Electrical / Environmental

HM69

High Current Low Profile Surface Mount Inductors

RoHS Compliant for 'LF' Models

- Operating Temperature Range -40°C to +125°C
- Temperature Rise, Maximum 40°C
- Ambient Temperature, Maximum 80°C
- Insulation System Class F, 155°C

Specifications

Part Number	Inductance 100kHz, 0.1V @ 0 Adc (nH±20%) Typ.	Inductance @ I_{rated} (nH) Min.	Inductance @ I_{rated} (nH) Typ.	DCR (1) (mΩ) Typ.	DCR (1) (mΩ) Max.	I_{rated} (2) @ 25°C (Adc)	Heating Current (3) (A)	Core Loss (4) Factor K1	Core Loss (4) Factor K2
HM69-10R025	25	18	25	0.27	0.33	42	22	3.847E-14	59.444
HM69-20R050	50	28	36	0.20	0.24	70	35	1.074E-13	50.117
HM69-30R070	70	50	67	0.40	0.48	46	25	1.074E-13	70.164
HM69-40R10	100	60	75	0.31	0.39	28	25	7.124E-14	156.891
HM69-50R10	100	72	95	0.40	0.48	29	24	8.733E-14	127.990
HM69-50R15	150	96	120	0.40	0.48	18	24	8.733E-14	191.986
HM69-55R10	100	64	80	0.45	0.56	45	25	1.337E-13	96.541
HM69-55R20	200	140	175	0.45	0.56	21	25	1.337E-13	160.902
HM69-60R10	100	69	87	0.42	0.50	68	31	2.311E-13	52.336
HM69-60R15	150	104	130	0.42	0.50	48	31	2.311E-13	78.503
HM69-60R20	200	144	180	0.42	0.50	31	31	2.311E-13	104.671
HM69-70R30	300	200	250	0.17	0.20	37	70	6.784E-13	98.921
HM69-75R20	200	150	175	0.40	0.50	20	40	3.559E-13	134.203
HM69-80R30	300	216	285	0.17	0.25	40	76	9.107E-13	72.674

Notes:
(1) DC resistance is measured at 25°C.
(2) The rated current (I_{rated}) 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 40°C. This current is determined by soldering the component on a typical application PCB, and then apply the device for 30 minutes.
(4) Core Loss approximation is based on published core data:

$$\text{Core Loss} = K1 * (f)^{1.77} * (K2\Delta I)^{2.21}$$

Where: core loss in watt; f = switching frequency in kHz
K1 and K2 = core loss factor; ΔI = delta I across the component in Amp.
K2ΔI = one half of the peak to peak flux density across the component in Gauss

Packaging

Standard: Embossed Tape & Reel

Reel:	Diameter:	=	13" (330.2mm)
	Capacity: Case size 10,40	=	1000 Units
	Case size 20,30,60	=	800 Units
	Case size 50,55,75	=	500 Units
	Case size 70,80	=	350 Units

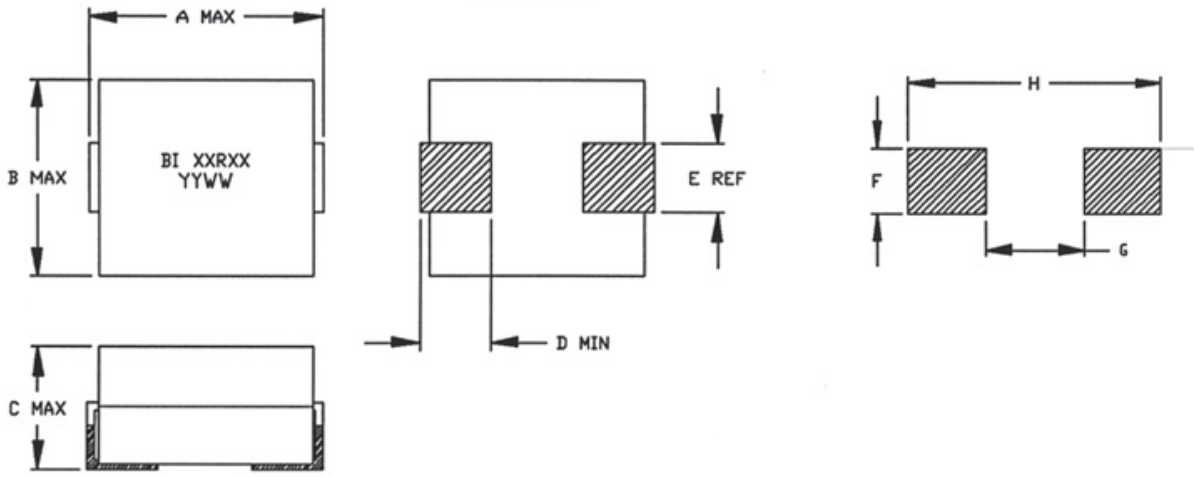
Ordering Information

HM69 50 R10 LF TR

- HM69 — Model Series
- 50 — Case Size
- R10 — Inductance Code:
  - First 2 digits are significant.
  - Last digit denotes the number of trailing zeros.
  - For values below 10µH, "R" denotes the decimal point.
- LF — Lead-Free Option
  - LF = Lead-Free
  - (No code used for non lead-free part)
- TR — Tape & Reel Packing

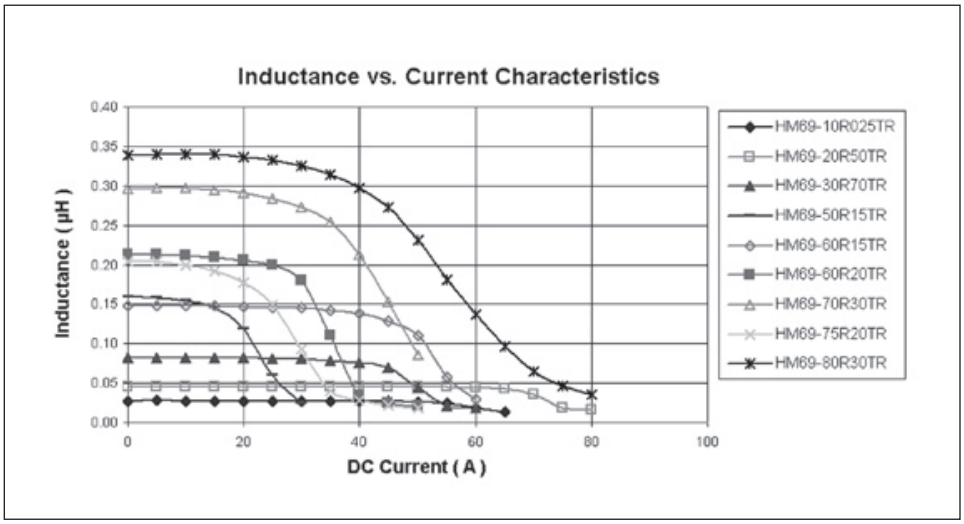
Outline Dimensions (mm)

Top View **Bottom View** **Recommended Solder Pad Layout**



Case size	A	B	C	D	E	F	G	H
10	6.00	5.00	3.00	1.50	1.50	1.60	2.50	7.20
20	7.50	6.50	5.00	1.50	2.95	3.00	2.40	8.00
30	7.00	7.00	5.00	2.50	2.30	2.50	1.00	7.00
40	7.01	6.35	3.30	1.50	2.85	3.20	2.50	7.50
50	8.60	6.30	3.30	1.50	2.85	3.20	2.50	9.00
55	8.60	6.30	4.80	1.50	2.85	3.20	2.50	9.00
60	10.2	7.00	5.10	1.00	2.50	2.80	5.50	10.5
70	13.5	13.0	6.80	1.00	5.00	5.30	5.50	13.5
75	13.5	13.0	3.50	2.00	2.50	3.20	7.00	13.5
80	13.8	13.0	8.20	2.00	5.00	5.30	5.50	13.8

Electrical Characteristics @ 25 °C



Electrical Characteristics @ 25 °C (Cont'd)