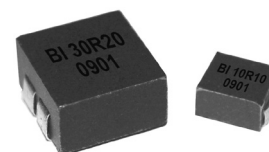


## Electrical / Environmental

- Operating Temperature Range -40°C to +125°C
- Temperature Rise, Maximum 40°C
- Operating Frequency Up to 3MHz

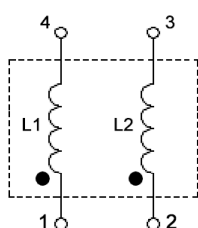
# HM69D

Surface Mount Power Bead Coupled Inductors

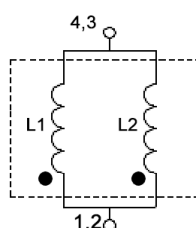


## Schematics

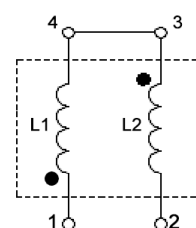
Independent Inductors



Parallel Inductors



Series Inductors



## Specifications @ 25°C

### Dual Phase Integrated Inductor Specifications (Multi-Phase System<sup>(1)</sup>)

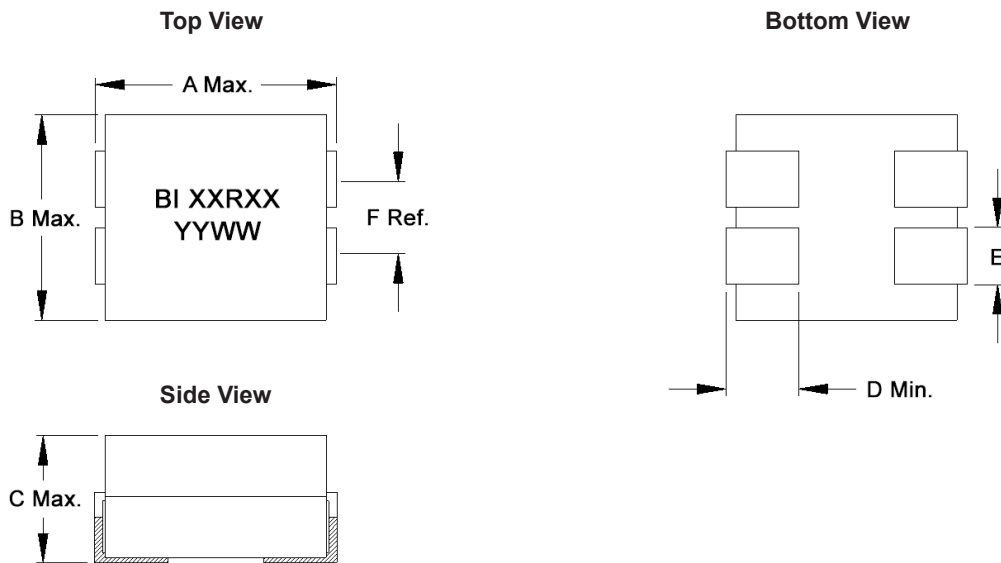
Part Number	Inductance 100kHz, 0.1V				DCR <sup>(2)</sup> (mΩ Typ.)		I <sub>rated</sub> <sup>(3)</sup> @ 25°C (A <sub>dc</sub> )		I <sub>sat</sub> <sup>(4)</sup> @ 25°C (A <sub>dc</sub> )		Heating <sup>(5)</sup> Current (A <sub>dc</sub> )	
	@ 0 A <sub>dc</sub> (nH ± 20%)		@ I <sub>rated</sub> (nH ± 20%)		L1	L2	L1	L2	L1	L2	L1	L2
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
HM69D-10R10LF	100	100	90	90	0.67	0.67	35	35	37	37	20	20
HM69D-30R20LF	200	200	180	180	0.43	0.43	24	24	27	27	44	44
HM69D-30R23LF	230	230	207	207	0.43	0.43	22	22	25	25	44	44
HM69D-30R33LF	330	330	297	297	0.43	0.43	17	17	19	19	44	44

### Single Phase Inductor Specifications (Parallel & Series Connections<sup>(1)</sup>)

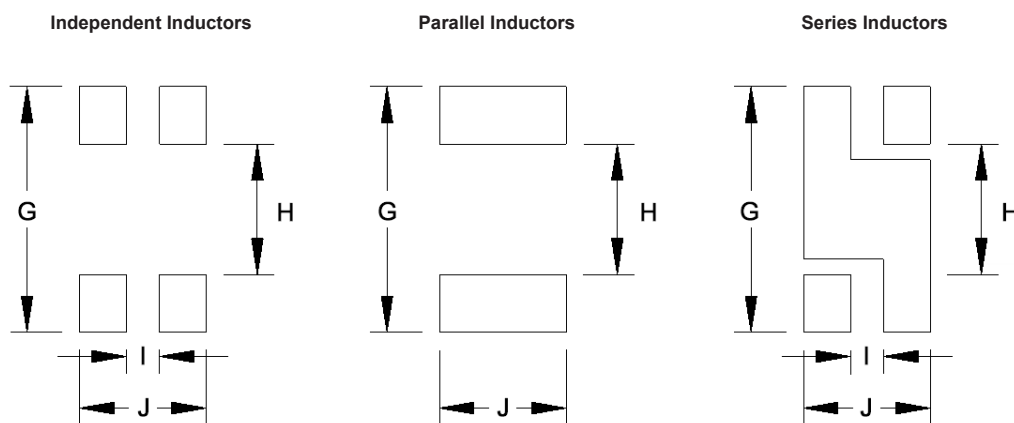
Part Number	Inductance 100kHz, 0.1V		DCR <sup>(2)</sup> (mΩ Typ.)	I <sub>rated</sub> <sup>(3)</sup> @ 25°C (A <sub>dc</sub> )	I <sub>sat</sub> <sup>(4)</sup> @ 25°C (A <sub>dc</sub> )	Heating <sup>(5)</sup> Current (A <sub>dc</sub> )	Connection
	@ 0 A <sub>dc</sub> (nH ± 20%)	@ I <sub>rated</sub> (nH ± 20%)					
HM69D-10R10LF	50	45	0.34	60	62	28	Parallel
HM69D-30R20LF	100	90	0.22	95	105	62	
HM69D-30R23LF	115	103	0.22	81	90	62	
HM69D-30R33LF	165	148	0.22	67	72	62	
HM69D-10R10LF	200	180	1.35	32	34	14	Series
HM69D-30R20LF	400	360	0.90	44	50	30	
HM69D-30R23LF	460	414	0.90	42	47	30	
HM69D-30R33LF	660	594	0.90	36	40	30	

- Notes: (1) The HM69D consists of two separate and independent inductors integrated into a single package. The two inductors can be used for two separate phases within dual output or multi-phase application or they can be connected in series or parallel to form a single inductor within a single phase application.
- (2) The normal DC resistance has a tolerance of  $\pm 9\%$ . This tolerance is guaranteed by design but is not a manufacturing production test. For production test, a maximum DC resistance value is used.
- (3) The rated current is the current which causes the inductance to drop a maximum of 10% from the nominal inductance @0A at the stated ambient temperature of 25°C. This current is determined by applying a short duration pulse current (to avoid self-heating effects) to the device.
- (4) The saturation current is the current which causes the inductance to drop a maximum of 30% from the nominal inductance @0A at the stated ambient temperature of 25°C. This current is determined by applying a short duration pulse current (to avoid self-heating effects) to the device.
- (5) The heating current to the DC current which causes the component temperature to increase by approximately 40°C. This current is determined by soldering the component on a typical application PCB, and then applying the current to the device for 30 minutes.

### Outline Dimensions (mm)



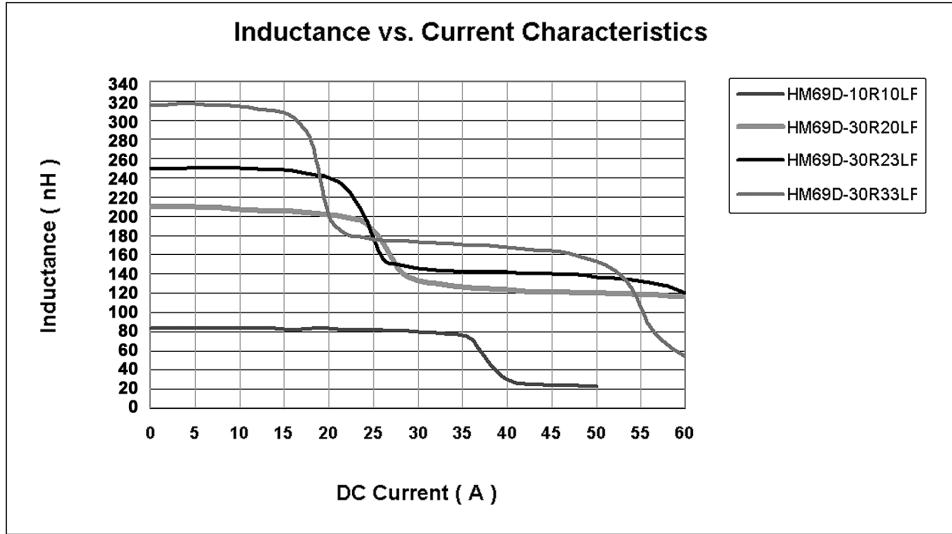
### Recommended Solder Pad Layout



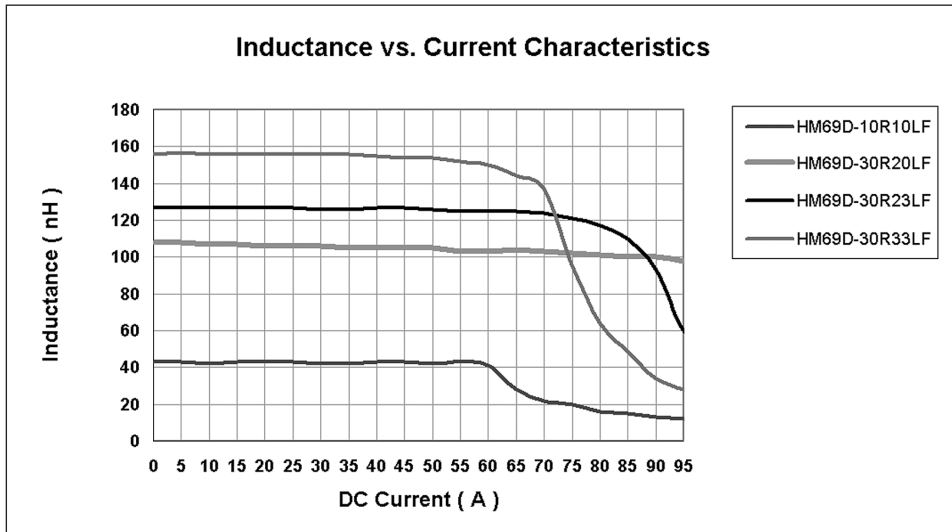
Case Size	A	B	C	D	E	F	G	H	I	J
10	8.20	6.80	4.50	2.50	1.27	2.65	8.80	4.20	1.00	4.00
30	14.00	13.20	7.00	2.50	2.80	4.15	14.60	7.50	2.00	8.00

## Electrical Characteristics @ 25°C

### (A) Two Independent Inductors

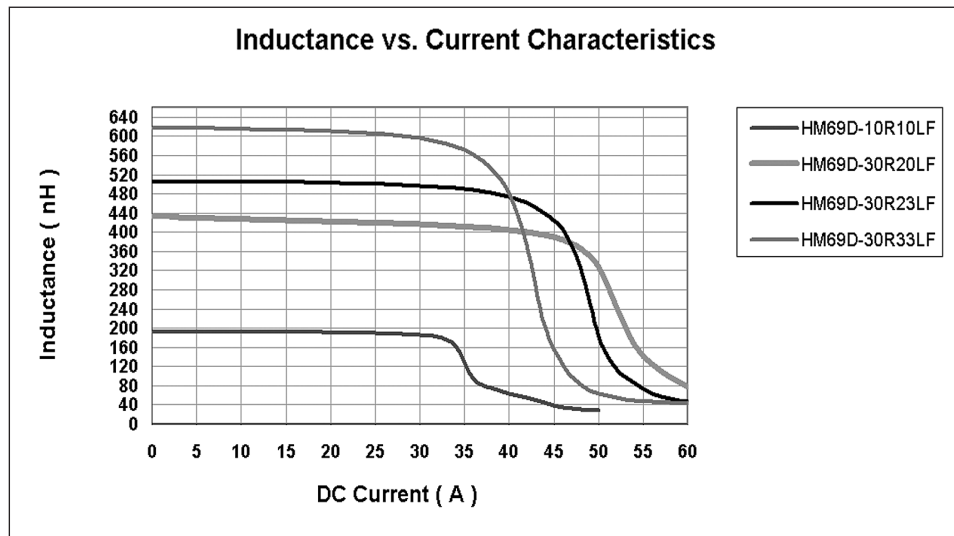


### (B) Single Inductor Parallel Connection



## Electrical Characteristics @ 25°C (Cont'd)

### (C) Single Inductor Series Connection



## Packaging

**Standard:** Embossed Tape & Reel

Reel:	Diameter:	=	13" (330.2mm)
	Capacity:	Case size 10	= 1000 Units
		Case size 30	= 400 Units

## Ordering Information

