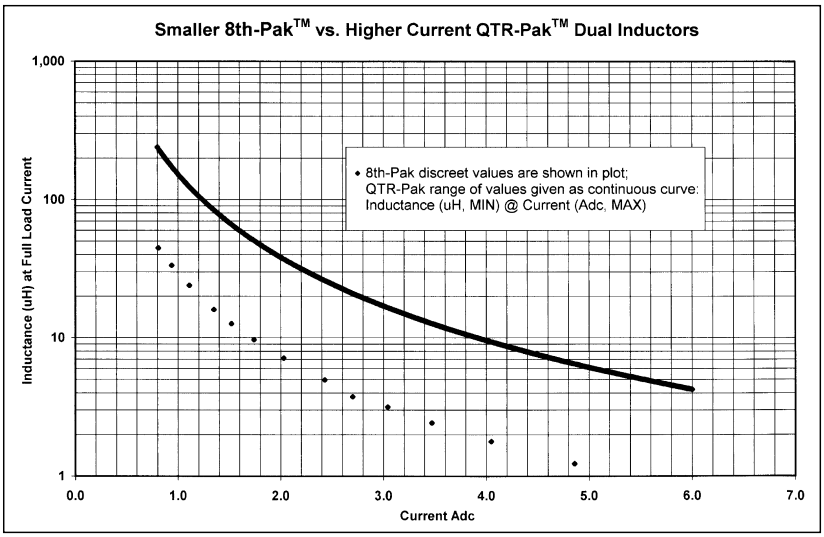
8th-Pak™ SMT Dual Inductors/1:1 Transformers

- Low EMI - toroid-based designs
- Space efficient - highest performance in smallest space, height / area
  - Combination of highest inductance @ current and/or lowest resistance
- Superior SMT precision - 0.004-inch coplanarity, cartridge-brass pin/foot platform
- Sn90 electroplated feet - superior QA & thickness control vs. all self-leaded types
- Used in Linear Technology, TI/Unitrode, National Semiconductor, MAXIM and IXYS circuits



HOW TO INTERPRET PLOTS

Individual 8th Pak™ inductance @ current data points are plotted in comparison to QTR-Pak™ (shown as continuous curve).

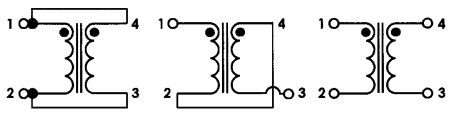
1. Locate data point 9.72uH @ 1.74Adc. Note that this corresponds to #511-1014 from table below, Parallel; MIN LOC.
2. Locate where the continuous-curve crosses 10uH on Y-axis, approximately 4Adc. Checking table on page 6, one finds QTR-Pak™ #510-1017, 10.9uH @ 3.75Adc.
3. An application requiring 10uH @ 3Adc would therefore be greater than the 8th-Pak's capabilities. This example would require a QTR-Pak™ inductor/transformer.

BH ELECTRONICS' 8TH-PAK™ DUAL INDUCTOR / 1:1 TRANSFORMER "STANDARD SERIES"								
PARALLEL					SERIES			
BH PART NUMBER	LOC (uH) @ 0 Adc Tolerance ± 20%	MIN. LOC Biased (uH)*	MAX. Current (Adc)	Nominal DCR (Ω)**	LOC (uH) @ 0 Adc Tolerance ± 20%	MIN. LOC Biased (uH)*	MAX. Current (Adc)	Nominal DCR (Ω)**
511-1022	55.80	**44.64**	**0.81**	**0.217**	223.2	178.6	0.41	0.868
511-1020	41.91	**33.53**	**0.94**	**0.149**	167.6	134.1	0.47	0.594
511-1018	30.01	**24.01**	**1.11**	**0.099**	120.0	96.04	0.56	0.396
511-1016	20.09	**16.07**	**1.35**	**0.081**	80.36	64.28	0.68	0.256
511-1015	15.87	**12.70**	**1.52**	**0.057**	63.48	50.80	0.76	0.227
511-1014	12.15	**9.72**	**1.74**	**0.050**	48.60	38.88	0.87	0.198
511-1013	8.93	**7.14**	**2.03**	**0.034**	35.72	28.56	1.02	0.137
511-1012	6.20	**4.96**	**2.43**	**0.023**	24.80	19.84	1.22	0.091
511-0033	5.02	**3.76**	**2.70**	**0.013**	20.08	15.04	1.35	0.050
511-1011	3.97	**3.17**	**3.04**	**0.014**	15.88	12.68	1.52	0.057
511-1110	3.04	**2.43**	**3.47**	**0.010**	12.16	9.72	1.74	0.040
511-1010	2.23	**1.79**	**4.05**	**0.007**	8.92	7.16	2.03	0.027
511-1009	1.55	**1.24**	**4.86**	**0.0056**	6.20	4.96	2.43	0.022
511-1008	0.99	**0.79**	**6.08**	**0.0045**	3.96	3.16	3.04	0.018
511-1007	0.56	**0.45**	**8.11**	**0.0034**	2.24	1.80	4.06	0.014

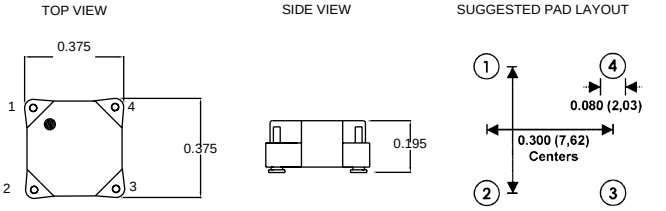
*MINIMUM Inductance Values (at Full Load Current) for Operating Temperature Range -40º to 85º C.

** Parallel DCR equals resistance value per winding divided by 2. Series DCR equals resistance value per winding times 2.

SCHEMATICS



MECHANICALS



Surface Mount Dual Inductors / Transformers

QTR-Pak™ and 8th-Pak™

Rugged, Efficient & Versatile Designs – For Other Applications

- Non 1:1 Power Transformers
- Isolation Transformers
- Gate Drive Transformers
- Current Sense Transformers
- Military Versions

Non 1:1 Power Transformers:
Designs based on Inductance @ Current plots

EXAMPLE: *QTR-Pak™ Part Number 501-0657 (1:1.8 Transformer)*

- As recommended by Linear Technology's LTC1626-SYNC, high efficiency, 2-phase synchronous step down switching regulator. 7uH MIN @ 4 Adc on primary. High voltage test: 500 VDC @ 1 sec.
- This is but one example of many Non 1:1 transformers available in either QTR-Pak™ or 8th-Pak™ surface mount packages.

Isolation Transformers:
Up to 4000 VAC isolation with QTR-Pak™; 2000 VAC isolation with 8th-Pak™

EXAMPLE: *QTR-Pak™ Part Number 510-1219 (1:1 QTR-Pak™ Isolation Transformer, 2000 VAC)*

- Rated at 14.6 uH MIN @ 3.24 Adc. This 2000V isolation version of the 510-1019 QTR-Pak™ (see catalog page 6) is consistent with the Inductance @ Current plots. QTR-Pak™ Isolation Transformers can meet your requirements with isolation of 2000 or 4000V.

EXAMPLE: *BH 8th-Pak™ Part Number 511-1218 (1:1 8th-Pak™ Isolation Transformer, 2000 VAC)*

- For use with Isolated Flyback Switching Regulator like Linear Technology's LT1425 and is rated at 24.0 uH MIN @ 1.11 Adc.

Small Gate Drive Transformers: 2000 VAC / 1 sec

EXAMPLE: *8th-Pak™ Part Number 511-0002 (3:1 8th-Pak Gate Drive Transformer with 2000 VAC isolation)*

- Used with IXYS' IXBD4411/IXBD4411 ISOSMART chipset for 1- or 3-phase motor controls and other IXYS applications. OCL MIN, 53uH. Primary leakage inductance 0.45uH MAX. Interwinding capacitance: 4pF MAX.

Current Sense Transformers:
QTR-Pak™ / 8th-Pak™ 1:50; 1:100; 1:200

EXAMPLE: *BH part numbers 500-2600 to 500-2605 (Current Sense Transformers)*

- See page 16 for more information.

Military Versions: QTR-Pak™ / 8th-Pak™

EXAMPLE: *QTR-Pak™ part number 501-0811 (Qualified to Mil-PRF-27, for Level M, Grade 5, Class S)*

- Standard QTR-Pak™ part number 501-0726 (see catalog page 6)
- Any of the QTR-Pak™ and 8th-Pak™ transformers can be qualified "by similarity" to meet full Mil-PRF-27 specifications.
- Included in Mil-PRF-27 specifications are life tests performed for 1000 hours at 130ºC. Testing includes thermal shock, mechanical shock and vibration tests. Vibration includes a 20G peak test varied logarithmically between 10-2000Hz, scanned in + X, Y and Z directions at 20 minutes per frequency cycle for a total of approximately 12 hours.

Tape & Reel Packaging: EIA RS481-A; ASTM Approved

- QTR-Pak™ @ 400/13-inch reel, 1,200 MIN releases
- 8th-Pak™ @ 1,000/13-inch reel
- Contact BH with your requirements
