

Shielded Surface Mount Inductors

Model HM78



Features:

- Operating temperature range -40°C to $+125^{\circ}\text{C}$
- Temperature rise, maximum 40°C
- Operating frequency up to 3MHz
- RoHS compliant

Specifications at 25°C

Part Number	Inductance $\mu\text{H} \pm 20\%$	DC resistance Ω max.	Rated current amps	Figure
HM78-10100LF	10	0.080	1.00	1
HM78-10120LF	12	0.090	0.94	1
HM78-10150LF	15	0.120	0.86	1
HM78-10180LF	18	0.130	0.78	1
HM78-10220LF	22	0.150	0.76	1
HM78-10270LF	27	0.210	0.64	1
HM78-10330LF	33	0.250	0.61	1
HM78-10390LF	39	0.310	0.53	1
HM78-10470LF	47	0.350	0.50	1
HM78-10560LF	56	0.430	0.46	1
HM78-10680LF	68	0.520	0.42	1
HM78-20100LF	10	0.055	1.65	1
HM78-20120LF	12	0.073	1.50	1
HM78-20150LF	15	0.081	1.34	1
HM78-20180LF	18	0.102	1.22	1
HM78-20220LF	22	0.115	1.10	1
HM78-20270LF	27	0.159	1.00	1
HM78-20330LF	33	0.182	0.90	1
HM78-20390LF	39	0.199	0.83	1
HM78-20470LF	47	0.221	0.75	1
HM78-20560LF	56	0.306	0.69	1
HM78-20680LF	68	0.345	0.63	1

General Note

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HM78-20820LF	82	0.390	0.57	1
HM78-20101LF	100	0.432	0.52	1
HM78-20121LF	120	0.440	0.47	1
HM78-20151LF	150	0.730	0.42	1
HM78-20181LF	180	0.780	0.38	1
HM78-20221LF	220	0.940	0.35	1
HM78-20271LF	270	1.250	0.31	1
HM78-30100LF	10	0.072	1.68	2
HM78-30120LF	12	0.098	1.52	2
HM78-30150LF	15	0.130	1.33	2
HM78-30180LF	18	0.140	1.20	2
HM78-30220LF	22	0.190	1.07	2
HM78-30270LF	27	0.210	0.96	2
HM78-30330LF	33	0.240	0.91	2
HM78-30390LF	39	0.320	0.77	2
HM78-30470LF	47	0.360	0.76	2
HM78-30560LF	56	0.470	0.68	2
HM78-30680LF	68	0.520	0.61	2
HM78-30820LF	82	0.690	0.57	2
HM78-30101LF	100	0.790	0.50	2
HM78-30121LF	120	0.890	0.49	2
HM78-30151LF	150	1.270	0.43	2
HM78-30181LF	180	1.450	0.39	2
HM78-30221LF	220	1.650	0.35	2
HM78-30271LF	270	2.310	0.32	2
HM78-30331LF	330	2.620	0.28	2
HM78-30391LF	390	2.940	0.26	2
HM78-30471LF	470	4.180	0.24	2
HM78-30102LF	1000	6.500	0.16	2

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Part Number	Inductance $\mu\text{H} \pm 20\%$	DC resistance Ω max.	Rated current amps	Figure
HM78-402R2LF	2.2	0.027	3.20	2
HM78-403R3LF	3.3	0.026	3.94	2
HM78-40100LF	10	0.055	2.00	2
HM78-40120LF	12	0.058	1.71	2
HM78-40150LF	15	0.081	1.47	2
HM78-40180LF	18	0.091	1.31	2
HM78-40220LF	22	0.110	1.23	2
HM78-40270LF	27	0.150	1.12	2
HM78-40330LF	33	0.170	1.00	2
HM78-40390LF	39	0.230	0.91	2
HM78-40470LF	47	0.260	0.88	2
HM78-40560LF	56	0.350	0.75	2
HM78-40680LF	68	0.380	0.69	2
HM78-40820LF	82	0.430	0.61	2
HM78-40101LF	100	0.610	0.60	2
HM78-40121LF	120	0.660	0.52	2
HM78-40151LF	150	0.880	0.46	2
HM78-40181LF	180	0.980	0.42	2
HM78-40221LF	220	1.170	0.36	2
HM78-40271LF	270	1.640	0.24	2
HM78-40331LF	330	1.860	0.32	2
HM78-40391LF	390	2.850	0.29	2
HM78-40471LF	470	3.010	0.26	2
HM78-40561LF	560	3.620	0.23	2
HM78-40681LF	680	4.630	0.22	2
HM78-40821LF	820	5.200	0.20	3
HM78-453R9LF	3.9	0.015	6.50	3
HM78-454R7LF	4.7	0.018	5.70	3
HM78-456R8LF	6.8	0.023	4.90	3

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Part Number	Inductance $\mu\text{H} \pm 20\%$	DC resistance Ω max.	Rated current amps	Figure
HM78-45100LF	10	0.028	4.50	3
HM78-45120LF	12	0.038	4.00	3
HM78-45150LF	15	0.050	3.20	3
HM78-45180LF	18	0.057	3.10	3
HM78-45220LF	22	0.066	2.90	3
HM78-45270LF	27	0.080	2.80	3
HM78-45330LF	33	0.097	2.70	3
HM78-45390LF	39	0.132	2.10	3
HM78-45470LF	47	0.150	1.90	3
HM78-45560LF	56	0.190	1.80	3
HM78-45680LF	68	0.220	1.50	3
HM78-45820LF	82	0.260	1.30	3
HM78-45101LF	100	0.308	1.20	3
HM78-45121LF	120	0.380	1.10	3
HM78-45151LF	150	0.530	0.95	3
HM78-45181LF	180	0.620	0.85	3
HM78-45221LF	220	0.700	0.80	3
HM78-45271LF	270	0.876	0.60	3
HM78-45331LF	330	0.990	0.50	3
HM78-501R5LF	1.5 $\pm 25\%$	0.012	13.00	3
HM78-502R2LF	2.2 $\pm 25\%$	0.014	7.00	3
HM78-503R1LF	3.1 $\pm 25\%$	0.017	6.00	3
HM78-504R4LF	4.4 $\pm 25\%$	0.020	5.00	3
HM78-505R2LF	5.2 $\pm 25\%$	0.021	4.40	3
HM78-507R5LF	7.5 $\pm 25\%$	0.024	4.20	3
HM78-50100LF	10	0.025	4.00	3
HM78-50120LF	12	0.027	3.50	3
HM78-50150LF	15	0.030	3.30	3
HM78-50180LF	18	0.034	3.00	3

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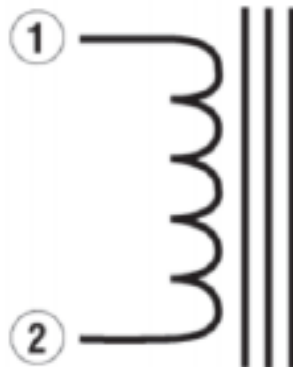


Specifications at 25° C

Part Number	Inductance $\mu\text{H} \pm 20\%$	DC resistance Ω max.	Rated current amps	Figure
HM78-605R6LF	5.6 $\pm 30\%$	0.018	6.60	3
HM78-607R6LF	7.6 $\pm 30\%$	0.020	5.90	3
HM78-60100LF	10	0.022	5.40	3
HM78-60120LF	12	0.025	4.90	3
HM78-60150LF	15	0.027	4.50	3
HM78-60180LF	18	0.039	3.90	3
HM78-60220LF	22	0.043	3.60	3
HM78-60270LF	27	0.046	3.40	3
HM78-60330LF	33	0.065	3.00	3
HM78-60390LF	39	0.073	2.75	3
HM78-60470LF	47	0.085	2.50	3
HM78-60101LF	100	0.220	1.70	3
HM78-60221LF	220	0.370	1.20	3
HM78-60271LF	270	0.560	1.06	3

- Notes: 1) Inductance is measured at 1.0kHz without DC current.
2) Rated DC current is the approximate current at which inductance will be decreased by 10% from its initial (zero DC) value or the DC current at which $\Delta T = 40^\circ\text{C}$, whichever is lower.

Schematic



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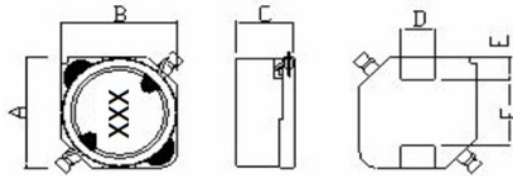
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Outline Dimensions (inch/mm)

FIGURE 1 (CASE 10, 20)



Recommended Solder Pad Layout

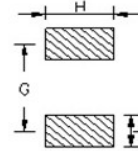
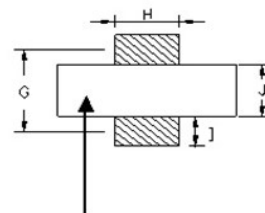
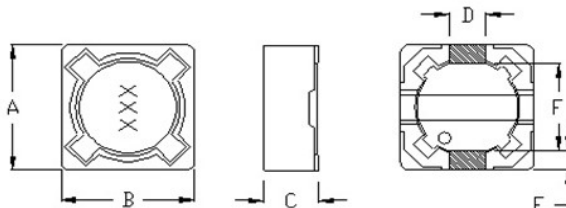


FIGURE 2 (CASE 30, 40)



Solder Mask

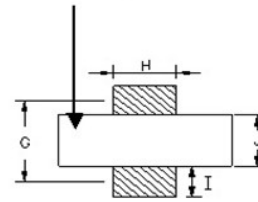
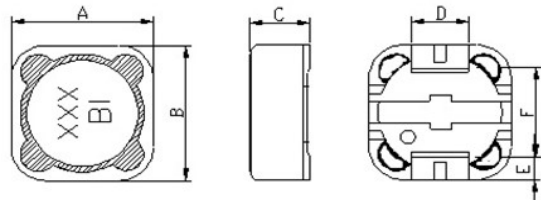


FIGURE 3 (CASE 45, 50, 60)



Case Size	Figure	A (Max)	B (Max)	C (Max)	D	E	F	G	H	I	J
10	1	<u>.291</u> 7.40	<u>.291</u> 7.40	<u>.150</u> 3.80	<u>.079</u> 2.00	<u>.035</u> 0.85	<u>.220</u> 5.60	<u>.256</u> 6.50	<u>.118</u> 3.00	<u>.075</u> 1.91	-
20	1	<u>.291</u> 7.40	<u>.291</u> 7.40	<u>.205</u> 5.20	<u>.079</u> 2.00	<u>.035</u> 0.85	<u>.220</u> 5.60	<u>.256</u> 6.50	<u>.118</u> 3.00	<u>.075</u> 1.91	-
30	2	<u>.295</u> 7.50	<u>.295</u> 7.50	<u>.138</u> 3.50	<u>.079</u> 2.00	<u>.055</u> 1.40	<u>.173</u> 4.40	<u>.248</u> 6.30	<u>.118</u> 3.00	<u>.075</u> 1.91	<u>.177</u> 4.50
40	2	<u>.295</u> 7.50	<u>.295</u> 7.50	<u>.177</u> 4.50	<u>.079</u> 2.00	<u>.043</u> 1.10	<u>.200</u> 5.08	<u>.248</u> 6.30	<u>.118</u> 3.00	<u>.075</u> 1.91	<u>.177</u> 4.50
45	3	<u>.492</u> 12.5	<u>.492</u> 12.5	<u>.177</u> 4.50	<u>.197</u> 5.00	<u>.079</u> 2.00	<u>.299</u> 7.60	<u>.394</u> 10.0	<u>.236</u> 6.00	<u>.118</u> 3.0	<u>.276</u> 7.00
50	3	<u>.492</u> 12.5	<u>.492</u> 12.5	<u>.244</u> 6.20	<u>.193</u> 4.90	<u>.079</u> 2.00	<u>.297</u> 7.55	<u>.394</u> 10.0	<u>.236</u> 6.00	<u>.118</u> 3.0	<u>.276</u> 7.00
60	3	<u>.492</u> 12.5	<u>.492</u> 12.5	<u>.315</u> 8.00	<u>.193</u> 4.90	<u>.079</u> 2.00	<u>.297</u> 7.55	<u>.394</u> 10.0	<u>.236</u> 6.00	<u>.118</u> 3.0	<u>.276</u> 7.00

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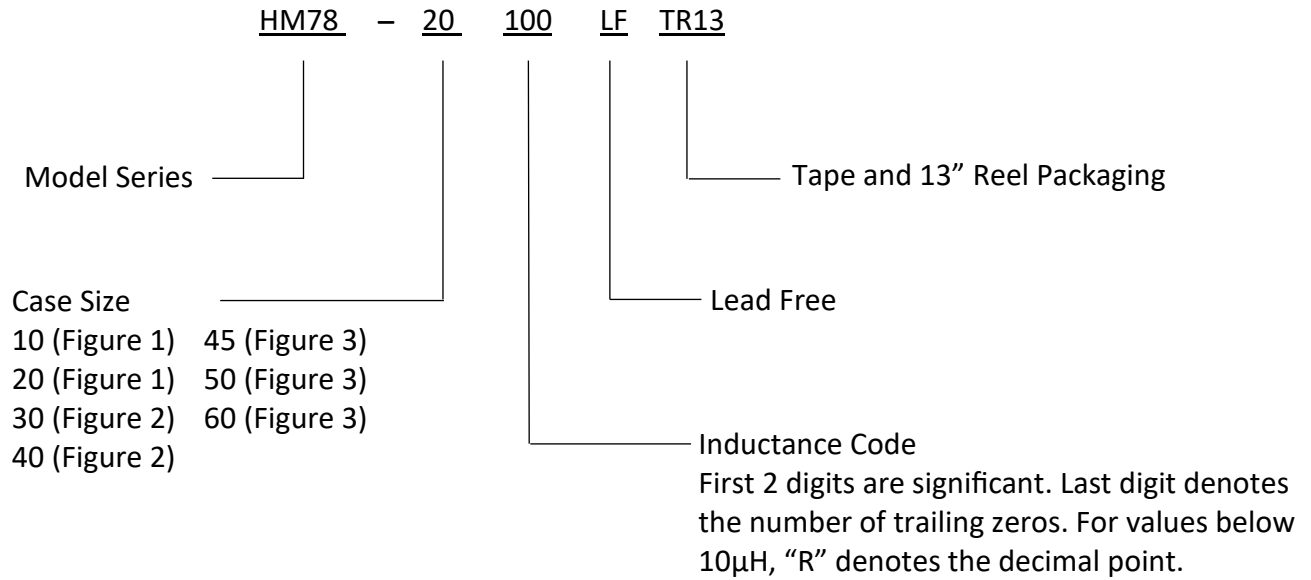
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Ordering Information



Packaging

Standard	Embossed Tape and Reel	
	Reel:	Diameter: = 13" (330.2mm)
	Capacity:	Case size 10, 30, 40 = 1,000 units
		Case size 20, 45, 50, 60 = 500 Units

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