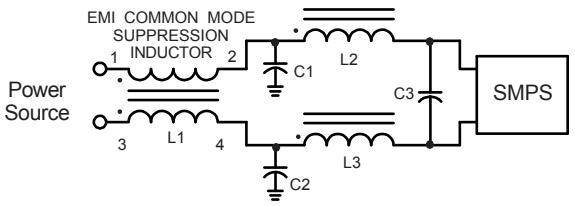
620 NORTH LINDENWOOD, OLATHE, KANSAS 66062
www.torotelproducts.com (913) 747-6111 FAX (913) 747-6110

COMMON MODE INDUCTORS FOR EMI/RFI APPLICATIONS

Common Mode Inductors are most often used to eliminate line transmitted noise, such as that caused by transistors, SCR's, etc., in switch mode regulated power supplies. Interference caused by multiple equipment on a common power line can be minimized by the "split-winding" design, thus reducing the inherent conducted noise to an acceptable level.

- **Maximum operating temperature:** 130 ºC. (ambient + temperature rise)
- **Dielectric strength:** 1500 Vrms
- **Winding balance:** ±1%



A typical circuit for the elimination of noise is shown above. The filter contains two stages, one for common mode noise (L1, C1 and C2) and one for conducted noise (L2, L3 and C3). Special note should be made of the phasing dots.

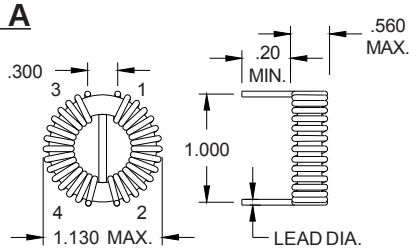
PART NUMBER	"L"† (*mH*)	DCI ‡ (*Amps*)	DCR† (Ω) max.	LEAKAGE INDUCTANCE (*µH*)	TEST** LEVEL (*VRMS*)	LEAD DIA.
∗31G1	1.0	6.0	0.02	12	0.08	0.036
∗31G3	3.0	3.5	0.06	35	0.20	0.032
∗31G10	10.0	1.8	0.24	130	0.50	0.032

PART NUMBER	"L"† (*mH*)	DCI ‡ (*Amps*)	DCR† (Ω) max.	LEAKAGE INDUCTANCE (*µH*)	TEST** LEVEL (*VRMS*)	LEAD DIA.
∗32K2	2.0	7.5	0.02	25	0.08	0.047
∗32K4	4.0	5.2	0.04	45	0.20	0.036
∗32K8	8.0	3.2	0.12	90	0.50	0.032
∗32K16	16.0	2.6	0.16	180	1.00	0.032

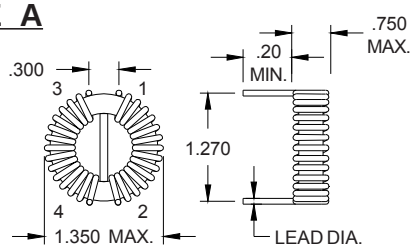
† Inductance and DCR values shown are for each winding
Other inductances are available.
‡ DCI is for 40º C temperature rise.
** Test level is at 1 kHz.

Dimensions are in inches
For LEAD DIA. see tables above

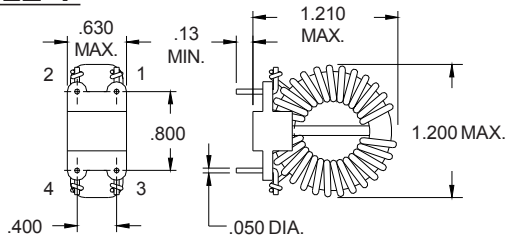
STYLE A



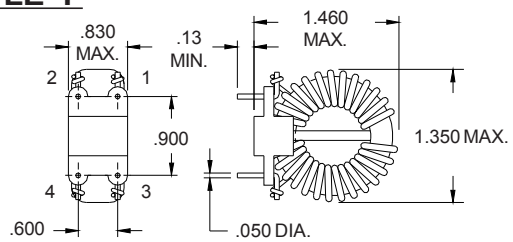
STYLE A



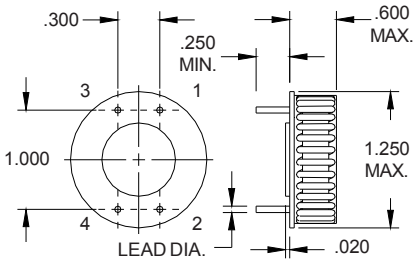
STYLE F



STYLE F



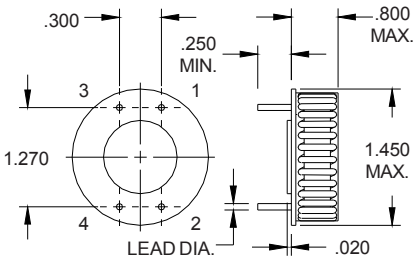
STYLE NA, NB



STYLE	DESCRIPTION
NA	WITH FOOT
NB	WITHOUT FOOT

These parts may be special ordered with a 4-40UNC X 5 threads min. insert

STYLE NA, NB



PART NUMBER ORDERING INFORMATION

* Add style prefix (from this page) to part number

EXAMPLE: **A 31 G 1**

- **A** — STYLE
- **31** — CORE TYPE
- **G** — SIZE
- **1** — INDUCTANCE (milihenrys)

COMMON MODE INDUCTORS

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- **Ideally suited as switching regulator and coupled inductors, common mode chokes, or in other power filtering applications.**
- **The temperature rise is less than 30 ºC when measured at an ambient temperature of 100 ºC, 0.1 v rms, 10 kHz, and at rated DC current as shown in theTables below.**
- **A large selection of sizes provides maximum performance for minimum size.**
- **Each unit is magnetically shielded.**

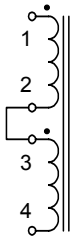
CASE	A MAX.	B MAX.	C ±.010	D ±.010	INSERT	TERMINAL ARRANGEMENT	LEAD DIA.
1	.280 (7.11)	.410 (10.41)	.260 (6.6)	.160 (4.06)	—	A	.012
2	.340 (8.63)	.500 (12.7)	.350 (8.89)	.250 (6.35)	—	A	.012
3	.415 (10.54)	.630 (16.0)	.440 (11.17)	.340 (8.64)	—	A	.016
4	.500 (12.70)	.800 (20.32)	.560 (14.22)	.460 (11.68)	—	B	.016
5	.635 (16.12)	.950 (24.13)	.670 (17.0)	.570 (14.48)	.138-32 UNC-2B	B	.020

Dimensions are in inches (mm)

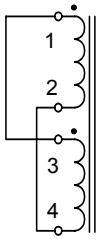
All inductors have split windings for versatility. They can be connected in series, parallel or individually for balanced filtering applications.

The ratings in the tables below are for a series-aided connection of both windings. The inductance of a parallel connection of these windings will result in 25% of the inductance at twice the rated current. The DCR will be 25% of the series connection.

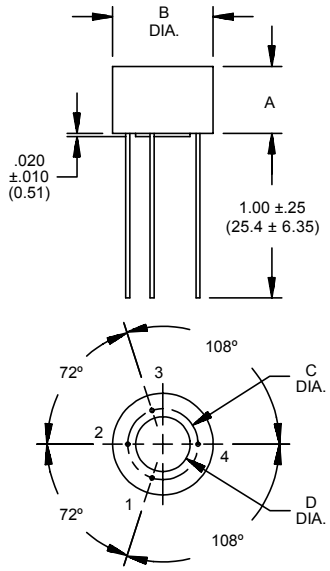
SERIES



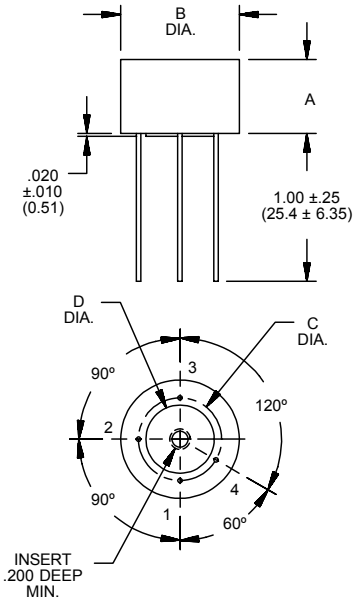
PARALLEL



TERMINAL ARRANGEMENT A



TERMINAL ARRANGEMENT B



PART NUMBER	SERIES CONNECTED INDUCTANCE (*mH*)*	CURRENT (*DC Amps*)	DCR (Ω)	CASE
PK-01	20.0	0.06	54.00	1
PK-02	20.0	0.10	29.00	2
PK-03	20.0	0.14	20.00	3
PK-04	20.0	0.22	12.40	4
PK-05	20.0	0.29	10.20	5
PK-06	15.0	0.07	40.50	1
PK-07	15.0	0.12	22.00	2
PK-08	15.0	0.16	15.00	3
PK-09	15.0	0.25	9.30	4
PK-10	15.0	0.33	7.70	5
PK-11	10.0	0.08	27.00	1
PK-12	10.0	0.14	14.60	2
PK-13	10.0	0.20	10.00	3
PK-14	10.0	0.31	6.20	4
PK-15	10.0	0.40	5.10	5
PK-16	7.5	0.10	20.30	1
PK-17	7.5	0.17	11.00	2
PK-18	7.5	0.24	7.50	3
PK-19	7.5	0.38	4.70	4
PK-20	7.5	0.49	3.80	5
PK-21	5.0	0.12	13.50	1
PK-22	5.0	0.21	7.30	2
PK-23	5.0	0.30	5.00	3
PK-24	5.0	0.47	3.10	4
PK-25	5.0	0.60	2.60	5
PK-26	3.0	0.16	8.10	1
PK-27	3.0	0.27	4.40	2
PK-28	3.0	0.38	3.00	3
PK-29	3.0	0.60	1.90	4
PK-30	3.0	0.78	1.50	5

*Inductance is measured at 0.1 V_{rms} and 10 kHz

PART NUMBER	SERIES CONNECTED INDUCTANCE (*mH*)*	CURRENT (*DC Amps*)	DCR (Ω)	CASE
PK-31	2.00	0.19	5.40	1
PK-32	2.00	0.33	2.90	2
PK-33	2.00	0.47	2.00	3
PK-34	2.00	0.74	1.30	4
PK-35	2.00	0.95	1.00	5
PK-36	1.00	0.27	2.70	1
PK-37	1.00	0.47	1.50	2
PK-38	1.00	0.66	1.00	3
PK-39	1.00	1.00	0.62	4
PK-40	1.00	1.30	0.50	5
PK-41	0.75	0.31	2.00	1
PK-42	0.75	0.54	1.00	2
PK-43	0.75	0.76	0.75	3
PK-44	0.75	1.20	0.47	4
PK-45	0.75	1.60	0.38	5
PK-46	0.50	0.38	1.30	1
PK-47	0.50	0.66	0.66	2
PK-48	0.50	0.93	0.50	3
PK-49	0.50	1.47	0.31	4
PK-50	0.50	1.90	0.25	5
PK-51	0.25	0.53	0.66	1
PK-52	0.25	0.93	0.33	2
PK-53	0.25	1.30	0.25	3
PK-54	0.25	2.08	0.16	4
PK-55	0.25	2.70	0.13	5
PK-56	0.10	0.78	0.30	1
PK-57	0.10	1.35	0.17	2
PK-58	0.10	1.95	0.11	3
PK-59	0.10	3.08	0.07	4
PK-60	0.10	3.88	0.06	5
PK-61	0.04	1.18	0.14	1
PK-62	0.04	2.03	0.07	2
PK-63	0.04	2.68	0.06	3