



# Unshielded Power Inductors

TL-HSM0402/0802/0804/0810/1206A/1206B Series

## Inductance with current and temperature:

- Inductance is measured with HP-4284A LCR Meter or equivalent.
- Inductance drops 10% typical at Isat level with temperature rise under 30°C in accordance with Irms measurement.
- Inductance drops 10% typical at Isat level with temperature rise under 40°C in accordance with Irms measurement.
- Operating temperature: -25°C ~ +85°C

## Features:

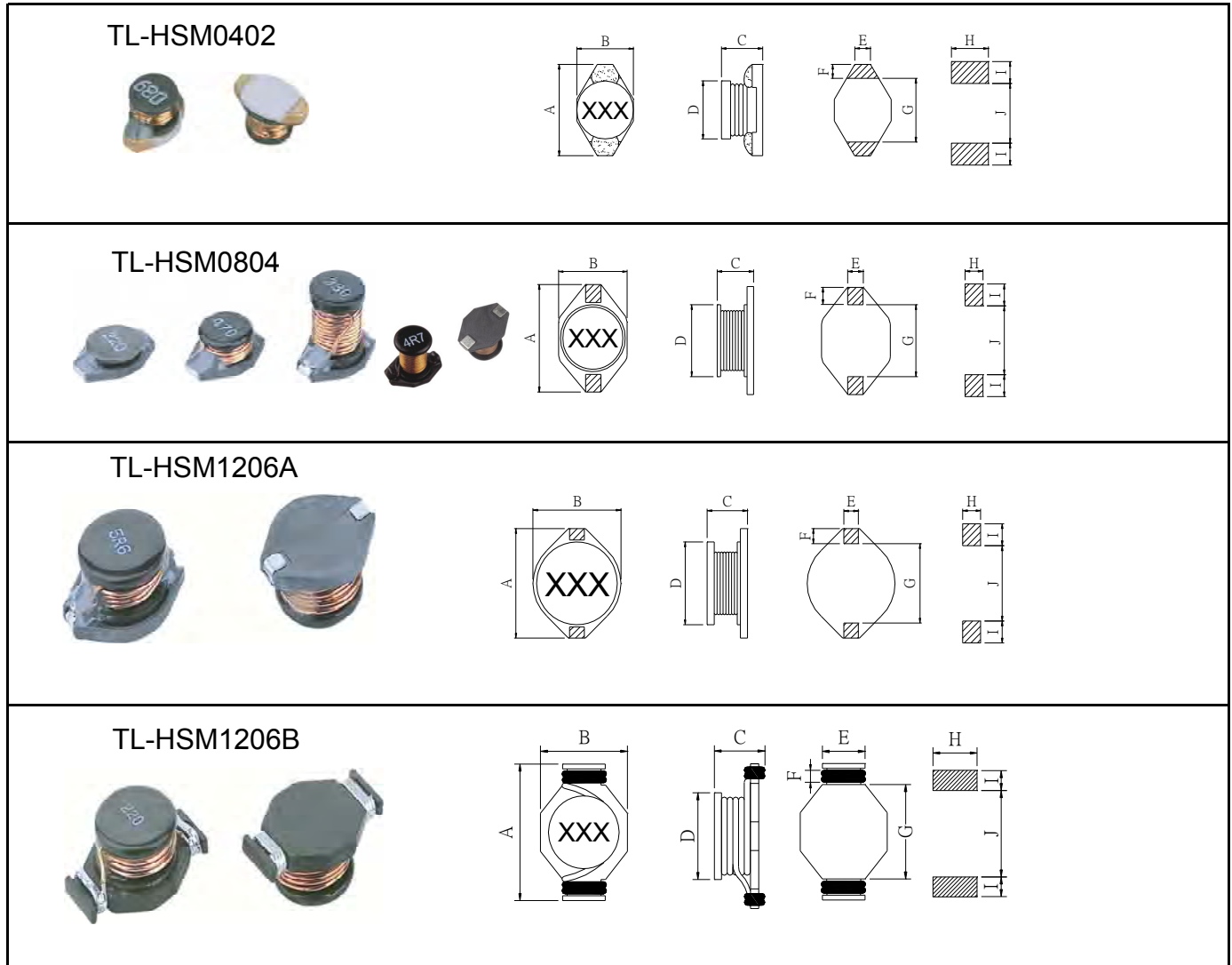
- Low profile very effective in space-conscious applications.
- Low resistance less power loss.
- Supper low resistance with high current rating.

## Applications:

- Used for DC-DC conversion in notebooks computers, PDA and mobile hand held phones. step-up or step-down converters and flash memory.

$$\frac{\text{TL} - \boxed{\text{H}} \boxed{\text{S}} \boxed{\text{M}}}{\textcircled{1}} \quad \frac{\boxed{3} \boxed{2}}{\textcircled{2}} - \frac{101}{\textcircled{3}} \quad \frac{\boxed{\text{K}}}{\textcircled{4}} - \frac{\boxed{\text{T}} / \boxed{\text{B}}}{\textcircled{5}}$$

- ① Product Type : Product Code
- ② Size Code : Base x Height
- ③ Inductance
- ④ Tolerance : J ±5% ; K±10% ; L±15% ; M±20% ; P±25% ; N±30%
- ⑤ Package : T=Tape and Reel ; B=Bulk

**TL-HSM0402/0802/0804/0810/1206A/1206B Series**

**Dimensions (mm)**

Part No.	A	B	C	D	E	F	G	H	I	J	Page
TL-HSM0402	6.6Max	4.45Max	2.92Max	4.00	1.27	1.00	4.32	2.64	1.14	4.57	3
TL-HSM0802	12.95Max	9.40Max	3.00Max	8.38	2.54	2.54	7.62	2.79	2.92	7.37	3
TL-HSM0804	12.95Max	9.40Max	5.21Max	8.38	2.54	2.54	7.62	2.79	2.92	7.37	4
TL-HSM0810	12.95Max	9.40Max	11.43Max	8.38	2.54	2.54	7.62	2.79	2.92	7.37	4
TL-HSM1206A	18.54Max	15.24Max	7.11Max	12.70	2.54	2.54	12.70	2.79	2.92	12.45	5
TL-HSM1206B	22.35Max	16.26Max	8.00Max	12.70	8.30	2.00	15.00	8.64	3.18	17.53	5

**Electrical Characteristics TL-HSM0402**

Part No.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM0402-1R0M	1.0	0.060	2.90	2.00	100KHz,0.1V
TL-HSM0402-1R5M	1.5	0.060	2.60	1.80	100KHz,0.1V
TL-HSM0402-2R2M	2.2	0.070	2.30	1.60	100KHz,0.1V
TL-HSM0402-3R3M	3.3	0.080	2.00	1.40	100KHz,0.1V
TL-HSM0402-4R7M	4.7	0.135	1.50	1.00	100KHz,0.1V
TL-HSM0402-6R8M	6.8	0.160	1.20	0.84	100KHz,0.1V
TL-HSM0402-100M	10	0.200	1.10	0.77	100KHz,0.1V
TL-HSM0402-150M	15	0.310	0.90	0.63	100KHz,0.1V
TL-HSM0402-220K	22	0.430	0.70	0.49	100KHz,0.1V
TL-HSM0402-330K	33	0.510	0.58	0.40	100KHz,0.1V
TL-HSM0402-470K	47	0.840	0.50	0.35	100KHz,0.1V
TL-HSM0402-680K	68	1.220	0.40	0.28	100KHz,0.1V
TL-HSM0402-101K	100	1.770	0.31	0.21	100KHz,0.1V
TL-HSM0402-151K	150	2.400	0.27	0.18	100KHz,0.1V
TL-HSM0402-221K	220	3.760	0.22	0.15	100KHz,0.1V
TL-HSM0402-331K	330	5.710	0.18	0.13	100KHz,0.1V
TL-HSM0402-471K	470	7.800	0.16	0.11	100KHz,0.1V
TL-HSM0402-681K	680	11.230	0.14	0.10	100KHz,0.1V
TL-HSM0402-102K	1000	19.500	0.10	0.07	100KHz,0.1V

**TL-HSM0802**

Part No.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM0802-100M	10	0.090	2.40	2.00	100KHz,0.1V
TL-HSM0802-150M	15	0.120	2.00	1.50	100KHz,0.1V
TL-HSM0802-220M	22	0.190	1.60	1.30	100KHz,0.1V
TL-HSM0802-330M	33	0.250	1.40	1.10	100KHz,0.1V
TL-HSM0802-470M	47	0.320	1.00	0.80	100KHz,0.1V
TL-HSM0802-560M	56	0.300	0.95	0.75	100KHz,0.1V
TL-HSM0802-680M	68	0.550	0.90	0.70	100KHz,0.1V
TL-HSM0802-101M	100	0.700	0.70	0.60	100KHz,0.1V
TL-HSM0802-151M	150	1.000	0.60	0.50	100KHz,0.1V
TL-HSM0802-221M	220	1.600	0.50	0.40	100KHz,0.1V
TL-HSM0802-331M	330	2.200	0.40	0.30	100KHz,0.1V
TL-HSM0802-471M	470	3.300	0.30	0.20	100KHz,0.1V
TL-HSM0802-681M	680	4.400	0.20	0.10	100KHz,0.1V
TL-HSM0802-102M	1000	7.000	0.10	0.05	100KHz,0.1V



**Electrical Characteristics TL-HSM0804**

Part NO.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM0804-1R0M	1.0	0.009	9.00	6.80	100KHz,0.1V
TL-HSM0804-1R5M	1.5	0.010	8.00	6.40	100KHz,0.1V
TL-HSM0804-2R2M	2.2	0.012	7.00	6.10	100KHz,0.1V
TL-HSM0804-3R3M	3.3	0.015	6.40	5.40	100KHz,0.1V
TL-HSM0804-4R7M	4.7	0.018	5.40	4.80	100KHz,0.1V
TL-HSM0804-6R8M	6.8	0.027	4.60	4.40	100KHz,0.1V
TL-HSM0804-100M	10	0.038	3.80	3.90	100KHz,0.1V
TL-HSM0804-150M	15	0.049	3.00	3.10	100KHz,0.1V
TL-HSM0804-220M	22	0.085	2.60	2.70	100KHz,0.1V
TL-HSM0804-330M	33	0.100	2.00	2.10	100KHz,0.1V
TL-HSM0804-470M	47	0.140	1.60	1.80	100KHz,0.1V
TL-HSM0804-560M	56	0.162	1.50	1.70	100KHz,0.1V
TL-HSM0804-680M	68	0.200	1.40	1.50	100KHz,0.1V
TL-HSM0804-101M	100	0.280	1.20	1.30	100KHz,0.1V
TL-HSM0804-151M	150	0.400	1.00	1.00	100KHz,0.1V
TL-HSM0804-221M	220	0.610	0.80	0.80	100KHz,0.1V
TL-HSM0804-331M	330	1.020	0.60	0.60	100KHz,0.1V
TL-HSM0804-471M	470	1.270	0.50	0.50	100KHz,0.1V
TL-HSM0804-681M	680	2.020	0.40	0.40	100KHz,0.1V
TL-HSM0804-102M	1000	3.000	0.30	0.30	100KHz,0.1V

**TL-HSM0810**

Part No.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM0810-1R0M	1.0	0.010	11.60	6.80	100KHz,0.1V
TL-HSM0810-1R5M	1.5	0.010	11.00	6.60	100KHz,0.1V
TL-HSM0810-2R2M	2.2	0.013	10.50	6.10	100KHz,0.1V
TL-HSM0810-2R7M	2.7	0.014	10.00	5.60	100KHz,0.1V
TL-HSM0810-100M	10	0.033	8.00	3.50	100KHz,0.1V
TL-HSM0810-150M	15	0.042	7.00	3.00	100KHz,0.1V
TL-HSM0810-220M	22	0.054	5.50	2.50	100KHz,0.1V
TL-HSM0810-330M	33	0.080	4.00	2.00	100KHz,0.1V
TL-HSM0810-470M	47	0.100	3.80	1.60	100KHz,0.1V
TL-HSM0810-680M	68	0.170	3.00	1.20	100KHz,0.1V
TL-HSM0810-101M	100	0.220	2.50	1.20	100KHz,0.1V
TL-HSM0810-151M	150	0.340	2.00	0.90	100KHz,0.1V
TL-HSM0810-221M	220	0.440	1.60	0.70	100KHz,0.1V
TL-HSM0810-331M	330	0.700	1.20	0.60	100KHz,0.1V
TL-HSM0810-471M	470	0.950	1.00	0.30	100KHz,0.1V
TL-HSM0810-681M	680	1.200	1.00	0.20	100KHz,0.1V
TL-HSM0810-102M	1000	2.000	0.80	0.10	100KHz,0.1V

**Electrical Characteristics TL-HSM1206A**

Part No.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM1206A-1R0M	1.0	0.009	20	8.60	100KHz,0.1V
TL-HSM1206A-2R2M	2.2	0.014	16	7.10	100KHz,0.1V
TL-HSM1206A-3R3M	3.3	0.018	14	6.20	100KHz,0.1V
TL-HSM1206A-5R6M	5.6	0.020	12	5.30	100KHz,0.1V
TL-HSM1206A-100M	10	0.031	10	4.30	100KHz,0.1V
TL-HSM1206A-150M	15	0.036	8.0	4.00	100KHz,0.1V
TL-HSM1206A-220M	22	0.047	7.0	3.50	100KHz,0.1V
TL-HSM1206A-330M	33	0.066	5.5	3.00	100KHz,0.1V
TL-HSM1206A-470M	47	0.086	4.5	2.60	100KHz,0.1V
TL-HSM1206A-680M	68	0.130	3.5	2.30	100KHz,0.1V
TL-HSM1206A-101K	100	0.190	3.0	1.80	100KHz,0.1V
TL-HSM1206A-151K	150	0.250	2.6	1.50	100KHz,0.1V
TL-HSM1206A-221K	220	0.380	2.4	1.20	100KHz,0.1V
TL-HSM1206A-331K	330	0.560	1.9	1.00	100KHz,0.1V
TL-HSM1206A-471K	470	0.850	1.4	0.82	100KHz,0.1V
TL-HSM1206A-681K	680	1.100	1.2	0.72	100KHz,0.1V
TL-HSM1206A-102K	1000	0.800	1.0	0.56	100KHz,0.1V

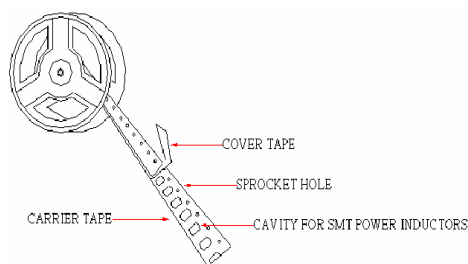
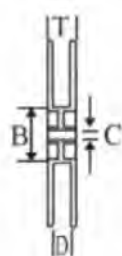
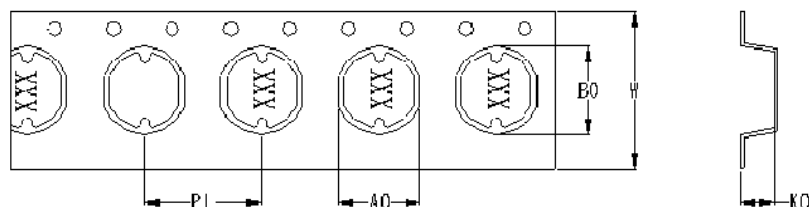
**TL-HSM1206B**

Part No.	Inductance ( $\mu$ H)	DCR(Max) ( $\Omega$ )	Isat (A)Max	Irms (A)Max	Test Freq
TL-HSM1206B-R78M	0.78	0.0022	30.0	21.0	100KHz,0.1V
TL-HSM1206B-1R2M	1.2	0.0035	27.0	19.0	100KHz,0.1V
TL-HSM1206B-1R5M	1.5	0.0040	24.0	18.0	100KHz,0.1V
TL-HSM1206B-2R2M	2.2	0.0061	20.0	15.0	100KHz,0.1V
TL-HSM1206B-3R3M	3.3	0.0072	17.0	13.0	100KHz,0.1V
TL-HSM1206B-3R9M	3.9	0.010	15.0	12.0	100KHz,0.1V
TL-HSM1206B-4R7M	4.7	0.011	13.0	10.0	100KHz,0.1V
TL-HSM1206B-6R0M	6.0	0.014	12.0	9.0	100KHz,0.1V
TL-HSM1206B-6R8M	6.8	0.016	11.5	8.7	100KHz,0.1V
TL-HSM1206B-7R8M	7.8	0.017	11.0	8.5	100KHz,0.1V
TL-HSM1206B-100M	10.0	0.023	10.0	7.5	100KHz,0.1V
TL-HSM1206B-150M	15.0	0.034	8.0	7.0	100KHz,0.1V
TL-HSM1206B-220M	22.0	0.045	7.0	6.0	100KHz,0.1V

## Unshielded Power Inductors

TL-HSM0402/0802/0804/0810/1206A/1206B Series

Packaging:



### Reel Dimensions ( Tolerance $\pm 0.5$ )

Part No.	Dimensions of Reel (mm)					Packing Quantity(K)
	A	B	C	D	T	
TL-HSM0402	338.5	105.3	7.5	8.3	12.5	2
TL-HSM0802	338.6	103.5	8.2	9.3	13.8	2
TL-HSM0804	331.6	107.5	139.5	23.5	4.8	1
TL-HSM0810	331.6	107	140	10	16	0.28
TL-HSM1206	331.6	107.6	140	10	16	0.5

### Carrier Tape Dimensions(mm)

Part No.	P1	A0	B0	W	K0	Packing Quantity(K)
TL-HSM0402	6.30	5.35	7.20	11.30	1.80	2
TL-HSM0802	17.35	10.30	13.20	21.50	3.20	2
TL-HSM0804	13.00	10.00	13.60	24.00	5.00	1
TL-HSM0810	20.10	13.00	15.70	24.00	12.00	0.28
TL-HSM1206	20.00	15.80	19.80	32.00	6.50	0.5