

## FEATURES

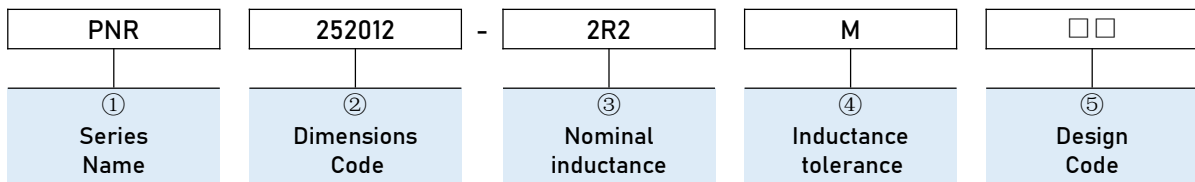
- Fe base metal material core provides large saturation current.
- Metallization on ferrite core results in excellent shock resistance and damage-free durability.
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI).
- Low DCR decreases power loss, small and slim take up less PCB real estate.
- Automatic production ensures high quality and consistency.
- Operating Temperature: -40°C~+125°C
- Packing:Tape Carrier Package.



## APPLICATIONS

- Smart phone, set top box, VR, AR.
- Notebooks, desktop computers, servers.
- Portable gaming devices, personal navigation systems, personal multimedia devices.

## PART NUMBERING



① Series Name	
PNR	Wire Wound SMD Power Inductor

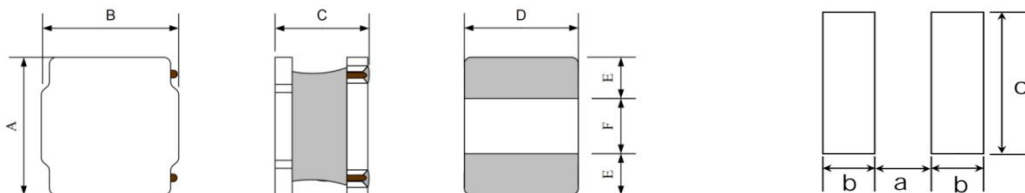
② Dimensions Code	
Code	Dimensions(L×W×H)[mm]
201610	2.0×1.6×1.0
252010	2.5×2.0×1.0
252012	2.5×2.0×1.2
3012	3.0×3.0×1.2
3015	3.0×3.0×1.5
4012	4.0×4.0×1.2
4020	4.0×4.0×2.0

③ Nominal inductance	
Code (example)	Nominal inductance [μH]
2R2	2.2
100	10
101	100

④ Inductance tolerance	
Code (example)	Inductance tolerance
M	±20%
N	±30%

⑤ Design Code	
□ □	Standard product is blank

## DIMENSIONS & RECOMMENDED LAND PATTERN



Recommended Land Pattern

## DIMENSIONS &amp; RECOMMENDED LAND PATTERN

Unit: mm

Series	Dimensions						Recommended Land Pattern		
	A	B	C	D Typ.	E Typ.	F Typ.	a Typ.	b Typ.	c Typ.
PNR201610	2.0±0.3	1.6±0.3	1.05 Max	1.2±0.2	0.6	0.8	0.7	0.7	1.4
PNR252010	2.5±0.3	2.0±0.3	1.0 Max	2.0±0.2	0.8	0.9	0.7	1	2.2
PNR252012	2.5±0.3	2.0±0.3	1.2 Max	2.0±0.2	0.8	0.9	0.7	1	2.2
PNR3012	3.0±0.2	3.0±0.2	1.35 Max	2.5±0.2	0.9	1.2	1	1.1	2.7
PNR3015	3.0±0.2	3.0±0.2	1.5 Max.	2.5±0.2	0.9	1.2	1	1.1	2.7
PNR4012	4.0±0.2	4.0±0.2	1.2 Max.	3.4±0.2	1	2	1.8	1.2	3.6
PNR4020	4.0±0.2	4.0±0.2	2.0 Max	3.3±0.2	1	2	1.8	1.2	3.5

## ELECTRICAL CHARACTERISTICS

## ● PNR201610 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR201610-R24N	0.24	0.04	0.033	3.00	3.45	4.50	5.50	
PNR201610-R33N	0.33	0.049	0.042	2.70	3.10	4.40	5.20	N
PNR201610-R47N	0.47	0.049	0.045	2.70	3.10	4.00	4.70	N
PNR201610-R68N	0.68	0.065	0.058	2.50	2.80	3.50	4.00	N
PNR201610-1R0N	1	0.095	0.085	2.00	2.30	3.30	3.80	N
PNR201610-1R5N	1.5	0.13	0.118	1.70	2.00	1.95	2.30	N
PNR201610-2R2M	2.2	0.18	0.164	1.40	1.60	1.90	2.15	M
PNR201610-3R3M	3.3	0.307	0.248	1.10	1.30	1.40	1.60	M
PNR201610-4R7M	4.7	0.425	0.375	0.90	1.00	1.10	1.40	M
PNR201610-6R8M	6.8	0.62	0.545	0.70	0.82	0.95	1.10	M
PNR201610-8R2M	8.2	0.87	0.788	0.66	0.76	0.86	1.00	M
PNR201610-100M	10	0.875	0.793	0.60	0.70	0.80	0.95	M

## ● PNR252010 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR252010-R24N	0.24	0.033	0.025	3.70	4.50	6.10	7.10	
PNR252010-R33N	0.33	0.039	0.033	3.50	4.05	4.80	5.50	N
PNR252010-R47N	0.47	0.045	0.04	3.20	3.60	4.40	5.20	N
PNR252010-R68N	0.68	0.059	0.049	2.75	3.20	3.20	3.60	N
PNR252010-1R0N	1	0.085	0.08	2.20	2.60	3.10	4.00	N
PNR252010-1R5N	1.5	0.106	0.09	2.00	2.30	2.60	3.00	N
PNR252010-2R2M	2.2	0.155	0.129	1.50	1.80	1.90	2.20	M
PNR252010-3R3M	3.3	0.252	0.21	1.20	1.40	1.60	1.80	M

## ELECTRICAL CHARACTERISTICS

## ● PNR252010 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR252010-4R7M	4.7	0.34	0.29	1.00	1.10	1.30	1.50	
PNR252010-6R8M	6.8	0.48	0.38	0.95	1.00	1.00	1.15	M
PNR252010-100M	10	0.74	0.7	0.65	0.75	0.90	1.00	M
PNR252012-R24N	0.24	0.023	0.019	4.05	4.70	6.50	7.80	N

## ● PNR252012 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR252012-R24N	0.24	0.023	0.019	4.05	4.70	6.50	7.80	
PNR252012-R33N	0.33	0.035	0.028	3.70	4.30	5.35	6.30	N
PNR252012-R47N	0.47	0.035	0.029	3.45	4.00	4.90	5.60	N
PNR252012-R68N	0.68	0.045	0.039	3.10	3.60	3.80	4.50	N
PNR252012-1R0N	1	0.054	0.048	3.00	3.40	3.60	4.00	N
PNR252012-1R5N	1.5	0.100	0.09	2.40	2.80	2.90	3.50	N
PNR252012-2R2M	2.2	0.120	0.1	1.90	2.15	2.60	3.00	M
PNR252012-3R3M	3.3	0.215	0.175	1.50	1.80	1.70	2.10	M
PNR252012-4R7M	4.7	0.26	0.24	1.25	1.45	1.60	1.90	M
PNR252012-5R6M	5.6	0.336	0.313	1.10	1.20	1.30	1.40	M
PNR252012-6R8M	6.8	0.366	0.335	0.95	1.10	1.20	1.40	M
PNR252012-8R2M	8.2±21%	0.46	0.405	0.88	1.06	1.15	1.36	M
PNR252012-100M	10	0.48	0.465	0.85	1.00	1.10	1.35	M
PNR252012-150M	15	1	0.82	0.60	0.70	0.77	0.90	M
PNR252012-220M	22	1.09	0.955	0.55	0.65	0.60	0.75	M

## ● PNR3012 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR3012-R47N	0.47	0.033	0.028	3.90	4.30	6.80	8.00	
PNR3012-1R0N	1	0.054	0.049	2.70	3.10	4.20	5.20	N
PNR3012-1R5N	1.5	0.074	0.067	2.50	2.90	3.40	4.10	N
PNR3012-2R2M	2.2	0.108	0.098	2.05	2.35	2.80	3.35	M
PNR3012-3R3M	3.3	0.155	0.135	1.70	2.00	2.20	2.60	M
PNR3012-4R7M	4.7	0.235	0.217	1.30	1.50	2.00	2.20	M
PNR3012-6R8M	6.8	0.34	0.253	1.10	1.25	1.60	1.90	M
PNR3012-100M	10	0.474	0.449	1.00	1.15	1.20	1.45	M

## ELECTRICAL CHARACTERISTICS

## ● PNR3015 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR3015-R24N	0.24	0.022	0.018	3.00	3.50	5.50	6.00	
PNR3015-R33N	0.33	0.035	0.026	4.00	4.50	9.00	10.00	N
PNR3015-R47N	0.47	0.04	0.034	3.50	4.00	7.50	8.00	N
PNR3015-1R0N	1	0.048	0.041	3.30	3.80	5.80	7.00	N
PNR3015-1R5N	1.5	0.072	0.065	2.20	2.70	4.60	5.50	N
PNR3015-2R2M	2.2	0.115	0.085	2.00	2.30	4.00	4.50	M
PNR3015-3R3M	3.3	0.175	0.144	2.00	2.50	3.40	4.00	M
PNR3015-4R7M	4.7	0.215	0.176	1.80	2.40	3.00	3.30	M
PNR3015-6R8M	6.8	0.29	0.259	1.50	2.00	2.00	2.50	M
PNR3015-100M	10	0.46	0.357	1.50	2.00	1.50	2.00	M
PNR3015-150M	15	0.85	0.695	1.00	1.20	1.40	1.80	M
PNR3015-220M	22	0.975	0.762	0.75	0.90	1.15	1.40	M
PNR3015-470M	47	1.88	1.45	0.45	0.58	0.65	0.88	M

## ● PNR4012 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR4012-R68N	0.68	0.048	0.037	4.00	4.70	5.00	5.60	
PNR4012-1R0N	1	0.066	0.053	3.60	4.20	4.50	5.30	N
PNR4012-1R5N	1.5	0.07	0.056	3.20	3.90	3.90	4.50	N
PNR4012-2R2M	2.2	0.102	0.082	2.30	2.80	2.50	2.80	M
PNR4012-3R3M	3.3	0.145	0.096	2.20	2.50	2.30	2.60	M
PNR4012-4R7M	4.7	0.187	0.15	1.90	2.20	2.30	2.60	M
PNR4012-6R8M	6.8	0.255	0.188	1.60	1.90	1.60	2.20	M
PNR4012-100M	10	0.408	0.325	1.10	1.50	1.40	1.80	M
PNR4012-150M	15	0.632	0.506	0.90	1.25	1.20	1.60	M
PNR4012-220M	22	0.763	0.611	0.75	0.95	1.10	1.35	M

## ● PNR4020 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	μH	Ω		A		A		M=±20% N=±30%
Symbol	L	DCR		Irms		Isat		
PNR4020-R47N	0.47	0.032	0.021	6.40	7.50	10.00	12.00	
PNR4020-R68N	0.68	0.034	0.026	4.30	5.00	8.00	9.00	N
PNR4020-1R0N	1	0.039	0.032	4.00	4.50	7.70	7.70	N

## ELECTRICAL CHARACTERISTICS

## ● PNR4020 Series

Part Number	Inductance	DC Resistance		Heat Rating Current		Saturation Current		Inductance Tolerance
	@100kHz,1V	Max.	Typ.	Max.	Typ.	Max.	Typ.	
Units	$\mu\text{H}$	$\Omega$		A		A		M=±20% N=±30%
Symbol	L	DCR		I <sub>rms</sub>		I <sub>sat</sub>		
PNR4020-1R5N	1.5	0.049	0.039	3.50	3.70	7.00	7.30	
PNR4020-2R2M	2.2	0.093	0.073	3.00	3.50	6.50	7.00	M
PNR4020-3R3M	3.3	0.117	0.093	2.50	3.20	5.00	5.50	M
PNR4020-4R7M	4.7	0.153	0.123	2.20	2.50	4.50	4.70	M
PNR4020-6R8M	6.8	0.205	0.169	2.00	2.40	3.50	4.20	M
PNR4020-100M	10	0.216	0.19	2.00	2.35	2.80	3.50	M
PNR4020-220M	22	0.6	0.505	1.20	1.50	2.10	2.50	M

△1: All test data is referenced to 20°C ambient;

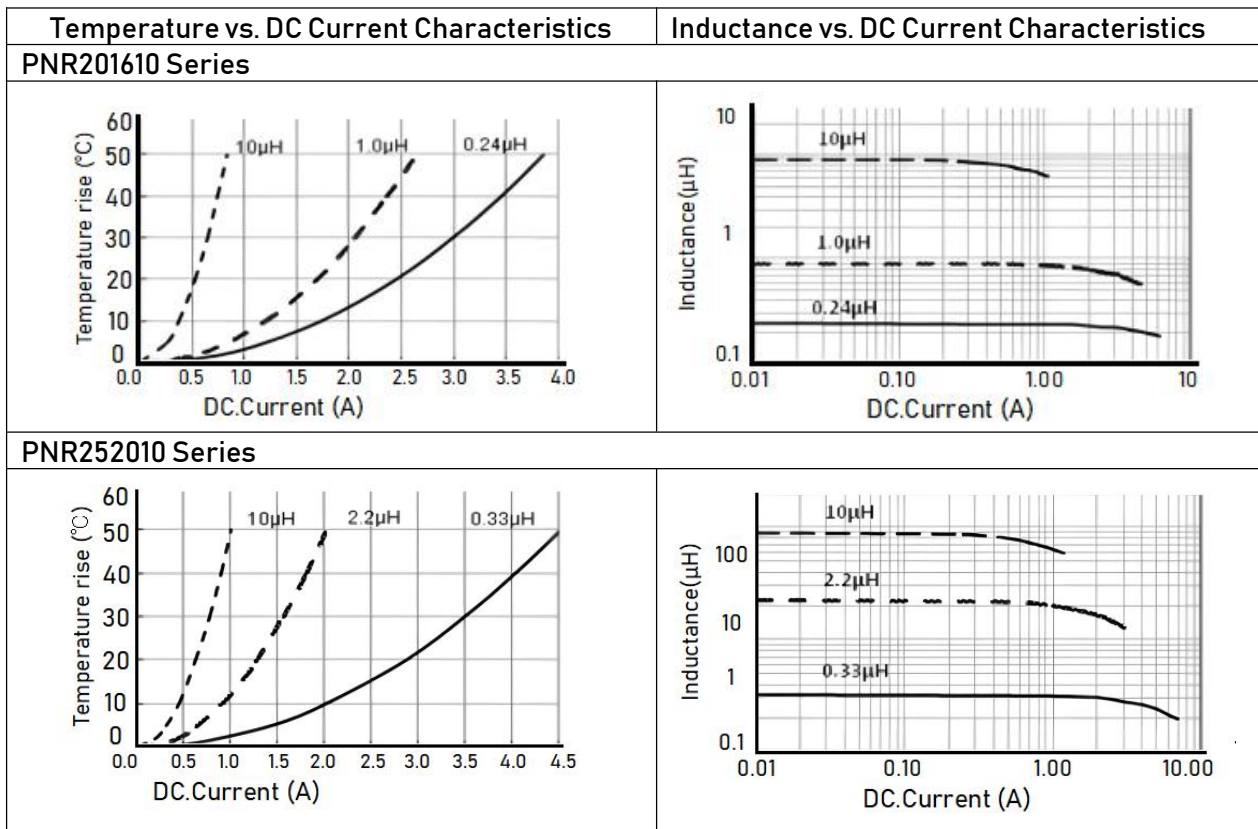
△2: Rated current: I<sub>sat</sub> or I<sub>rms</sub>, whichever is smaller;

△I<sub>sat</sub>: DC current at which the inductance drops approximate 30% from its value without current;

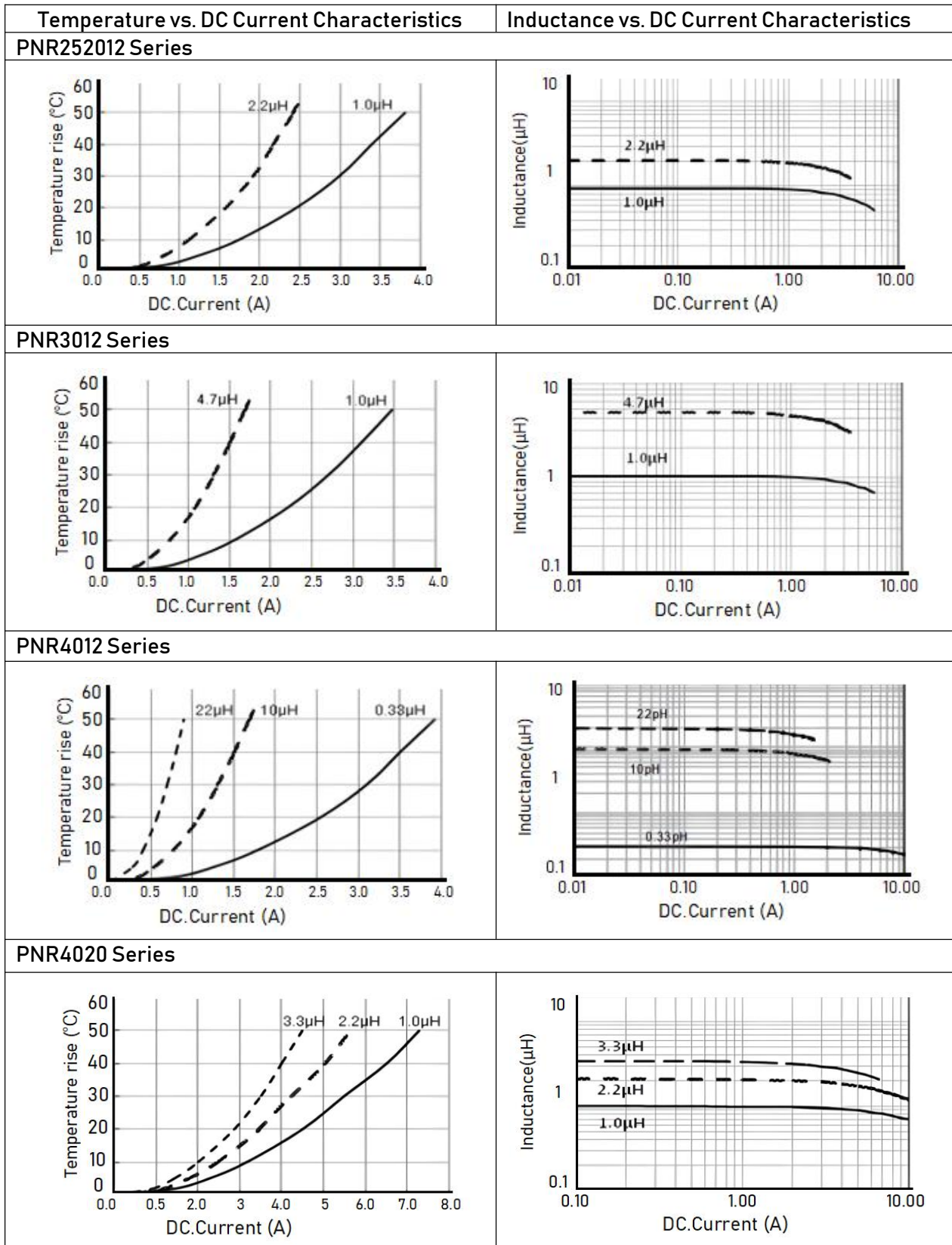
△I<sub>rms</sub>: DC current that causes the temperature rise ( $\Delta T=40^\circ\text{C}$ ) from 20°C ambient.

△PNR series is processed with surface coating technology, coated by the resin of high voltage insulation level coating on the core surface evenly by automatic equipment, to improve the voltage insulation and corrosion resistance of the core.

## TYPICAL ELECTRICAL CHARACTERISTICS



TYPICAL ELECTRICAL CHARACTERISTICS



Note:

**This series product is not applies in automotive or related products. Otherwise, we will shall not bear than the resulting all the problems of quality and responsibility.**

Please be sure to request approval specifications that provide further details of the products. Kindly not that the content of these specifications are subject to change or may be discontinued without prior notice. This product may not be designed/used in medical or high risk applications without APV approval.

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