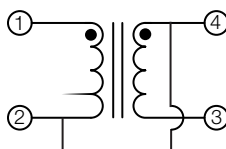
6. T&R available: 1,000 per 13" reel. Smaller quantities shipped in JEDEC trays.

7. Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.

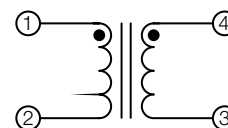
8. Cores have been tested at 200° C for 10,000 hours with no harmful effects.



Parallel



Series



Transformer

L16/L17 Series SMT Dual Inductors/Transformers

Mini-Pak™ & Mini-Pak II™

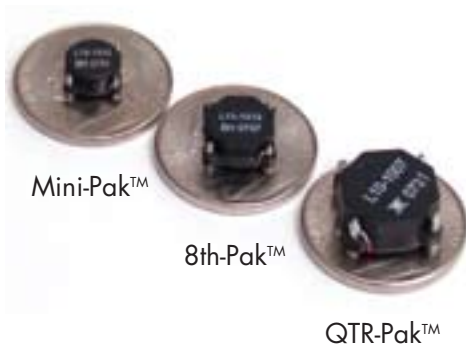
1

HIGH FREQUENCY POWER PRODUCTS

RoHS
COMPLIANT

High Performance - High Reliability

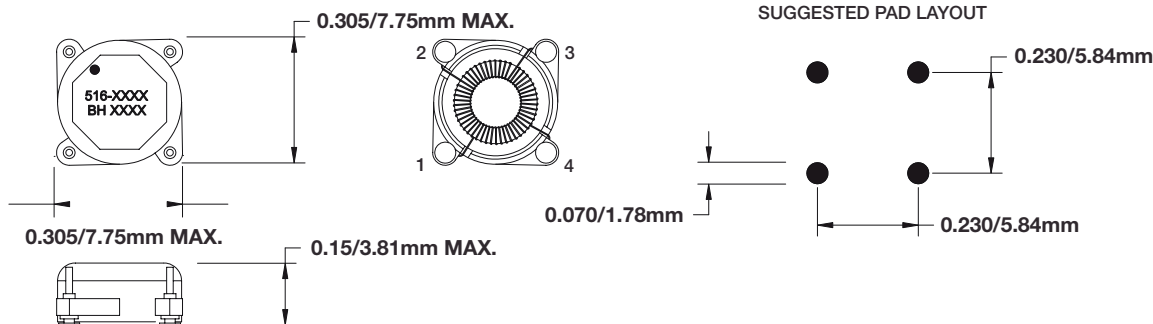
- High energy storage in low profile SMT package (0.150" / 3.8mm).
- Low EMI, self-shielding toroid based magnetics.
- Pins: 100% matte Sn over Ni plating over brass.
- Superior coplanarity vs. wire or self-leaded SMT foot designs.
- Magnet wire insulation hand tinned—outside the core area.
- Pin / wire solder terminations 100% available to visual inspection.
- Feet available to RoHS reflow temps; pads not "shielded" by core.
- Solder-foot bond quality, wetting, can be viewed after reflow.
- Dual windings for SEPIC, ZETA and 1:1 transformer circuits.
- Variations quickly available: turns ratios; voltage isolation, etc.



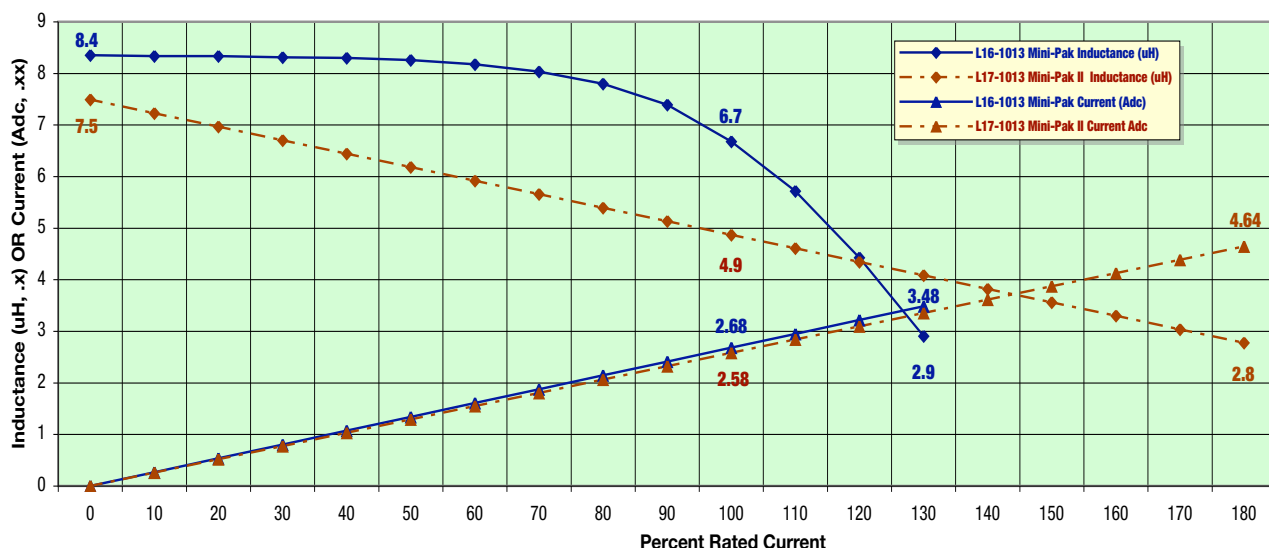
Compared to US 5¢ Coin

L16 Series: -40 to 125C Operating Range

L17 Series: -40 to 150C Operating Range



Comparison L16-1013 Mini-Pak vs L17-1013 Mini-Pak II: L (uH) @ I (A dc)



L16-10xx Mini-Pak™

High Reliability, SMT Dual Inductors/1:1 Transformers


RoHS
COMPLIANT

BH Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current ³	Parallel DCR @20C ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current ³	Series DCR @20C ¹
L16-1000	0.93	0.74	8.03	0.010	3.71	2.97	4.01	0.039
L16-1001	1.17	0.94	7.13	0.011	4.70	3.76	3.57	0.044
L16-1002	1.45	1.16	6.42	0.016	5.80	4.64	3.21	0.062
L16-1003	1.75	1.40	5.84	0.017	7.02	5.61	2.92	0.068
L16-1004	2.09	1.67	5.35	0.024	8.35	6.68	2.68	0.094
L16-1005	2.45	1.96	4.94	0.026	9.80	7.84	2.47	0.102
L16-1006	2.84	2.27	4.59	0.028	11.37	9.09	2.29	0.110
L16-1007	3.26	2.61	4.28	0.036	13.05	10.44	2.14	0.146
L16-1008	3.71	2.97	4.01	0.039	14.85	11.88	2.01	0.156
L16-1009	4.19	3.35	3.78	0.041	16.76	13.41	1.89	0.165
L16-1010	4.70	3.76	3.57	0.056	18.79	15.03	1.78	0.222
L16-1011	5.80	4.64	3.21	0.062	23.20	18.56	1.61	0.247
L16-1012	7.02	5.61	2.92	0.068	28.07	22.46	1.46	0.272
L16-1013	8.35	6.68	2.68	0.094	33.41	26.73	1.34	0.376
L16-1014	9.80	7.84	2.47	0.102	39.21	31.37	1.23	0.408
L16-1015	11.37	9.09	2.29	0.110	45.47	36.38	1.15	0.439
L16-1016	13.05	10.44	2.14	0.149	52.20	41.76	1.07	0.596
L16-1017	14.85	11.88	2.01	0.159	59.39	47.51	1.00	0.635
L16-1018	16.76	13.41	1.89	0.169	67.05	53.64	0.94	0.675
L16-1019	18.79	15.03	1.78	0.224	75.17	60.13	0.89	0.896
L16-1020	20.94	16.75	1.69	0.237	83.75	67.00	0.84	0.946
L16-1022	25.58	20.46	1.53	0.261	102.31	81.85	0.76	1.05
L16-1023	28.07	22.46	1.46	0.338	112.29	89.83	0.73	1.35
L16-1024	30.68	24.55	1.40	0.354	122.73	98.18	0.70	1.41
L16-1027	39.21	31.37	1.23	0.400	156.83	125.47	0.62	1.60
L16-1028	42.28	33.83	1.19	0.525	169.13	135.30	0.59	2.10
L16-1029	45.47	36.38	1.15	0.545	181.89	145.51	0.57	2.18
L16-1030	48.78	39.02	1.11	0.564	195.11	156.09	0.55	2.26
L16-1031	52.20	41.76	1.07	0.584	208.80	167.04	0.54	2.34
L16-1032	55.74	44.59	1.04	0.603	222.95	178.36	0.52	2.41
L16-1033	59.39	47.51	1.00	0.623	237.57	190.05	0.50	2.49
Omitted $\equiv$ and values between L16-1033 and L16-1080 available on a custom basis. Contact BH with your requirement.								
L16-1080	361.98	289.58	0.41	3.93	1447.91	1158.33	0.20	15.74

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

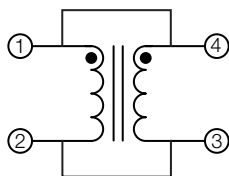
3. Max. current measured at 25° C, 20% inductance roll-off. Above 85° C operating temp., max. current is reduced.

4. Plots of Inductance vs. Current available for all above parts. Contact BH.

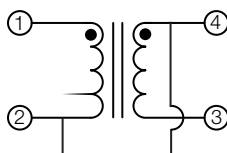
5. Reflow: 30 Seconds @ 260° C maximum.

6. T&R available: 1,250 per 13" reel; 250 per 7" reel. Smaller quantities shipped in JEDEC trays.

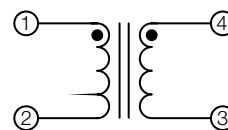
7. Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.



Parallel



Series



Transformer

L17-10xx Mini-Pak II™ High Temperature (150°C Operating)

High Reliability, SMT Dual Inductors/1:1 Transformers



RoHS
COMPLIANT

1

HIGH FREQUENCY POWER PRODUCTS

BH Part Number	Parallel				Series			
	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current ³	Parallel DCR @20C ¹	Loc (uH) @0ADC	Typical Loc (uH) Biased ²	Max Current ³	Series DCR @20C ¹
L17-1000	0.83	0.54	7.74	0.010	3.3	2.2	3.87	0.038
L17-1001	1.05	0.68	6.88	0.011	4.2	2.7	3.44	0.043
L17-1002	1.30	0.85	6.19	0.015	5.2	3.4	3.10	0.061
L17-1003	1.57	1.02	5.63	0.017	6.3	4.1	2.81	0.067
L17-1004	1.87	1.22	5.16	0.023	7.5	4.9	2.58	0.093
L17-1005	2.2	1.43	4.76	0.025	8.8	5.7	2.38	0.100
L17-1006	2.5	1.66	4.42	0.027	10.2	6.6	2.21	0.108
L17-1007	2.9	1.90	4.13	0.036	11.7	7.6	2.06	0.143
L17-1008	3.3	2.2	3.87	0.038	13.3	8.7	1.94	0.153
L17-1009	3.8	2.4	3.64	0.041	15.0	9.8	1.82	0.163
L17-1010	4.2	2.7	3.44	0.055	16.8	11.0	1.72	0.219
L17-1011	5.2	3.4	3.10	0.061	20.8	13.5	1.55	0.243
L17-1012	6.3	4.1	2.81	0.067	25.2	16.4	1.41	0.267
L17-1013	7.5	4.9	2.58	0.093	30.0	19.5	1.29	0.370
L17-1014	8.8	5.7	2.38	0.100	35.2	22.8	1.19	0.401
L17-1015	10.2	6.6	2.21	0.108	40.8	26.5	1.11	0.432
L17-1016	11.7	7.6	2.06	0.146	46.8	30.4	1.03	0.586
L17-1017	13.3	8.7	1.94	0.156	53.2	34.6	0.97	0.625
L17-1018	15.0	9.8	1.82	0.166	60.1	39.1	0.91	0.664
L17-1019	16.8	11.0	1.72	0.220	67.4	43.8	0.86	0.882
L17-1020	18.8	12.2	1.63	0.233	75.1	48.8	0.81	0.931
L17-1021	20.8	13.5	1.55	0.245	83.2	54.1	0.77	0.980
L17-1022	22.9	14.9	1.47	0.257	91.7	59.6	0.74	1.03
L17-1023	25.2	16.4	1.41	0.333	101	65.4	0.70	1.33
L17-1026	32.5	21.1	1.24	0.378	130	84.5	0.62	1.51
L17-1027	35.2	22.8	1.19	0.393	141	91.4	0.60	1.57
L17-1028	37.9	24.6	1.15	0.517	152	98.6	0.57	2.07
L17-1031	46.8	30.4	1.03	0.574	187	122	0.52	2.30
L17-1032	50.0	32.5	1.00	0.593	200	130	0.50	2.37
L17-1033	53.2	34.6	0.97	0.612	213	138	0.48	2.45
L17-1037	67.4	43.8	0.86	0.900	270	175	0.43	3.60
L17-1038	71.2	46.3	0.84	0.925	285	185	0.42	3.70
Omitted — and values between L17-1038 and L17-1080 available on a custom basis. Contact BH with your requirement.								
L17-1080	324.5	210.9	0.39	3.87	1298	844	0.20	15.48

1. Parallel DCR = DCR per winding / 2. Series DCR = DCR per winding x 2.

2. Inductance measured at 25° C.

3. Max. current measured at 25° C. Max. temp and inductance values stable at high temps. Contact BH for details.

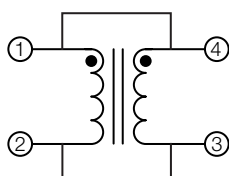
4. Plots of Inductance vs. Current available for all above parts. Contact BH.

5. Reflow: 30 Seconds @ 260° C maximum.

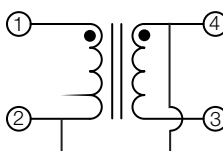
6. T&R available: 1,250 per 13" reel, 250 per 7" reel. Smaller quantities shipped in JEDEC trays.

7. Highlighted part numbers are standard products. Others are available as non-standard parts with longer lead times.

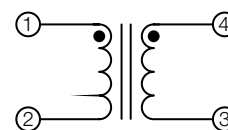
8. Cores have been tested at 200° C for 10,000 hours with no harmful effects.



Parallel



Series



Transformer

L10 vs L16 Series SMT Dual Inductors/Transformers

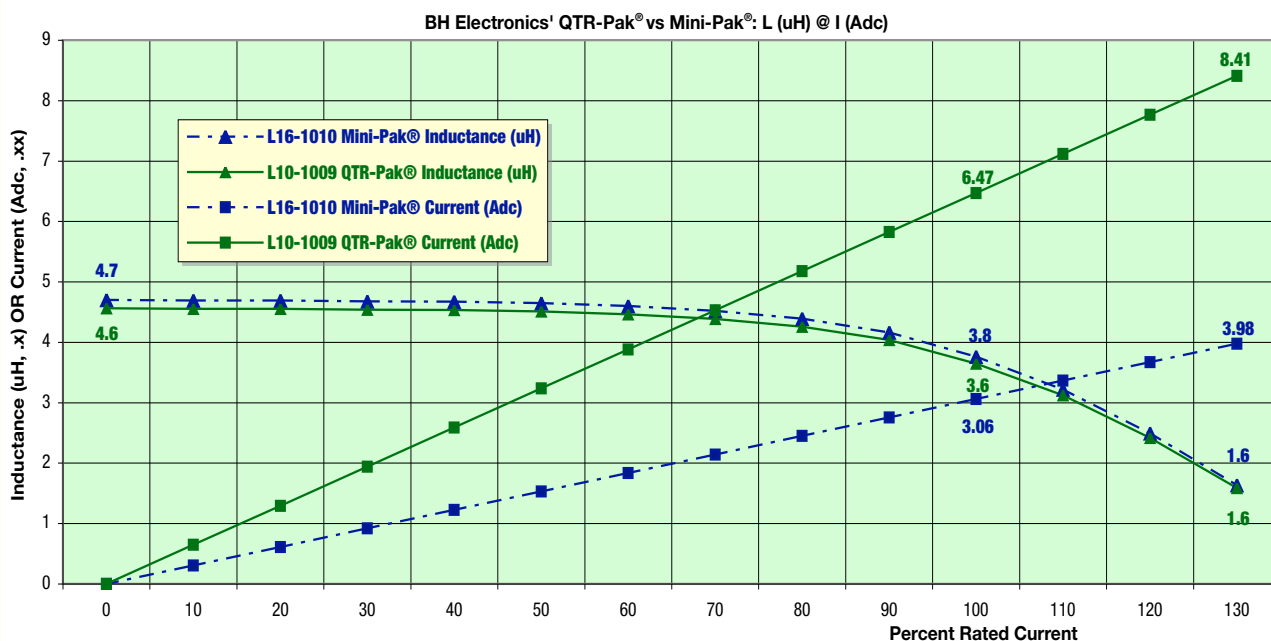
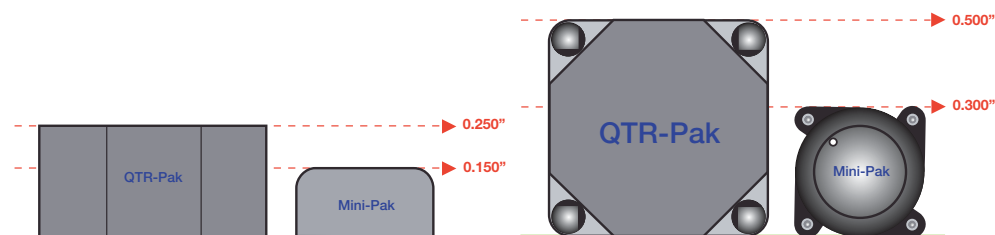
QTR-Pak™ vs Mini-Pak™

RoHS
COMPLIANT



A 10 Year Proven Heritage: High Performance - High Reliability

- Mini-Pak comes with all the qualities of QTR-Pak - in a much smaller package.
- Like QTR-Pak, Mini-Pak has 2 families with different performance features.
- Nearly 50% of QTR-Pak's I @ same L in package requiring 20% the volume (see below).



QTR-Pak™ & 8th-Pak™ Common Mode Power Chokes

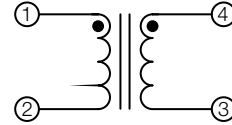
1

COMMON MODE POWER CHOKES



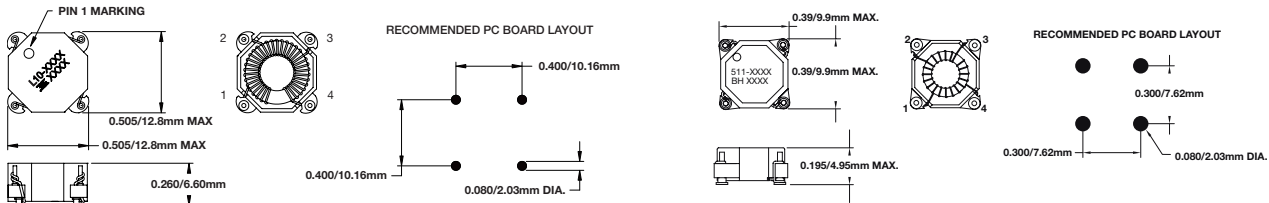
- Proven, high reliability SMT package design
- 400 VAC isolation voltage
- Matte Sn over Ni over brass pins
- Superior coplanarity
- Superior inspectability
- Feet available to reflow solder heat
- Available in JEDEC trays or tape & reel (L10-400/Reel; L11-1000/Reel)

RoHS
COMPLIANT

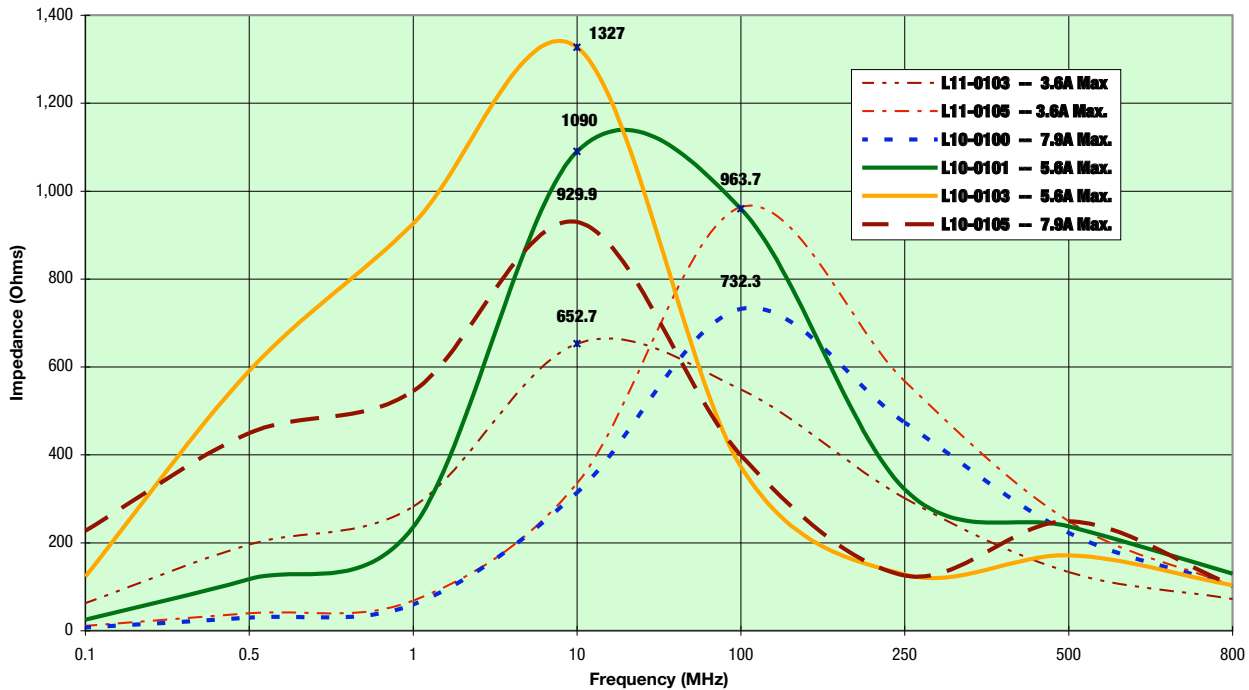


BH PART NUMBER	TYPE	QCL (Nom.)	IMPEDANCE (Typ.; Min.)	FREQUENCY	DCR/WINDING (Typ.)	RATED CURRENT	URNS RATIO
L11-0103	8th-Pak	150uH	600 Ohms	10 MHz	19 mOhms	3.6 Amps	1:1
L11-0105	8th-Pak	20uH	800 Ohms	100 MHz	19 mOhms	3.6 Amps	1:1
L10-0100	QTR-Pak	9 uH	600 Ohms	100 MHz	8 mOhms	7.9 Amps	1:1
L10-0101	QTR-Pak	41 uH	800 Ohms	10 MHz	16 mOhms	5.6 Amps	1:1
L10-0103	QTR-Pak	180 uH	1.1 kOhms	10 MHz	16 mOhms	5.6 Amps	1:1
L10-0105	QTR-Pak	98uH	175 Ohms	100 MHz	8 mOhms	7.9 Amps	1:1

Electrical specifications at 25° C. Operating temperature range -40°C to +125°C



Impedance vs Frequency - BH QTR-Paks (L10-) and 8th-Paks (L11-)



Variations: QTR-Pak™, 8th-Pak™ and Mini-Pak™

Common Threads: SMT; Space Efficiency; Reliability



MIL-PRF-27F, for Level M, Grade 5, Class S

Many standard Pak™ inductors and their variations have been modified on a custom part number basis to meet the following specifications:

Life tests performed for 1,000 hours at 130° C.
Thermal shock, mechanical shock and vibration.

Vibration tests that include a 20G peak varied logarithmically between 10-2,000Hz, scanned in $\pm$ X, Y and Z directions at 20 minutes per frequency cycle for a total of approximately 12 hours.

QTR-Paks and 8th-Paks have completed tests.
Mini-Paks are in process but not yet approved for MIL-PFR-27.

Such tests are possible only because of the SMT structure that is sound in its design: Reliable.

Contact BH with your requirement.

Up to 4,000V isolation

Perhaps you have an application that needs the inductance of one from the standard Pak list of specifications but needs a higher isolation voltage.

We can do that.

Contact BH Electronics.

Turns ratio of 1 to whatever

Standard Pak families are 1:1 transformers / dual inductors but there is no reason this ratio could not be incrementally varied to meet your specific need - quickly and efficiently.

Whether you need a variation on the standard 1:1 ratio for a SEPIC dual inductor or flyback transformer, we can do that for you - quickly and efficiently.

If your 1:1 application could benefit from lower DCR on one side of the circuit than the other - we can do that as well.

Contact BH regarding your specific requirement.

Flyback Transformers; Different Cores?

Would your application benefit from a different core such as Kool-MU® or other?

Contact BH and talk with one of our engineers.

Current Sense Transformers?

See the Current Sense transformers section of this catalog.

Magnetics put into Pak SMT structures provide space efficiency as well as reliability.

Contact BH for a N/C sample.

100 a year or 100,000 a Month?

BH Electronics has the multiple capabilities of small or large volume manufacture.

Whether "custom" or standard, BH is able to quickly respond to your requirement.

If SMT size, performance and reliability are critical to your application - large or small.

Check us out.