

SMD Power Inductor

CDRCH12D78BT150



Discription

- Ferrite drum core construction.
- Magnetically shielded.
- Qualification to AEC-Q200.
- LxWxH:12.5x12.5x8.0 mm Max.
- Product weight: 4.1 g (Ref.)
- Moisture Sensitivity Level: 1



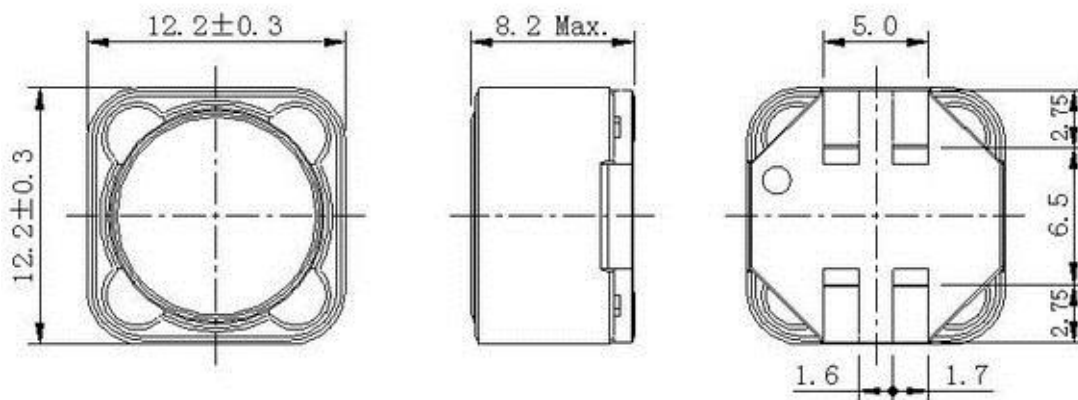
Environmental Data

- Operating temperature range: -40°C~+150°C (including coil's self temperature rise)
- Storage temperature range: -40°C~+150°C

Applications

- Ideally used in LED modules, DC/DC converters and 1:1 Transformer, etc.

Dimension - [mm]



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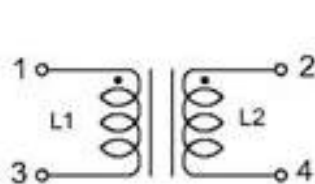
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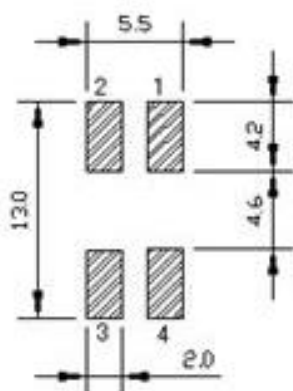


Reference Land pattern – [mm]

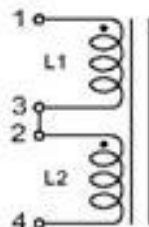
(1) Single winding



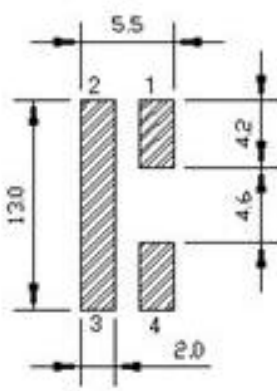
(1)



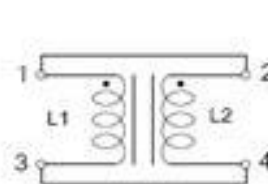
(2) Leads connected in series



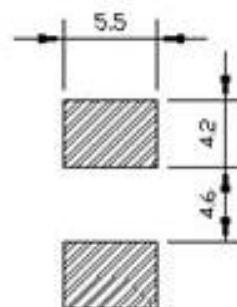
(2)



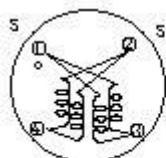
(3) Leads connected in parallel



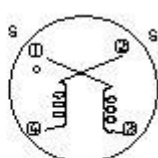
(3)



Connection



(4.7 μ H~22 μ H)



(33 μ H~470 μ H)

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Electrical Characteristics

【Single winding (Pin1 to Pin3 or Pin2 to Pin4)】

Part No.	Inductance (μ H) ($\pm 20\%$) ※1	D.C.R. (m Ω) Max. (Typ.)	Saturation Current (A) Max. (Typ.) ※2		Temperature Rise Current (A) (Typ.) ※3
			(at 20°C)	(at 150°C) Ref.	
CDRCH12D78BT150NP-4R7NC	4.7 $\pm 30\%$	44.0 (35.0)	12.80 (15.00)	12.10	3.50 (4.10)
CDRCH12D78BT150NP-6R8NC	6.8 $\pm 30\%$	55.0 (44.0)	11.00 (13.20)	10.00	3.20 (3.70)
CDRCH12D78BT150NP-100MC	10 $\pm 20\%$	70.0 (56.0)	9.60 (11.20)	8.40	2.90 (3.40)
CDRCH12D78BT150NP-150MC	15 $\pm 20\%$	79.0 (63.0)	8.00 (9.40)	7.30	2.70 (3.10)
CDRCH12D78BT150NP-220MC	22 $\pm 20\%$	113 (90.0)	6.40 (7.60)	6.00	2.20 (2.60)
CDRCH12D78BT150NP-330MC	33 $\pm 20\%$	180 (144.0)	5.40 (6.40)	4.70	1.70 (2.10)
CDRCH12D78BT150NP-470MC	47 $\pm 20\%$	216 (173)	4.40 (5.20)	4.10	1.40 (1.70)
CDRCH12D78BT150NP-680MC	68 $\pm 20\%$	312 (250)	3.60 (4.40)	3.20	1.20 (1.50)
CDRCH12D78BT150NP-101MC	100 $\pm 20\%$	433 (347)	3.00 (3.60)	2.60	1.00 (1.25)
CDRCH12D78BT150NP-151MC	150 $\pm 20\%$	718 (575)	2.50 (3.00)	2.10	0.70 (0.90)
CDRCH12D78BT150NP-221MC	220 $\pm 20\%$	1070 (853)	2.00 (2.40)	1.80	0.65 (0.78)
CDRCH12D78BT150NP-331MC	330 $\pm 20\%$	1550 (1240)	1.60 (2.00)	1.50	0.56 (0.63)
CDRCH12D78BT150NP-471MC	470 $\pm 20\%$	2310 (1850)	1.40 (1.60)	1.10	0.42 (0.50)

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【Leads connected in series (Pin1 to Pin4, Pin2 and Pin3 short)】

Part No.	Inductance (μ H) ($\pm 20\%$) ※1	D.C.R. (m Ω) Max. (Typ.)	Saturation Current (A) Max. (Typ.) ※2		Temperature Rise Current (A) (Typ.) ※3
			(at 20°C)	(at 150°C) Ref.	
CDRCH12D78BT150NP-4R7NC	18.8 \pm 30%	88.0 (70.0)	6.40 (7.50)	6.10	2.40 (2.90)
CDRCH12D78BT150NP-6R8NC	27.2 \pm 30%	110 (88.0)	5.50 (6.60)	5.00	2.10 (2.40)
CDRCH12D78BT150NP-100MC	40 \pm 20%	140 (112)	4.80 (5.60)	4.30	2.00 (2.30)
CDRCH12D78BT150NP-150MC	60 \pm 20%	158 (126)	4.00 (4.70)	3.70	1.80 (2.10)
CDRCH12D78BT150NP-220MC	88 \pm 20%	226 (180)	3.20 (3.80)	3.10	1.50 (1.70)
CDRCH12D78BT150NP-330MC	132 \pm 20%	360 (288)	2.70 (3.20)	2.60	1.20 (1.40)
CDRCH12D78BT150NP-470MC	188 \pm 20%	432 (346)	2.20 (2.60)	2.10	1.00 (1.20)
CDRCH12D78BT150NP-680MC	272 \pm 20%	624 (500)	1.80 (2.20)	1.60	0.85 (0.96)
CDRCH12D78BT150NP-101MC	400 \pm 20%	866 (694)	1.50 (1.80)	1.40	0.67 (0.77)
CDRCH12D78BT150NP-151MC	600 \pm 20%	1440 (1150)	1.20 (1.50)	1.10	0.55 (0.66)
CDRCH12D78BT150NP-221MC	880 \pm 20%	2140 (1700)	1.00 (1.20)	0.90	0.45 (0.54)
CDRCH12D78BT150NP-331MC	1320 \pm 20%	3100 (2480)	0.80 (1.00)	0.70	0.40 (0.45)
CDRCH12D78BT150NP-471MC	1880 \pm 20%	4630 (3700)	0.70 (0.80)	0.50	0.30 (0.35)

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【Leads connected in parallel (Pin1,2 to Pin3,4, Pin1 and Pin2, Pin3 and Pin4) short 】

Part No.	Inductance (μ H) ($\pm 20\%$) ※1	D.C.R (m Ω) Max. (Typ.)	Saturation Current (A) Max. (Typ.) ※2		Temperature Rise Current (A) (Typ.) ※3
			(at 20°C)	(at 150°C) Ref.	
CDRCH12D78BT150NP-4R7NC	4.7 $\pm 30\%$	22.0 (18.0)	12.80 (15.00)	12.10	5.00 (5.80)
CDRCH12D78BT150NP-6R8NC	6.8 $\pm 30\%$	28.0 (22.0)	11.00 (13.20)	10.00	4.50 (5.20)
CDRCH12D78BT150NP-100MC	10 $\pm 20\%$	35.0 (28.0)	9.60 (11.20)	8.40	4.00 (4.50)
CDRCH12D78BT150NP-150MC	15 $\pm 20\%$	40.0 (32.0)	8.00 (9.40)	7.30	3.80 (4.30)
CDRCH12D78BT150NP-220MC	22 $\pm 20\%$	57.0 (45.0)	6.40 (7.60)	6.00	3.20 (3.70)
CDRCH12D78BT150NP-330MC	33 $\pm 20\%$	90.0 (72.0)	5.40 (6.40)	4.70	2.50 (2.90)
CDRCH12D78BT150NP-470MC	47 $\pm 20\%$	108 (87.0)	4.40 (5.20)	4.10	2.15 (2.50)
CDRCH12D78BT150NP-680MC	68 $\pm 20\%$	156 (125)	3.60 (4.40)	3.20	1.85 (2.15)
CDRCH12D78BT150NP-101MC	100 $\pm 20\%$	217 (174)	3.00 (3.60)	2.60	1.52 (1.78)
CDRCH12D78BT150NP-151MC	150 $\pm 20\%$	359 (288)	2.50 (3.00)	2.10	1.16 (1.35)
CDRCH12D78BT150NP-221MC	220 $\pm 20\%$	535 (426)	2.00 (2.40)	1.80	0.95 (1.14)
CDRCH12D78BT150NP-331MC	330 $\pm 20\%$	775 (620)	1.60 (2.00)	1.50	0.80 (0.91)
CDRCH12D78BT150NP-471MC	470 $\pm 20\%$	1160 (925)	1.40 (1.60)	1.10	0.53 (0.63)

※1 Measuring frequency at 100kHz, 0.1V.

※2 Saturation current: The value of D.C. current when the inductance becomes 30% lower than its initial value.

※3 Temperature rise current: The value of D.C. current when the temperature of coil becomes $\Delta T=40^\circ\text{C}$ ($T_a=20^\circ\text{C}$).

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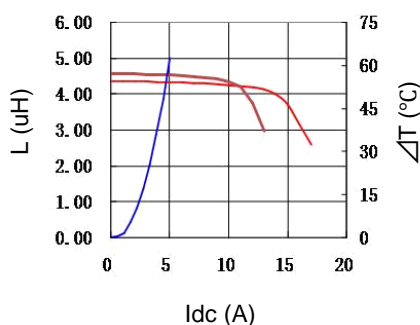


3-2-1. Single Winding (Pin1 to Pin3 or Pin2 to Pin4)

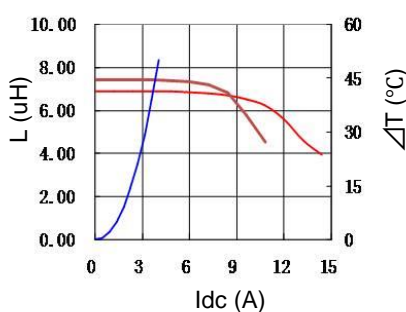
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

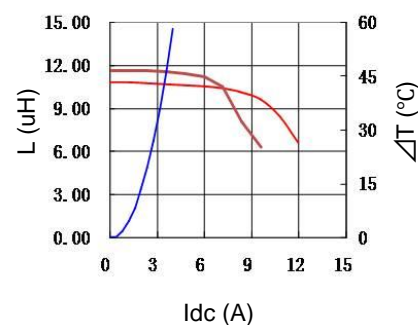
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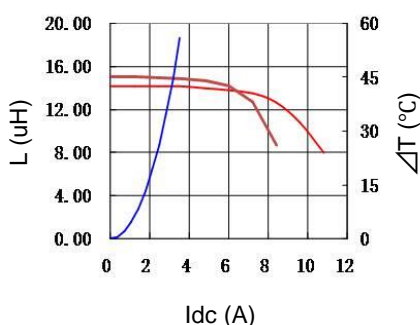
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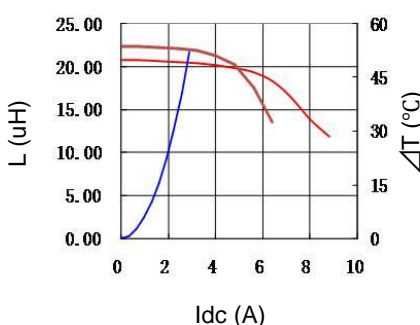
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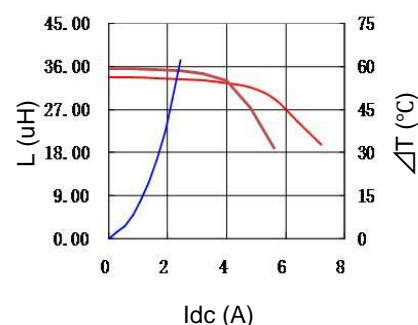
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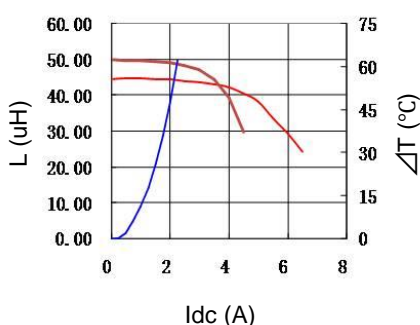
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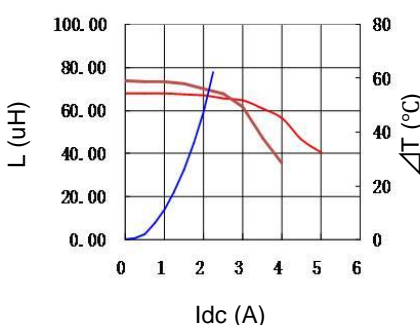
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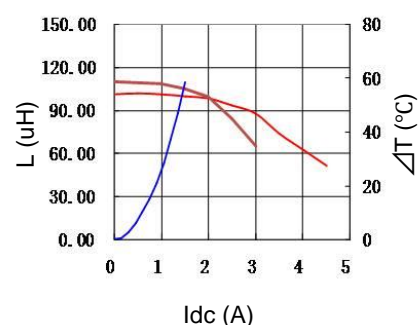
CDRCH12D78BT150NP-470MC



CDRCH12D78BT150NP-680MC



CDRCH12D78BT150NP-101MC



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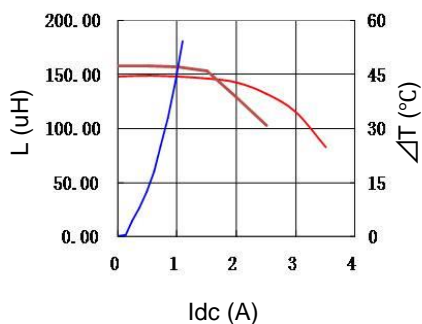


3-2-1. Single Winding (Pin1 to Pin3 or Pin2 to Pin4)

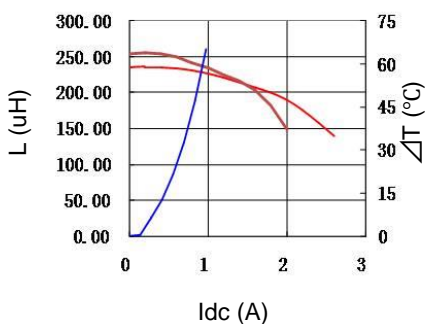
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

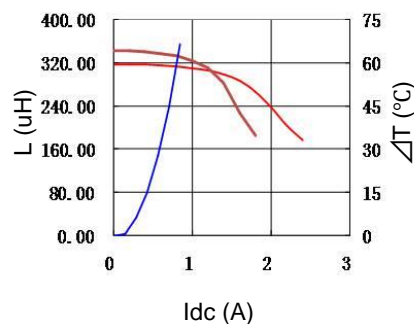
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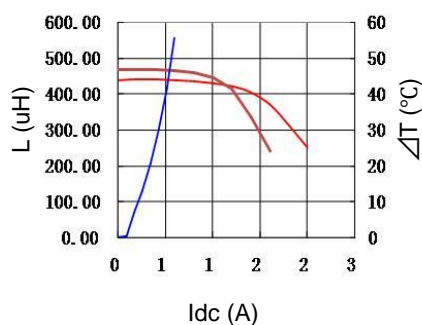
CDRCH12D78BT150NP-221MC



CDRCH12D78BT150NP-331MC



CDRCH12D78BT150NP-471MC



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CDRCH12D78BT150

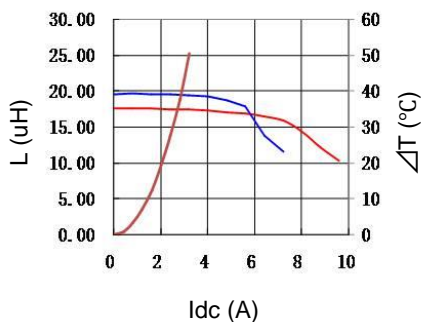


3-2-2. Leads connected in series (Pin1 to Pin4, Pin2 and Pin3 short)

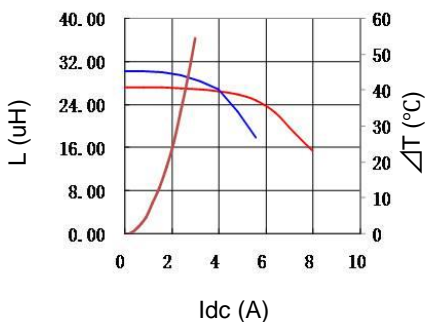
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

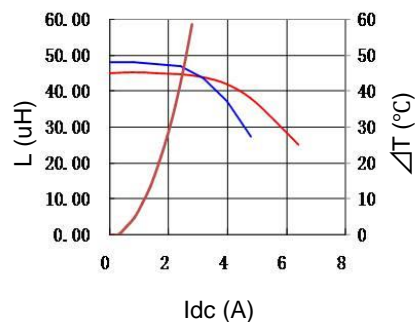
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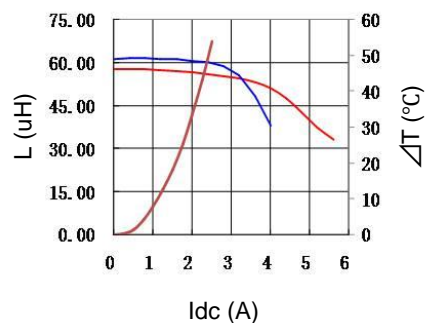
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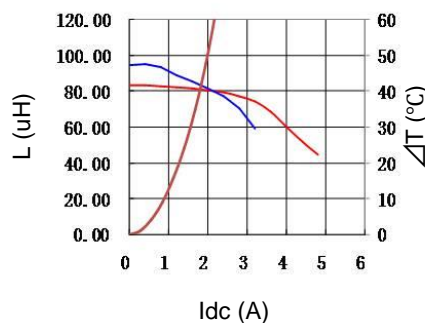
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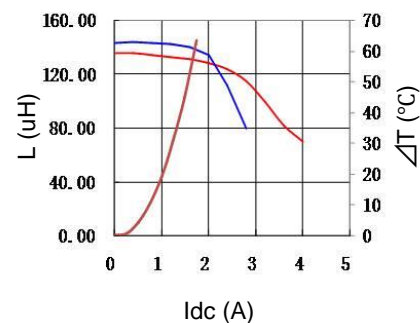
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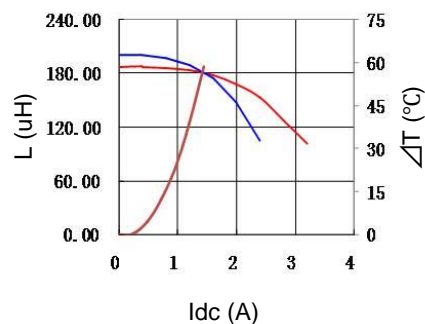
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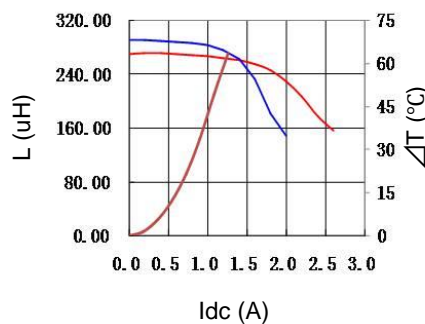
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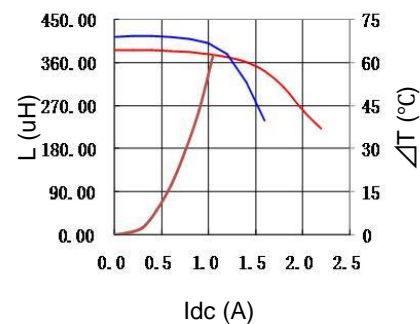
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CDRCH12D78BT150NP-680MC



CDRCH12D78BT150NP-101MC



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CDRCH12D78BT150

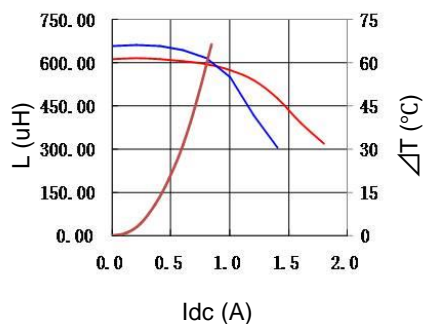


3-2-2. Leads connected in series (Pin1 to Pin4, Pin2 and Pin3 short)

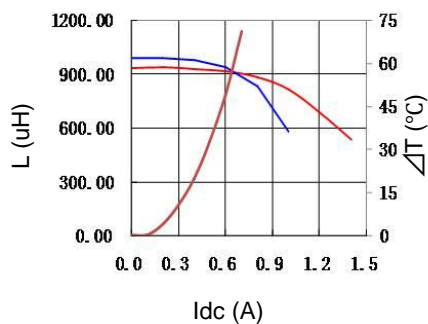
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

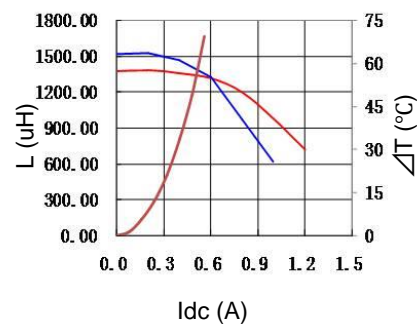
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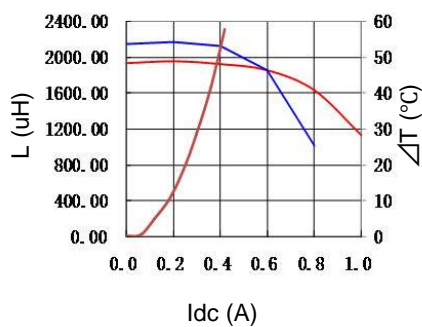
CDRCH12D78BT150NP-221MC



CDRCH12D78BT150NP-331MC



CDRCH12D78BT150NP-471MC



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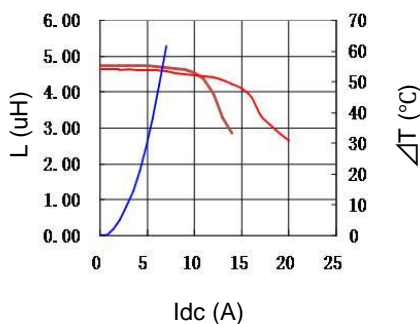


3-2-3. Leads connected in parallel (Pin1,2 to Pin3,4, Pin1 and Pin2, Pin3 and Pin4 short)

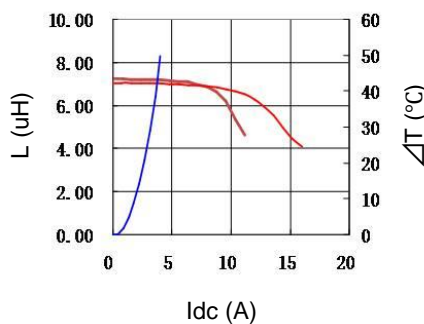
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

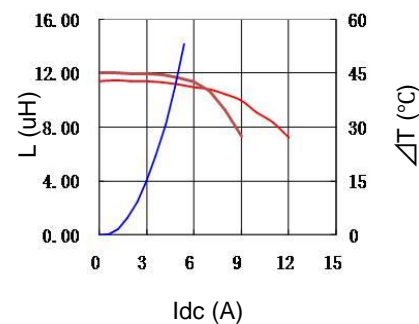
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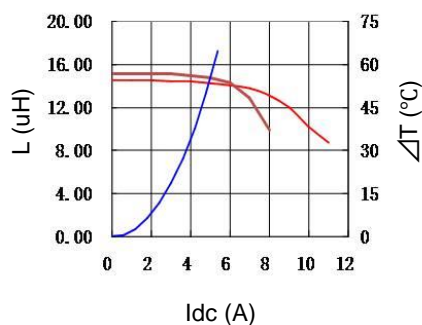
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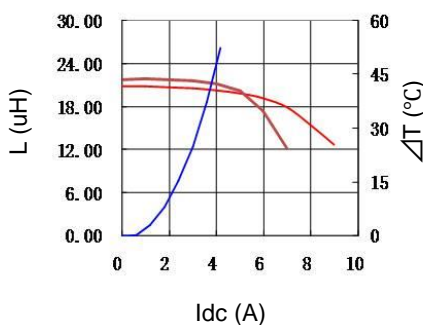
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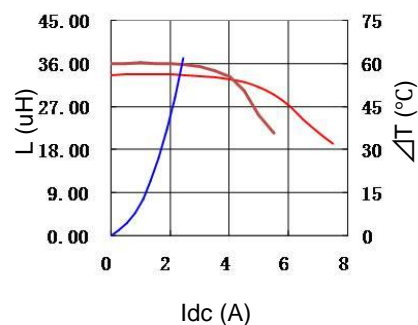
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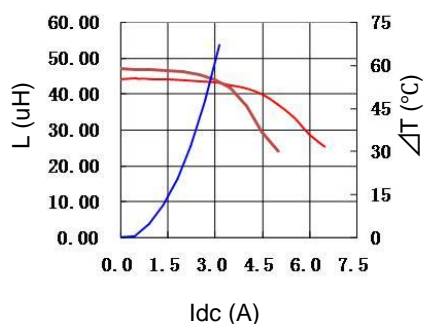
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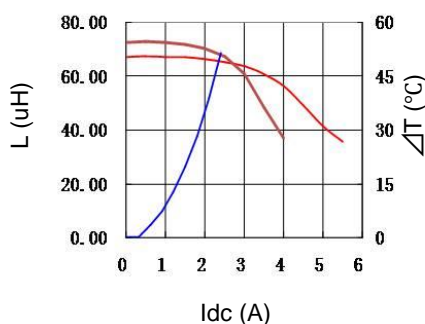
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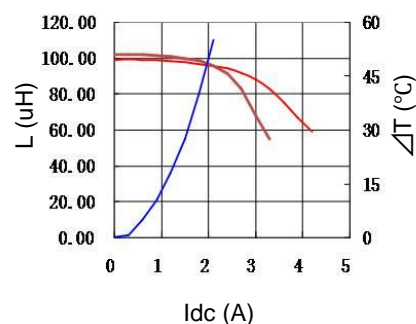
CDRCH12D78BT150NP-470MC



CDRCH12D78BT150NP-680MC



CDRCH12D78BT150NP-101MC



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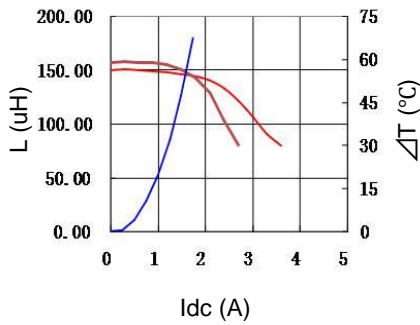


3-2-3. Leads connected in parallel (Pin1,2 to Pin3,4, Pin1 and Pin2, Pin3 and Pin4 short)

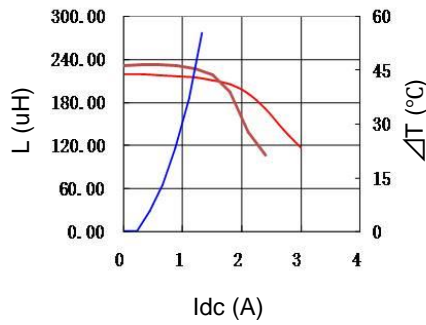
Saturation Current & Temperature Rise Graph

— L (20°C) — L (150°C) — ΔT

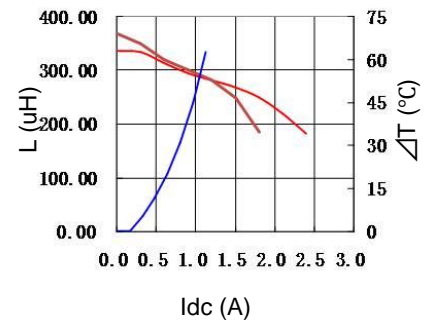
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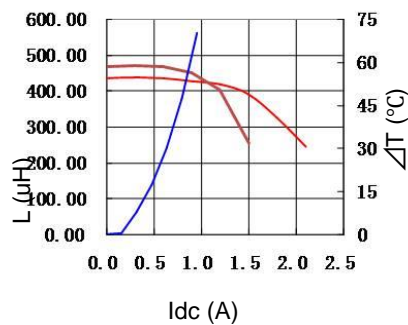
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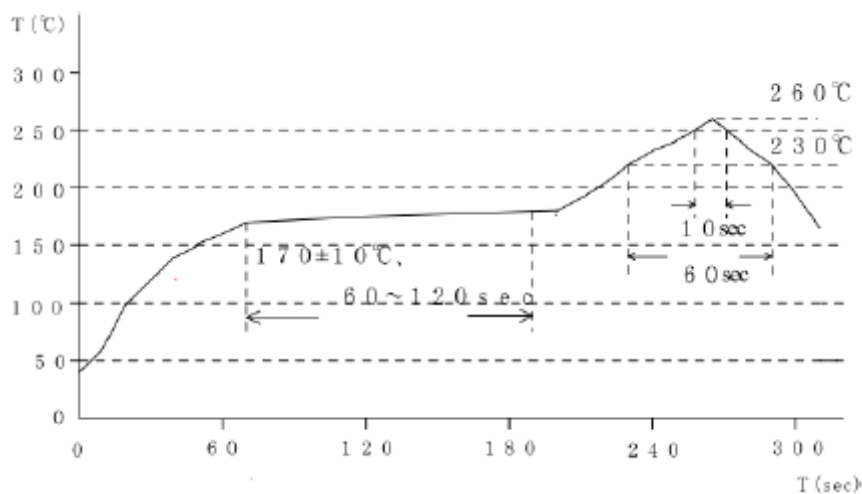
CDRCH12D78BT150NP-331MC



CDRCH12D78BT150NP-471MC



Solder Reflow Condition



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