

# SMD Power Inductor CDRCH12D78B



## Description

- Ferrite drum core construction
- Magnetically shielded
- LxWxH: 12.5 × 12.5 × 8.0 mm Max.
- Product weight: 4.1g(Ref.)
- Moisture Sensitivity Level: 1
- RoHS compliance



## Environmental Data

- Operating temperature range: -40°C~+125°C (including coil's self temperature rise)
- Storage temperature range: -40°C~+125°C
- Solder reflow temperature: 260 °C peak

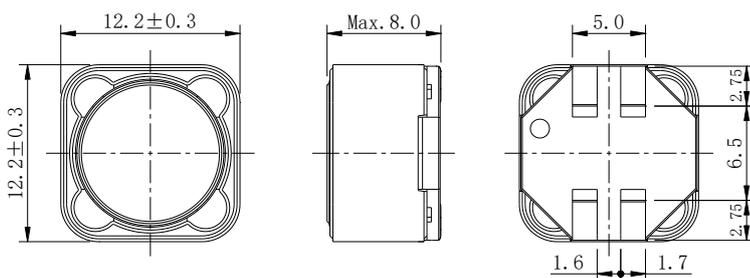
## Packaging

- Carrier tape and reel packaging
- 13.0" diameter reel
- 500pcs per reel

## Applications

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

## Dimension - [mm]



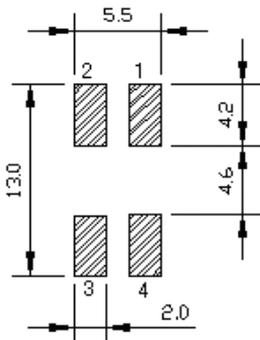
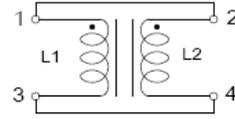
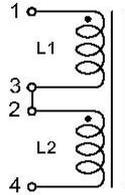
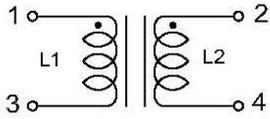
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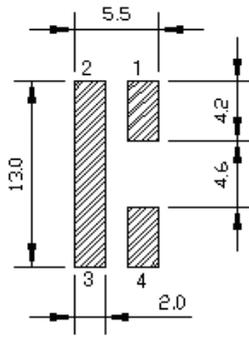
## CDRCH12D78B



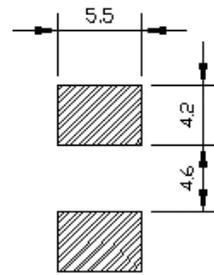
### Reference Land pattern – [mm] and Connection



Single winding



Leads connected in series



Leads connected in parallel

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# SMD Power Inductor

## CDRCH12D78B



### Electrical Characteristics

Part Name	Stamp	Inductance (μH) [within] ※1	D.C.R. (Ω) Max. (Typ.)	Saturation Current (A) Max. (Typ.) ※2	Temperature rise current (A) Max. (Typ.) ※3	Mode
CDRCH12D78BNP-4R7NC	4R7	4.7±30%	40m(30m )	13.2(15.6)	3.9(4.4)	Single winding
		18.8±30%	80m(60m )	6.6(7.8)	2.8(3.1)	Leads connected in series
		4.7±30%	20m(16m )	13.2(15.6)	5.4(6.1)	Leads connected in parallel
CDRCH12D78BNP-6R8NC	6R8	6.8±30%	46m(36m )	12.0(14.2)	3.6(4.1)	Single winding
		27.2±30%	92m(72m)	6.0(7.1)	2.6(3.0)	Leads connected in series
		6.8±30%	23m(18m)	12.0(14.2)	5.0(5.6)	Leads connected in parallel
CDRCH12D78BNP-100MC	100	10±20%	54m(42m )	10.0(11.8)	3.2(3.6)	Single winding
		40±20%	108m(84m)	5.0(5.9)	2.3(2.6)	Leads connected in series
		10±20%	27m(21m)	10.0(11.8)	4.4(5.0)	Leads connected in parallel
CDRCH12D78BNP-150MC	150	15±20%	72m(58m )	8.2(9.7 )	2.8(3.2)	Single winding
		60±20%	144m(116m)	4.1(4.8)	2.0(2.3)	Leads connected in series
		15±20%	36m(29m)	8.2(9.7 )	4.0(4.6)	Leads connected in parallel
CDRCH12D78BNP-220MC	220	22±20%	96m(80m)	7.0(8.2 )	2.3(2.6)	Single winding
		88±20%	192m(160m)	3.5(4.1)	1.6(1.8)	Leads connected in series
		22±20%	48m(40m)	7.0(8.2 )	3.3(3.7)	Leads connected in parallel
CDRCH12D78BNP-330MC	330	33±20%	144m(120m)	5.5(6.5)	1.8(2.1)	Single winding
		132±20%	290m(240m)	2.75(3.25)	1.3(1.5)	Leads connected in series
		33±20%	72m(60m)	5.5(6.5)	2.7(3.0)	Leads connected in parallel

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Part Name	Stamp	Inductance ( $\mu\text{H}$ ) [within] ※1	D.C.R. ( $\Omega$ ) Max. (Typ.)	Saturation Current (A) Max. (Typ.) ※2	Temperature rise current (A) Max. (Typ.) ※3	Mode
CDRCH12D78BNP-470MC	470	47 $\pm$ 20%	186m(155m)	4.6(5.5)	1.5(1.7)	Single winding
		188 $\pm$ 20%	372m(310m)	2.3(2.75)	1.1(1.3)	Leads connected in series
		47 $\pm$ 20%	93m(77m)	4.6(5.5)	2.4(2.6)	Leads connected in parallel
CDRCH12D78BNP-680MC	680	68 $\pm$ 20%	266m(222m)	3.9(4.6)	1.3(1.5)	Single winding
		272 $\pm$ 20%	532m(444m)	1.95(2.3)	0.94(1.05)	Leads connected in series
		68 $\pm$ 20%	133m(111m)	3.9(4.6)	2.0(2.3)	Leads connected in parallel
CDRCH12D78BNP-101MC	101	100 $\pm$ 20%	384m(320m)	3.1(3.7)	1.10(1.25)	Single winding
		440 $\pm$ 20%	768m(640m)	1.55(1.85)	0.78(0.88)	Leads connected in series
		100 $\pm$ 20%	192m(160m)	3.1(3.7)	1.6(1.8)	Leads connected in parallel
CDRCH12D78BNP-151MC	151	150 $\pm$ 20%	648m(540m)	2.5(3.0)	0.83(0.95)	Single winding
		600 $\pm$ 20%	1.29(1.08)	1.25(1.50)	0.60(0.68)	Leads connected in series
		150 $\pm$ 20%	324m(270m)	2.5(3.0)	1.2(1.4)	Leads connected in parallel
CDRCH12D78BNP-221MC	221	220 $\pm$ 20%	936m(780m)	2.1(2.5)	0.68(0.78)	Single winding
		880 $\pm$ 20%	1.87(1.56)	1.05(1.25)	0.48(0.55)	Leads connected in series
		220 $\pm$ 20%	468m(390m)	2.1(2.5)	1.0(1.15)	Leads connected in parallel
CDRCH12D78BNP-331MC	331	330 $\pm$ 20%	1.35(1.17)	1.7(2.1)	0.56(0.64)	Single winding
		1320 $\pm$ 20%	2.7(2.34)	0.85(1.05)	0.40(0.45)	Leads connected in series
		330 $\pm$ 20%	675m(585m)	1.7(2.1)	0.83(0.94)	Leads connected in parallel

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CDRCH12D78BNP-471MC	471	470±20%	2.01(1.75)	1.5(1.75)	0.45(0.52)	Single winding
		1880±20%	4.02(3.50)	0.75(0.88)	0.31(0.35)	Leads connected in series
		470±20%	1005m(875m)	1.5(1.75)	0.67(0.76)	Leads connected in parallel

※1 Measuring frequency inductance at 100KHz.

※2 Saturation current: The value of D.C. current when the inductance is over 70% of the initial value.

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

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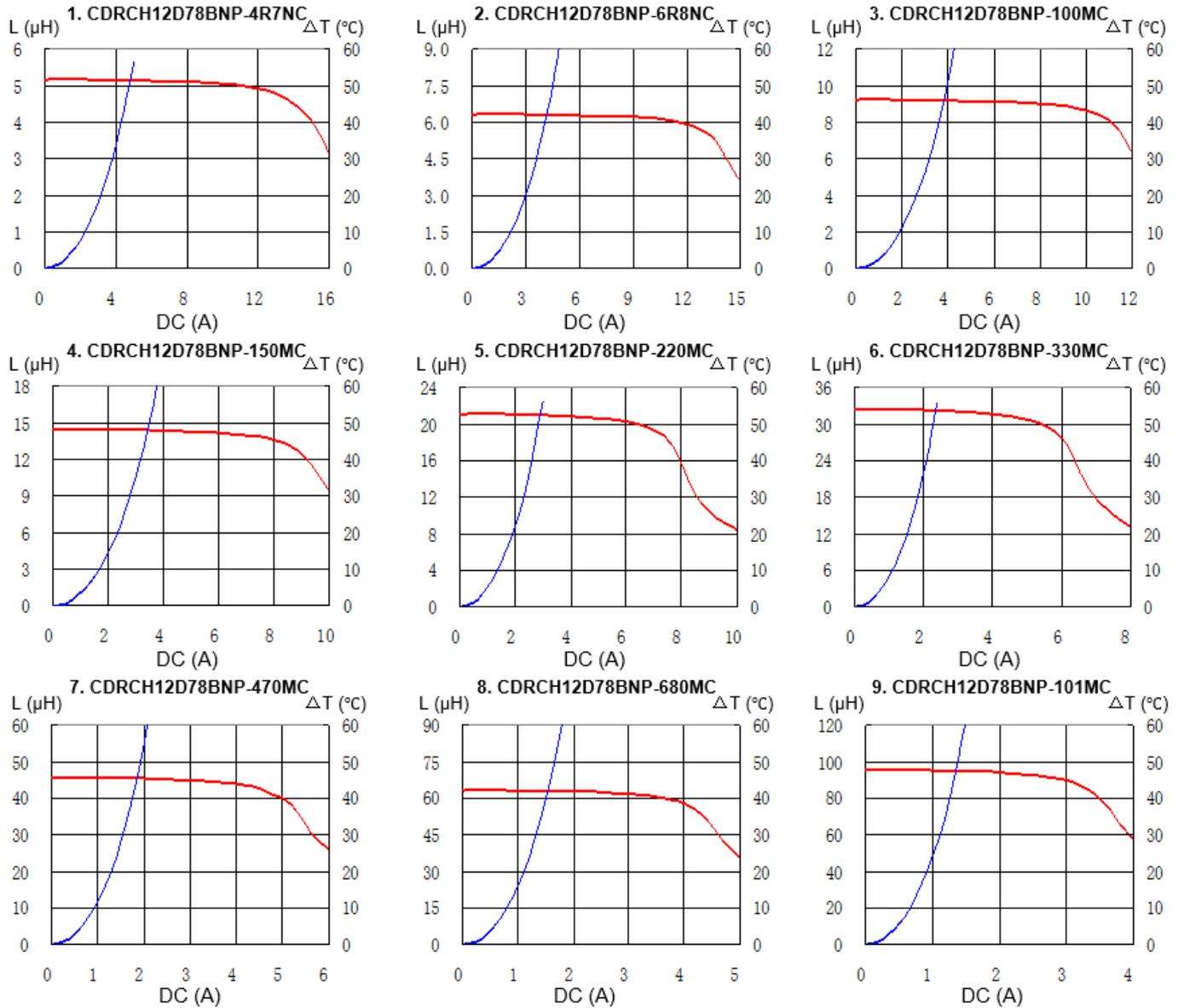
# SMD Power Inductor

## CDRCH12D78B



Saturation Current & Temperature Rise Graph — L (20°C) —  $\Delta T$

### Single winding inductor



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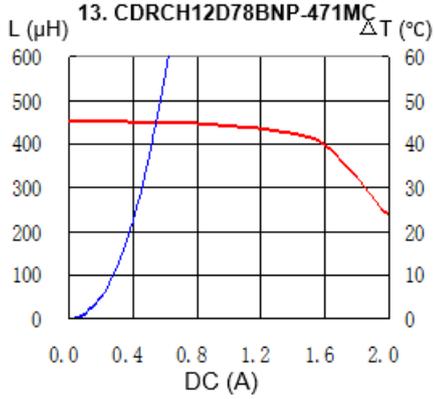
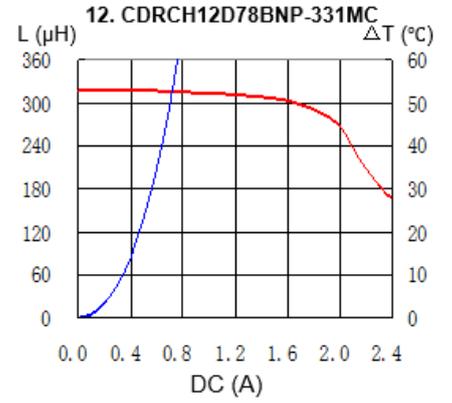
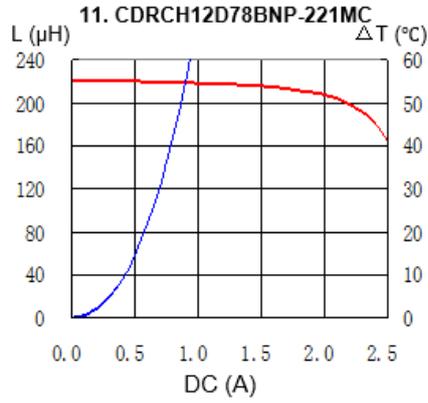
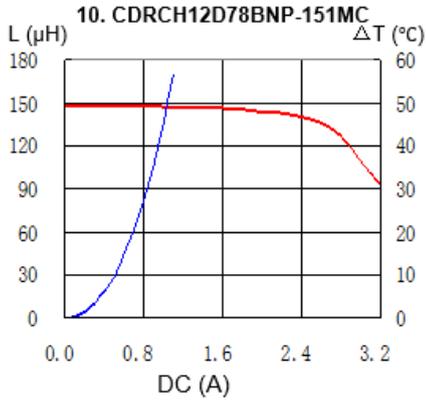
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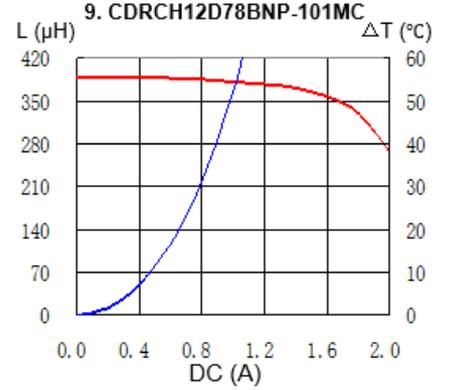
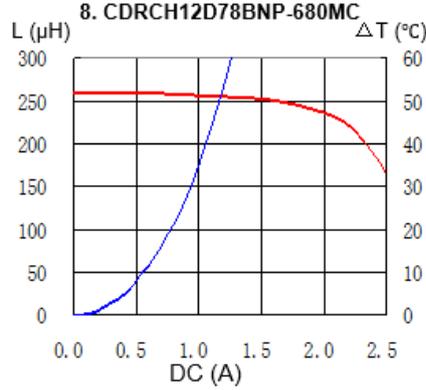
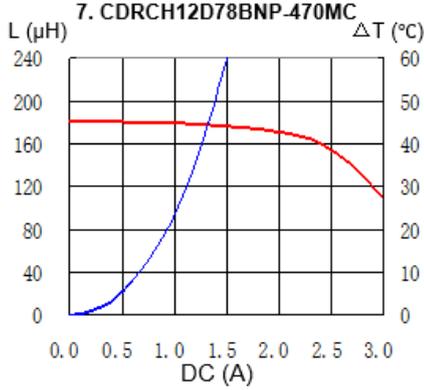
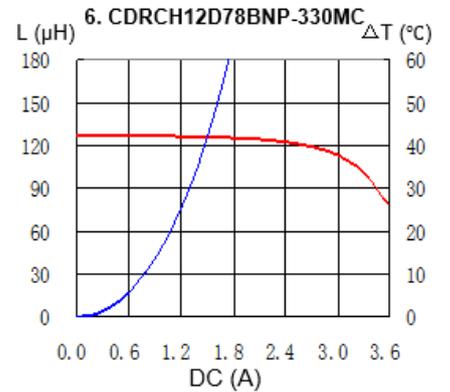
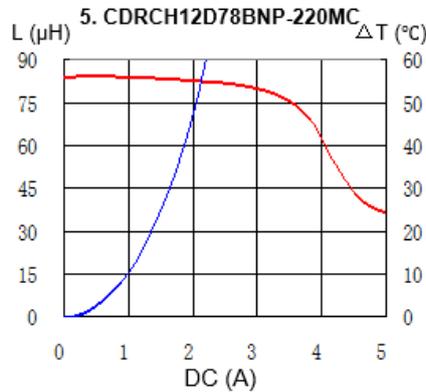
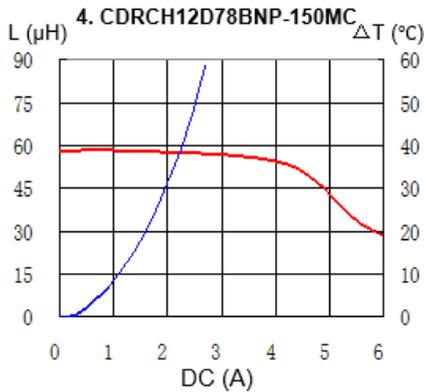
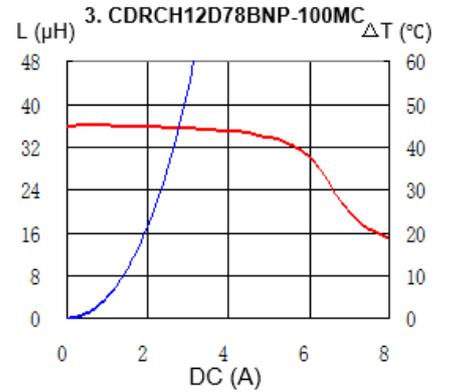
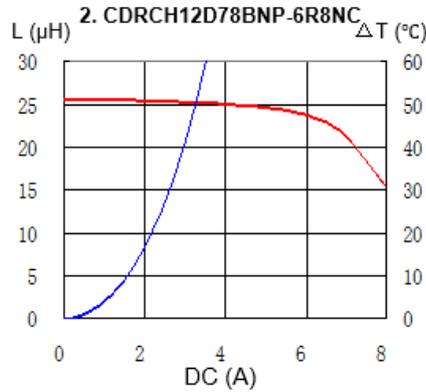
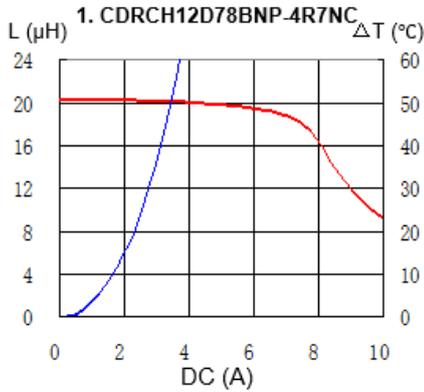
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Saturation Current & Temperature Rise Graph — L (20°C) —  $\Delta T$

### Leads connected in series Mode



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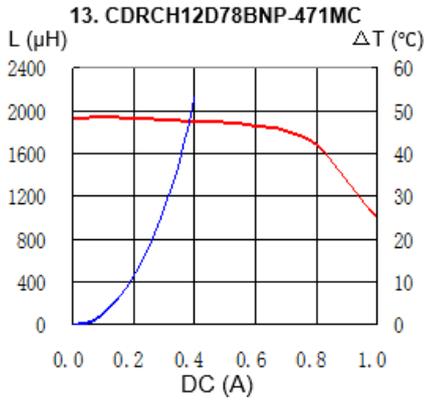
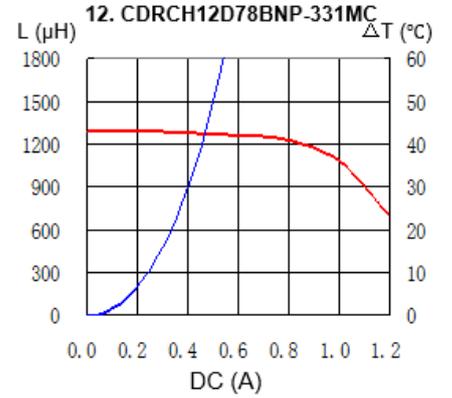
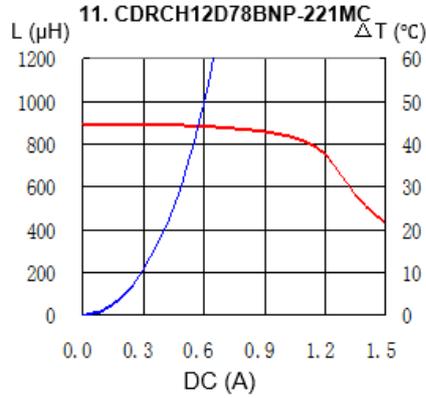
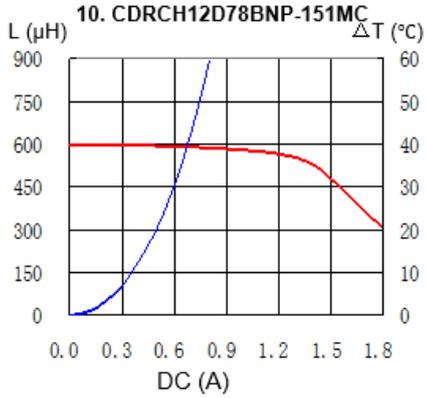
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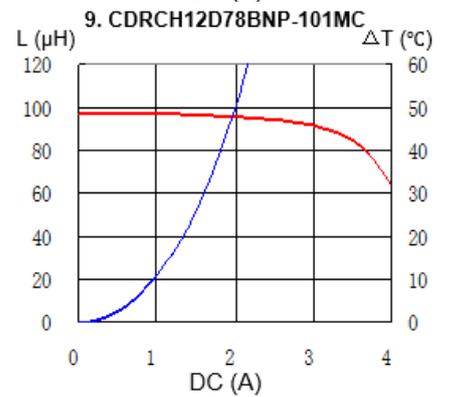
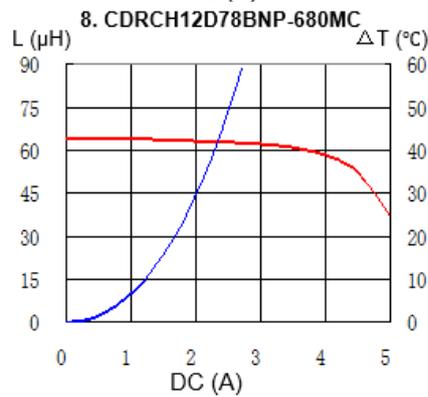
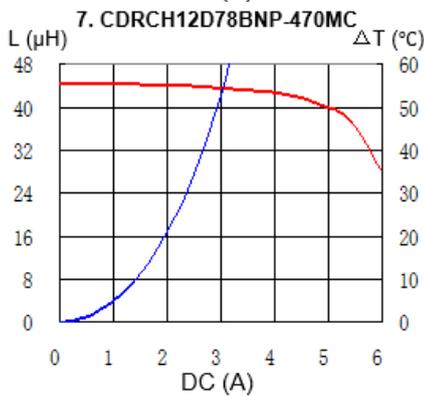
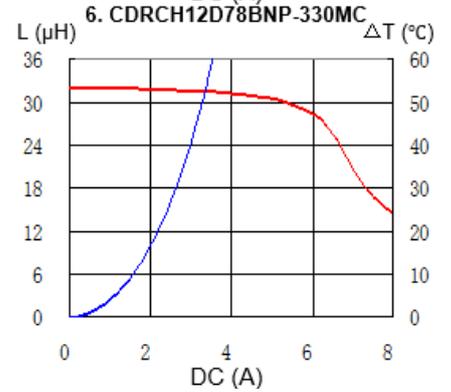
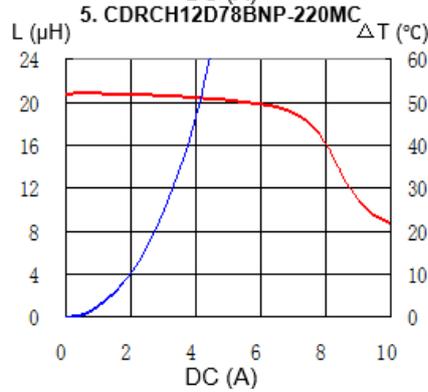
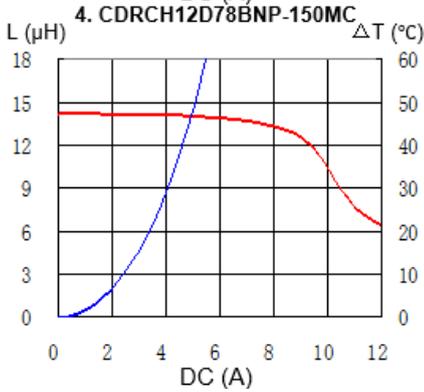
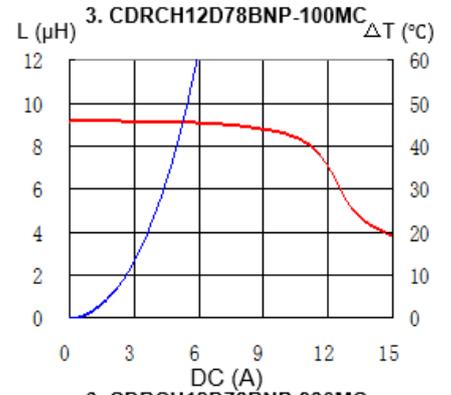
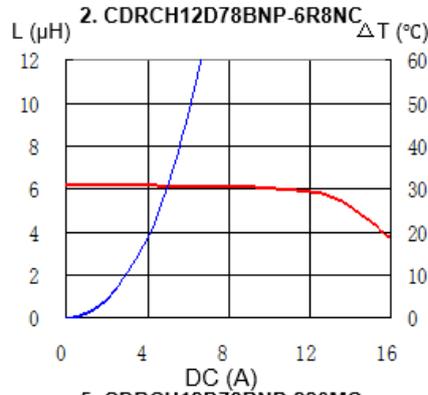
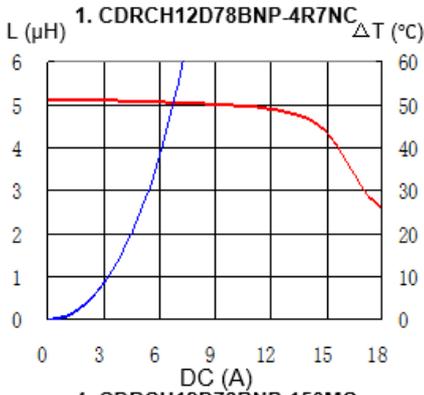
# SMD Power Inductor

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Saturation Current & Temperature Rise Graph — L (20°C) —  $\Delta T$

### Leads connected in parallel Mode



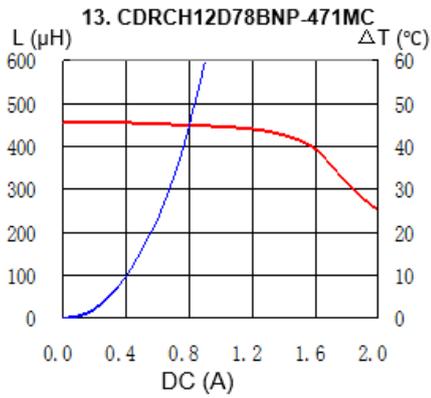
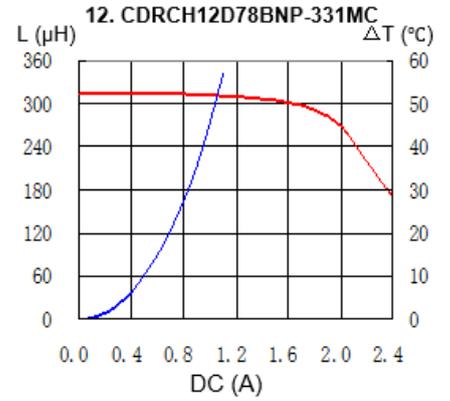
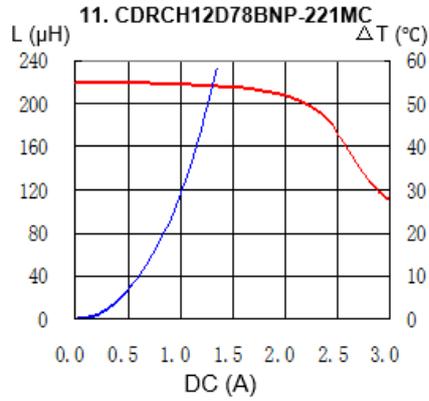
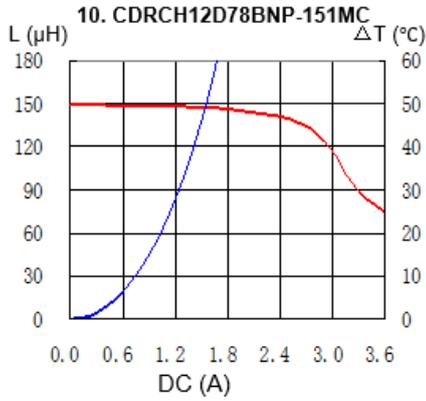
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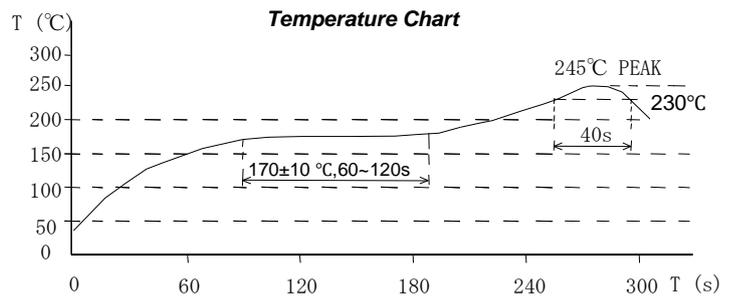
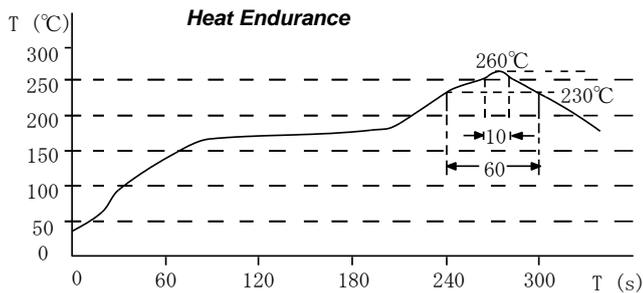


Saturation Current & Temperature Rise Graph — L (20°C) —  $\Delta T$

## Leads connected in parallel Mode



## Solder Reflow Condition



For sales office information, please visit our website (<https://www.sumida.com/>).

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