

## Electrical / Environmental

- Operating Temperature Range -40°C to +180°C
- Temperature Rise, Maximum 50°C
- Operating Frequency Up to 400kHz

# HM70

High Power Shielded Low Profile  
Surface Mount Inductors



## Specifications

Part Number	Inductance 100kHz, 0.1V			DCR <sup>(1)</sup> (mΩ)		I <sub>sat</sub> <sup>(2)</sup> @ 25°C (Adc)	Heating <sup>(3)</sup> Current (Adc) ΔT=50°C	Core Loss <sup>(4)</sup> Factor		Fig.
	@ 0 Adc (μH ± 20%) Typ.	@ I <sub>sat</sub> (μH) Min.	@ I <sub>sat</sub> (μH) Typ.	Typ.	Max.			K1	K2	
HM70-101R0LF	1.00	0.63	0.70	2.53	2.90	16	15	9.07E-11	170.67	1
HM70-201R3LF	1.33	0.93	1.16	3.38	3.74	16	13	1.24E-10	157.15	1
HM70-201R9LF	1.94	1.28	1.60	4.71	5.42	12	11	1.24E-10	189.83	1
HM70-25R80LF	0.83	0.488	0.61	1.75	2.01	18	19	1.51E-10	118.84	1
HM70-301R5LF	1.50	0.80	1.00	2.16	2.48	16	17	1.40E-10	183.07	1
HM70-302R0LF	2.10	1.12	1.40	3.48	4.00	12	14	1.53E-10	196.09	1
HM70-31R65LF	0.65	0.48	0.54	1.80	2.50	16	19	1.53E-10	60.69	1
HM70-311R0LF	1.00	0.60	0.90	2.16	2.48	16	17	1.53E-10	93.38	1
HM70-321R3LF	1.30	0.80	1.00	2.16	2.48	16	17	1.66E-10	140.35	1
HM70-33R75LF	0.75	0.50	0.61	1.40	1.50	16	22	1.53E-10	70.03	1
HM70-341R3LF	1.30	0.80	1.00	2.16	2.48	20	18	1.53E-10	121.39	1
HM70-351R5LF	1.50	0.97	1.20	4.00	4.50	18	13	1.35E-10	166.20	2
HM70-401R2LF	1.20	0.92	1.02	1.75	1.80	18	22	1.80E-10	129.45	2
HM70-401R6LF	1.60	1.15	1.44	2.13	2.36	20	20	1.67E-10	151.67	2
HM70-431R9LF	1.90	1.50	1.70	2.00	2.20	15	20	1.67E-10	172.04	2
HM70-455R6LF	5.60	4.45	5.00	5.00	6.00	8	13	1.67E-10	507.07	2
HM70-50R70LF	0.70	0.40	0.52	1.05	1.26	30	31	1.99E-10	88.15	2
HM70-501R2LF	1.20	0.80	0.90	1.68	2.00	24	25	1.99E-10	110.82	2
HM70-505R0LF	5.00	3.60	4.30	6.50	8.00	7	13	2.21E-10	219.63	2
HM70-50100LF	10.0	6.80	8.00	12.0	15.0	7	9	2.21E-10	316.67	2
HM70-601R2LF	1.20	0.80	1.00	1.37	1.58	20	28	2.21E-10	108.94	2
HM70-602R0LF	2.00	1.20	1.60	2.20	2.60	15	22	2.21E-10	143.34	2

Notes: (1) DC resistance is measured at 25°C.

(2) The saturation current (I<sub>sat</sub>) is the current at which the inductance will be decreased by 20% from its initial (zero DC) value.

(3) The heating current is the DC current, which causes the component temperature to increase by approximately 50°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.

(4) Core Loss approximation is based on published core data:

$$\text{Core Loss (Pfe)} = K1 * (f)^{1.338} * (K2\Delta I)^{2.2546}$$

Where: core loss in watt

K1 and K2 = core loss factor

K2ΔI = one half of the peak to peak flux density across the component in Gauss

f = frequency in kHz

ΔI = delta I across the component in Amp.

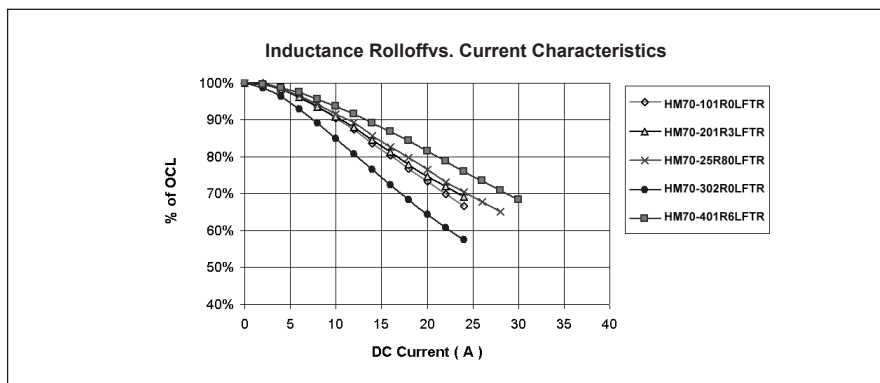
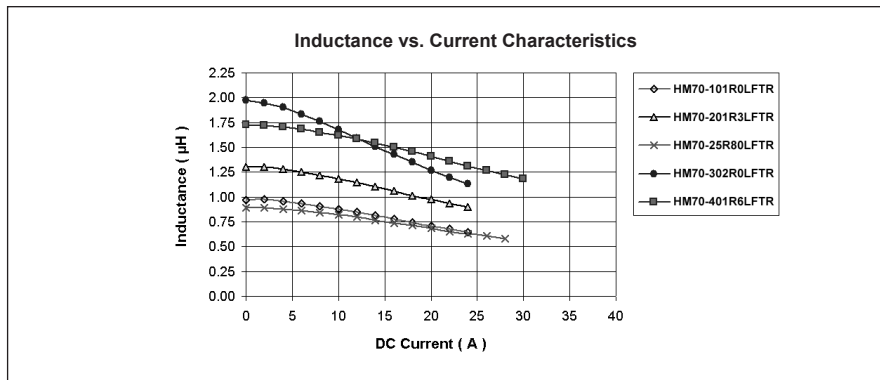
## Packaging

**Standard:** Embossed Tape & Reel

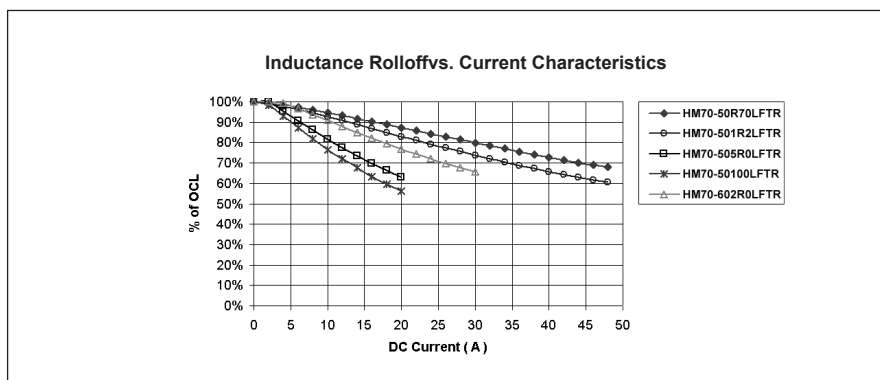
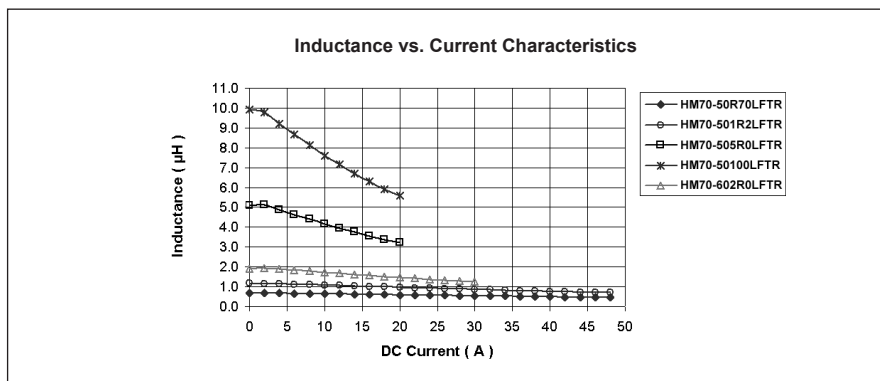
Reel:	Diameter:	=	13" (330.2mm)
	Capacity:	Case size 10,20,25,30,31,32,33,34	= 500 Units
		Case size 35,40,43,45,50,60	= 400 Units

## Electrical Characteristics @ 25°C

### (A) Case size 10, 20, 25, 30 & 40



### (B) Case size 50 & 60



## Outline Dimensions (mm)

Figure 1

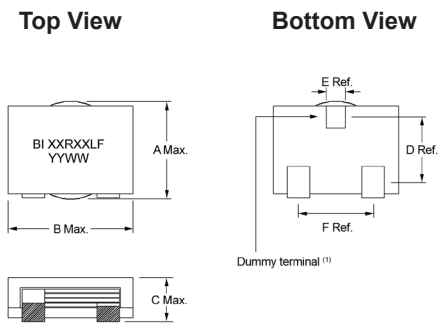
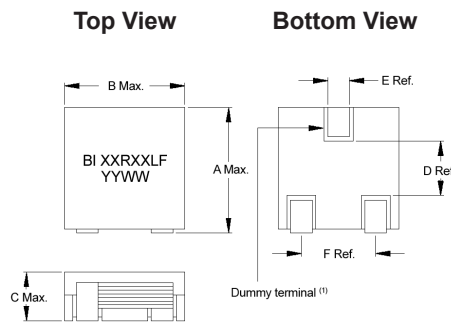
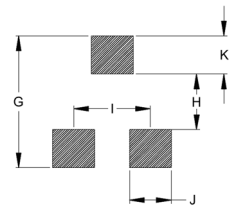


Figure 2



Recommended Solder Pad Layout



Note: (1) Dummy terminal should not be used for any electrical connection.

Case size	A	B	C	D	E	F	G	H	I	J	K
10	9.00	10.5	3.70	4.80	1.70	6.00	8.30	2.30	6.00	2.80	3.00
20	9.00	10.5	4.50	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
25	9.00	10.5	5.00	4.80	1.70	6.00	8.30	2.30	6.00	2.80	3.00
30	9.00	10.5	5.35	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
31	9.00	10.5	5.40	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
32	9.00	10.5	5.60	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
33	9.00	10.5	5.70	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
34	9.00	10.5	5.80	4.80	1.70	6.00	8.00	2.00	6.00	2.80	3.00
35	10.7	10.25	4.20	5.60	1.70	6.00	10.60	5.60	6.20	2.10	2.50
40	11.0	12.6	5.20	6.20	2.30	7.50	10.70	3.70	7.50	3.10	3.50
43	10.1	12.5	5.75	4.77	2.30	7.32	10.31	4.17	7.32	2.95	2.84
45	10.1	12.5	6.60	4.60	2.30	7.32	10.31	4.00	7.32	2.74	3.15
50	13.5	12.9	5.50	6.50	2.30	7.50	13.50	6.50	7.50	3.00	3.50
60	14.0	13.0	5.80	6.50	2.30	7.50	14.00	6.50	7.50	3.00	3.50

## Ordering Information



Inductance Code:  
 First 2 digits are significant.  
 Last digit denotes the number  
 of trailing zeros. For values  
 below 10 $\mu$ H, "R" denotes the  
 decimal point.