

# MODEL HM78 SERIES

## Shielded Surface Mount Inductors

NEW PRODUCT



### FEATURES AND BENEFITS

- Magnetic shielded construction for high density board assembly
- High performance, low loss ferrite core is excellent for high frequency applications
- Low profile designed for machine placement
- 10 $\mu$ H to 1,000 $\mu$ H inductance range
- Up to 12 amps continuous
- Compatible with vapor phase and infrared reflow soldering
- Two styles available
- Custom designs available

### APPLICATIONS

- Laptop and notebook computers, PDAs
- DC/DC converter in distributed power system and hand held equipment
- Inductor for general purpose

### ELECTRICAL / ENVIRONMENTAL

Operating Temperature Range	-25°C to +125°C
Storage Temperature Range	-40°C to +85°C
Ambient Temperature, Maximum	80°C
Insulation System	Class B, 130°C
Temperature Rise, Maximum	40°C

Specifications subject to change without notice.  
Last update: 05/01/02.

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**OUTLINE DIMENSIONS (Inch/mm)**

Figure 1

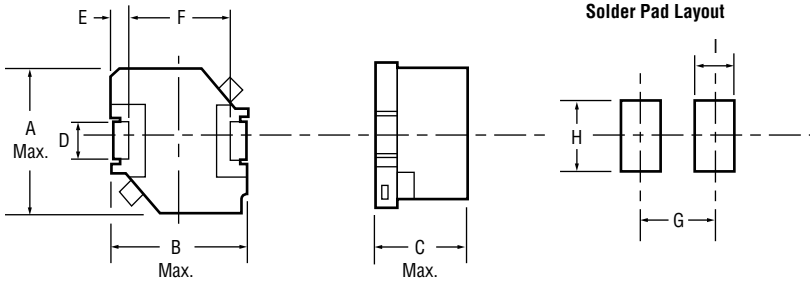


Figure 2

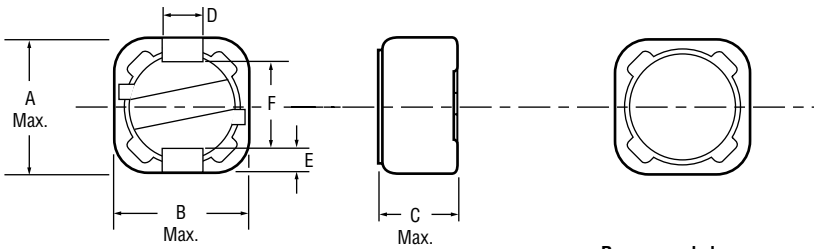
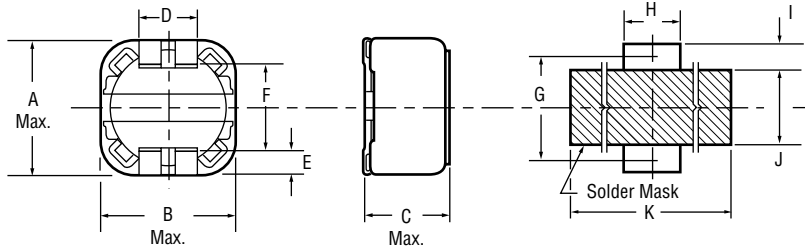


Figure 3



Case Size	Figure	A	B	C	D	E	F	G	H	I	J	K
10	1	.291	.291	.150	.079	.035	.220	.256	.118	.075	—	—
		7.40	7.40	3.80	2.00	0.85	5.60	6.50	3.00	1.91	—	—
20	1	.291	.291	.205	.079	0.35	.220	.256	.118	.075	—	—
		7.40	7.40	5.20	2.00	0.85	5.60	6.50	3.00	1.91	—	—
30	2	.295	.295	.138	.079	.043	.200	.248	.118	.075	.177	.413
		7.50	7.50	3.50	2.00	1.10	5.08	6.30	3.00	1.91	4.50	10.5
40	2	.295	.295	.177	.079	.043	.200	.248	.118	.075	.177	.413
		7.50	7.50	4.50	2.00	1.10	5.08	6.30	3.00	1.91	4.50	10.5
45	3	.492	.492	.177	.197	.079	.299	.394	.236	.118	.276	.710
		12.5	12.5	4.50	5.00	2.00	7.60	10.0	6.00	3.00	7.00	18.0
50	3	.492	.492	.244	.197	.079	.299	.394	.236	.118	.276	.710
		12.5	12.5	6.20	5.00	2.00	7.60	10.0	6.00	3.00	7.00	18.0
60	3	.492	.492	.315	.197	.079	.299	.394	.236	.118	.276	.710
		12.5	12.5	8.00	5.00	2.00	7.60	10.0	6.00	3.00	7.00	18.0

## SPECIFICATIONS

Part Number	Inductance $\mu\text{H} \pm 20\%$ (1)	DC Resistance $\Omega$ Max.	Rated Current Amps (2)	Figure
HM78-10100	10	0.14	1.00	1
HM78-10120	12	0.16	0.94	1
HM78-10150	15	0.18	0.86	1
HM78-10180	18	0.25	0.78	1
HM78-10220	22	0.32	0.76	1
HM78-10270	27	0.36	0.64	1
HM78-10330	33	0.41	0.61	1
HM78-10390	39	0.47	0.53	1
HM78-10470	47	0.51	0.50	1
HM78-10560	56	0.72	0.46	1
HM78-10680	68	0.82	0.42	1
HM78-20100	10	0.07	1.65	1
HM78-20120	12	0.08	1.50	1
HM78-20150	15	0.09	1.34	1
HM78-20180	18	0.11	1.22	1
HM78-20220	22	0.12	1.10	1
HM78-20270	27	0.17	1.00	1
HM78-20330	33	0.19	0.90	1
HM78-20390	39	0.21	0.83	1
HM78-20470	47	0.24	0.75	1
HM78-20560	56	0.32	0.69	1
HM78-20680	68	0.37	0.63	1
HM78-20820	82	0.40	0.57	1
HM78-20101	100	0.54	0.52	1
HM78-20121	120	0.62	0.47	1
HM78-20151	150	0.86	0.42	1
HM78-20181	180	0.97	0.38	1
HM78-20221	220	1.31	0.35	1
HM78-20271	270	1.46	0.31	1
<b>HM78-30100</b>	10	0.08	1.68	2
HM78-30120	12	0.11	1.52	2
HM78-30150	15	0.13	1.33	2
HM78-30180	18	0.15	1.20	2
<b>HM78-30220</b>	22	0.20	1.07	2
HM78-30270	27	0.22	0.96	2
<b>HM78-30330</b>	33	0.25	0.91	2

Notes: 1. Inductance 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.

3. Part numbers which appear in **bold** print are standard items and generally available from factory stock.

## SPECIFICATIONS

Part Number	Inductance $\mu\text{H} \pm 20\%$ (1)	DC Resistance $\Omega$ Max.	Rated Current Amps (2)	Figure
HM78-30390	39	0.34	0.77	2
HM78-30470	47	0.39	0.76	2
HM78-30560	56	0.50	0.68	2
HM78-30680	68	0.55	0.61	2
HM78-30820	82	0.74	0.57	2
<b>HM78-30101</b>	100	0.84	0.50	2
HM78-30121	120	0.96	0.49	2
HM78-30151	150	1.42	0.43	2
HM78-30181	180	1.62	0.39	2
<b>HM78-30221</b>	220	1.84	0.35	2
HM78-30271	270	2.59	0.32	2
HM78-30331	330	2.93	0.28	2
HM78-30391	390	3.29	0.26	2
HM78-30471	470	4.67	0.24	2
<b>HM78-40100</b>	10	0.059	1.84	2
HM78-40120	12	0.068	1.71	2
HM78-40150	15	0.081	1.47	2
HM78-40180	18	0.091	1.31	2
<b>HM78-40220</b>	22	0.11	1.23	2
HM78-40270	27	0.15	1.12	2
<b>HM78-40330</b>	33	0.17	0.96	2
HM78-40390	39	0.23	0.91	2
HM78-40470	47	0.26	0.88	2
HM78-40560	56	0.35	0.75	2
HM78-40680	68	0.38	0.69	2
HM78-40820	82	0.43	0.61	2
<b>HM78-40101</b>	100	0.61	0.60	2
HM78-40121	120	0.66	0.52	2
HM78-40151	150	0.88	0.46	2
HM78-40181	180	0.98	0.42	2
<b>HM78-40221</b>	220	1.17	0.36	2
HM78-40271	270	1.64	0.34	2
HM78-40331	330	1.86	0.32	2
HM78-40391	390	2.85	0.29	2
HM78-40471	470	3.01	0.26	2
HM78-40561	560	3.62	0.23	2
HM78-40681	680	4.63	0.22	2
HM78-40821	820	5.20	0.20	2
<b>HM78-453R9</b>	3.9	0.015	6.5	3
HM78-454R7	4.7	0.018	5.7	3
<b>HM78-456R8</b>	6.8	0.023	4.9	3

Notes: 1. Inductance 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.

3. Part numbers which appear in **bold** print are standard items and generally available from factory stock.

## SPECIFICATIONS

Part Number	Inductance $\mu\text{H} \pm 20\%$ <sup>(1)</sup>	DC Resistance $\Omega$ Max.	Rated Current Amps <sup>(2)</sup>	Figure
<b>HM78-45100</b>	10	0.028	4.5	3
HM78-45120	12	0.038	4.0	3
HM78-45150	15	0.050	3.2	3
HM78-45180	18	0.057	3.1	3
<b>HM78-45220</b>	22	0.066	2.9	3
HM78-45270	27	0.080	2.8	3
HM78-45330	33	0.097	2.7	3
HM78-45390	39	0.132	2.1	3
<b>HM78-45470</b>	47	0.150	1.9	3
HM78-45560	56	0.190	1.8	3
HM78-45680	68	0.220	1.5	3
HM78-45820	82	0.260	1.3	3
<b>HM78-45101</b>	100	0.308	1.2	3
HM78-45121	120	0.380	1.1	3
HM78-45151	150	0.530	0.95	3
HM78-45181	180	0.620	0.85	3
HM78-45221	220	0.700	0.80	3
HM78-45271	270	0.876	0.60	3
HM78-45331	330	0.990	0.50	3
<b>HM78-501R0</b>	1.0	0.0083	9.5	3
HM78-501R8	1.8	0.0087	8.0	3
<b>HM78-503R3</b>	3.3	0.0131	7.0	3
<b>HM78-504R5</b>	4.5	0.0154	6.0	3
HM78-507R0	7.0	0.0214	5.5	3
<b>HM78-50100</b>	10	0.025	4.0	3
HM78-50120	12	0.027	3.5	3
HM78-50150	15	0.030	3.3	3
HM78-50180	18	0.038	3.0	3
<b>HM78-50220</b>	22	0.045	2.8	3
HM78-50270	27	0.055	2.3	3
<b>HM78-50330</b>	33	0.063	2.1	3
HM78-50390	39	0.075	2.0	3
HM78-50470	47	0.085	1.8	3
HM78-50560	56	0.11	1.7	3
HM78-50680	68	0.12	1.5	3
HM78-50820	82	0.14	1.4	3
<b>HM78-50101</b>	100	0.165	1.3	3
HM78-50121	120	0.195	1.1	3
HM78-50151	150	0.25	1.0	3
HM78-50181	180	0.29	0.9	3
HM78-50221	220	0.40	0.8	3

Notes: 1. Inductance 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.

3. Part numbers which appear in **bold** print are standard items and generally available from factory stock.

## SPECIFICATIONS

Part Number	Inductance $\mu\text{H} \pm 20\%$ <sup>(1)</sup>	DC Resistance $\Omega$ Max.	Rated Current Amps <sup>(2)</sup>	Figure
HM78-50271	270	0.46	0.75	3
<b>HM78-50331</b>	330	0.51	0.68	3
HM78-50391	390	0.69	0.65	3
<b>HM78-50471</b>	470	0.77	0.58	3
HM78-50561	560	0.88	0.54	3
HM78-50681	680	1.20	0.48	3
HM78-50821	820	1.34	0.43	3
HM78-50102	1000	1.53	0.40	3
<b>HM78-601R4</b>	1.4	.0052	12.0	3
HM78-602R4	2.4	0.011	8.0	3
<b>HM78-604R7</b>	4.7	0.016	6.8	3
HM78-607R6	7.6	0.02	5.9	3
<b>HM78-60100</b>	10	0.022	5.4	3
HM78-60120	12	0.025	4.9	3
HM78-60150	15	0.027	4.5	3
HM78-60180	18	0.039	3.9	3
<b>HM78-60220</b>	22	0.043	3.6	3
HM78-60270	27	0.046	3.4	3
<b>HM78-60330</b>	33	0.065	3.0	3
HM78-60390	39	0.073	2.75	3
<b>HM78-60470</b>	47	0.10	2.5	3

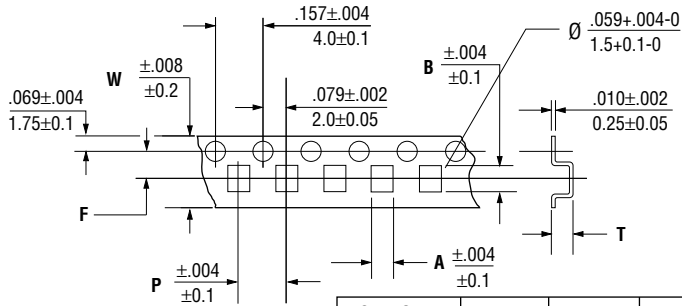
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 3. Part numbers which appear in **bold** print are standard items and generally available from factory stock.

## PACKAGING

**Standard:** Embossed Tape & Reel

Reel	Diameter	=	13" (330mm)
Capacity:	Case sizes 10, 20, 30, 40	=	1,000 Units
	Case sizes 45, 50, 60	=	500 Units

## TAPE AND REEL (Inch/mm)



Tape Material: Polystyrene

Case Size	A	B	F	W	P	T
10	<u>.299</u> 7.60	<u>.299</u> 7.60	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.473</u> 12.0	<u>.150</u> 3.80
20	<u>.299</u> 7.60	<u>.299</u> 7.60	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.473</u> 12.0	<u>.181</u> 4.60
30	<u>.299</u> 7.60	<u>.299</u> 7.60	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.473</u> 12.0	<u>.150</u> 3.80
40	<u>.299</u> 7.60	<u>.299</u> 7.60	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.473</u> 12.0	<u>.181</u> 4.60
45	<u>.512</u> 13.0	<u>.512</u> 13.0	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.630</u> 16.0	<u>.189</u> 4.80
50	<u>.512</u> 13.0	<u>.512</u> 13.0	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.630</u> 16.0	<u>.256</u> 6.50
60	<u>.512</u> 13.0	<u>.512</u> 13.0	<u>.453</u> 11.5	<u>.945</u> 24.0	<u>.630</u> 16.0	<u>.327</u> 8.30

## ORDERING INFORMATION

Model Series HM78 20 100  
 Case Size/Body Style:

10 = 1  
 20 = 1  
 30 = 2  
 40 = 2  
 45 = 3  
 50 = 3  
 60 = 3

Inductance Code:  
 1st two digits are significant.  
 Last digit denotes number  
 of trailing zeros.