

Power Inductors

HA78DM Series



Features:

- Operating temperature range -55°C to $+155^{\circ}\text{C}$
- Tight coupling factor, typically 99%
- Ambient temperature, 115°C Max.
- Temperature rise, 40°C
- Operating frequency up to 3MHz
- AEC-Q200 certified



Description:

The HA78DM series is a SMD coupling of two shielded, ferrite-based power inductors, designed to meet a tight coupling factor. Custom design is available for some special leakage inductance requests. This series offers inductance from $4.7\mu\text{H}$ to $470\mu\text{H}$, and rated current from 1.185A up to 7.559A. The series also has series and parallel connections. The HA78DM is available in 2 case sizes; 128 and 1210.

Applications:

- Common-mode choke
- DC/DC converter, especially for SEPIC topology
- 1:1 Transformer

General Note

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Electrical Specifications

Parallel connections

Part Number	Inductance ($\mu\text{H} \pm 20\%$ @0A)	DCR (Ω) Max	Isat (A) - max	Irms (A)- max
HA78DM-1284R7LFTR	4.7	19	14.9	7.4
HA78DM-1288R2LFTR	8.2	25	10.8	6.6
HA78DM-128100LFTR	10.0	29	10.5	6.2
HA78DM-128220LFTR	22.0	48	6.8	5.2
HA78DM-128270LFTR	27.0	60	6.5	4.7
HA78DM-128330LFTR	33.0	75	5.6	4.2
HA78DM-128470LFTR	47.0	90	5.2	3.0
HA78DM-128680LFTR	68.0	105	4.1	2.8
HA78DM-128101LFTR	100.0	150	3.4	2.0
HA78DM-12104R7LFTR	4.7	14	10.60	7.559
HA78DM-12106R8LFTR	6.8	17	10.40	6.860
HA78DM-1210100LFTR	10.0	20	8.60	6.325
HA78DM-1210220LFTR	22.0	40	5.40	4.472
HA78DM-1210330LFTR	33.0	50	4.50	4.000
HA78DM-1210470LFTR	47.0	65	3.70	3.508
HA78DM-1210680LFTR	68.0	98	2.95	2.857
HA78DM-1210101LFTR	100.0	128	2.54	2.500
HA78DM-1210121LFTR	120.0	170	2.38	2.169
HA78DM-1210471LFTR	470.0	570	1.22	1.185

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Electrical Specifications

Series connections

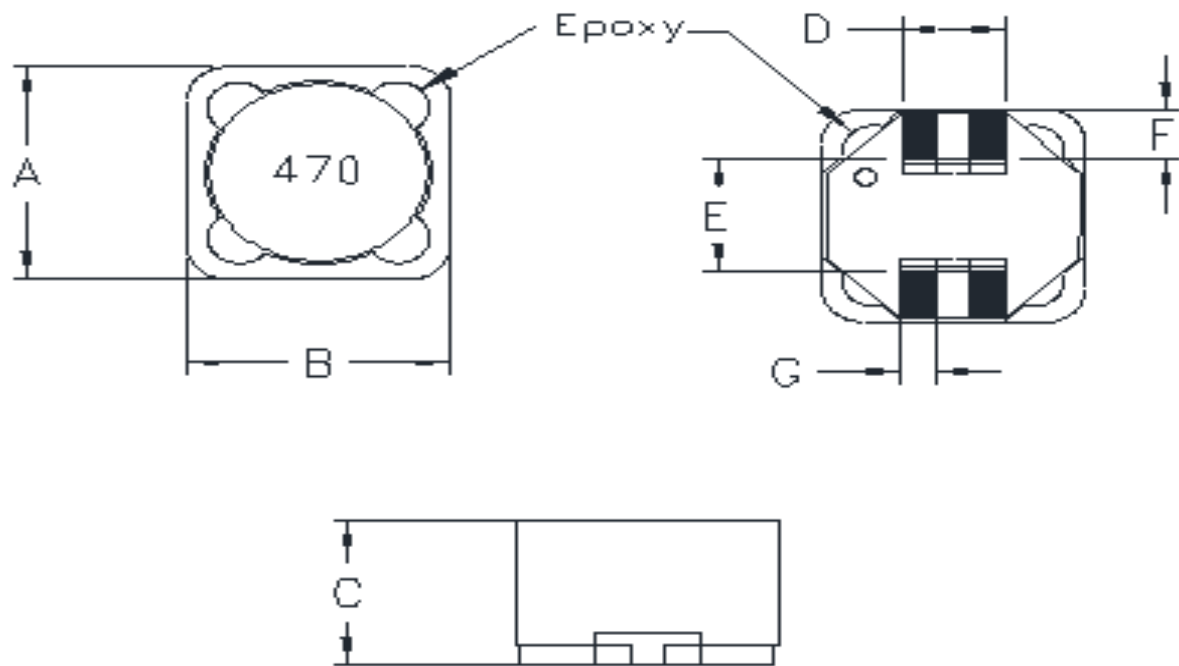
Part Number	Inductance ($\mu\text{H} \pm 20\%$ @0A)	DCR (Ω) Max	Isat (A) - max	Irms (A)- max
HA78DM-1284R7LFTR	18.8	76	7.7	3.6
HA78DM-1288R2LFTR	32.8	100	6.4	3.4
HA78DM-128100LFTR	40.0	116	5.4	3.2
HA78DM-128220LFTR	88.0	190	3.5	2.2
HA78DM-128270LFTR	108.0	240	3.4	2.0
HA78DM-128330LFTR	132.0	300	3.1	1.7
HA78DM-128470LFTR	188.0	360	2.6	1.5
HA78DM-128680LFTR	272.0	420	2.1	1.3
HA78DM-128101LFTR	400.0	600	1.7	1.1
HA78DM-12104R7LFTR	18.80	56	5.30	3.780
HA78DM-12106R8LFTR	27.20	68	5.20	3.430
HA78DM-1210100LFTR	41.12	80	4.30	3.162
HA78DM-1210220LFTR	88.00	160	2.70	2.236
HA78DM-1210330LFTR	132.00	200	2.25	2.000
HA78DM-1210470LFTR	188.00	260	1.85	1.754
HA78DM-1210680LFTR	272.00	392	1.48	1.429
HA78DM-1210101LFTR	400.00	512	1.27	1.250
HA78DM-1210121LFTR	480.00	680	1.19	1.085
HA78DM-1210471LFTR	1880.00	2280	0.61	0.592

- Notes: (1) Isat is the saturation current at which inductance rolls off at 35% approximately from its initial (zero DC)
- (2) Irms is the approximate current at which $\Delta T = 40^\circ\text{C}$ max
- (3) Test condition 100kHz @ 0.3V
- (4) Tested at 25°C

General Note

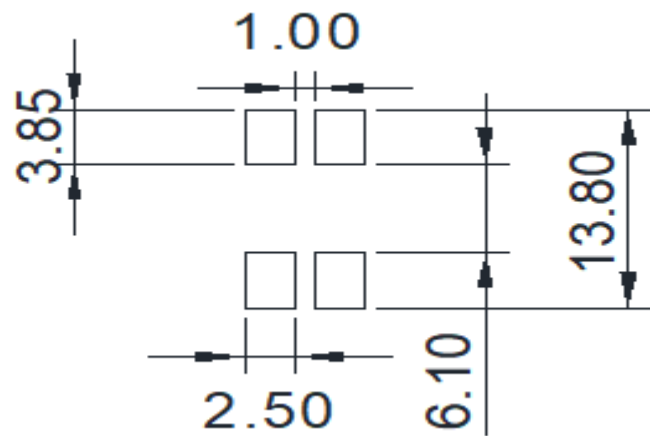
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Mechanical Outline (mm)



Case Size	A Max.	B Max.	C Max.	D Ref.	E Ref.	F Ref.	G Ref.
128	12.5	12.5	8.05	5.00	7.00	2.35	1.80
1210	12.5	12.5	10.5	5.00	7.00	2.35	1.80

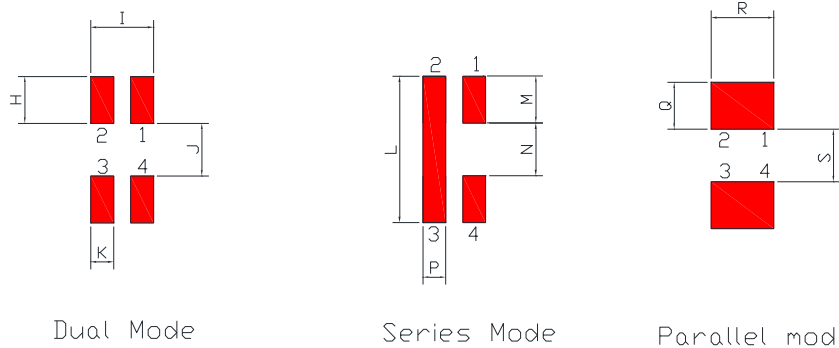
PCB Layout (mm)



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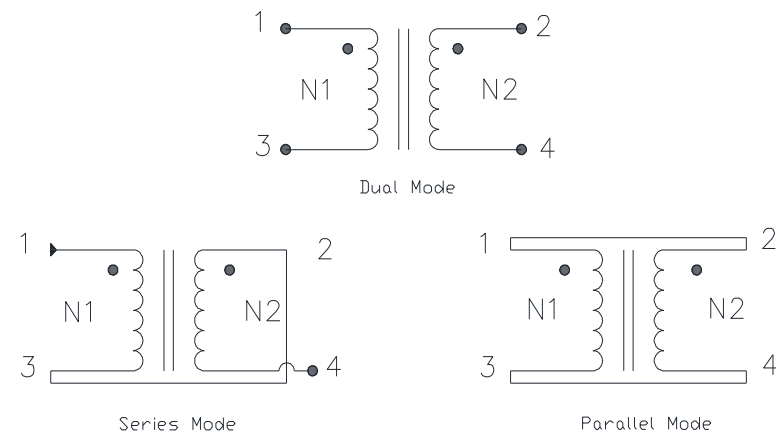
Recommended Solder Pad Layout

RECOMENDED SOLDER PAD LAYOUT

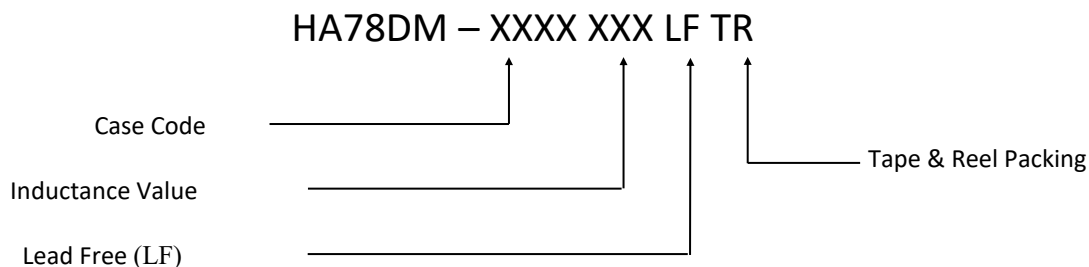


Case Size	H	I	J	K	L	M	N	P	Q	R	S
128	3.85	6.00	6.10	2.50	13.80	3.85	6.10	2.50	3.85	6.00	6.10
1210	3.85	6.00	6.10	2.50	13.80	3.85	6.10	2.50	3.85	6.00	6.10

Electrical Schematic



Packaging



Case Size	Reel Size	Qty/Reel	Qty/Carton
128	13"	500	3,000
1210	13"	300	1,800

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