Metal Composite Power Inductors MPXV Automotive Grade

Overview

The KEMET MPXV metal composite inductors are ideal for use in DC to DC switching power supplies for automotive applications. The metal composite core has high saturation capabilities maintaining functionality with high current transients and is characterized by temperature stable inductance.

Applications

Automotive ECU applications such as:

- LED headlights
- Meter cluster panels
- Head-up displays (HUD)
- Electric water pumps (EWP)
- Electric oil pumps (EOP)
- Electric power steering (EPS)

Benefits

- Metal composite powder
- Shielded construction, SMD configuration
- Inductance range from 0.10 to 100.00 µH
- Operating temperature up to +155°C
- Low acoustic noise
- Low magnetic flux leakage
- AEC–Q200 qualified



Part Number System

MPXV	1	D0520		L	1R5
Series	Version	Size Code		Inductor	Inductance Code µH
MPXV	1	D0520 = 5x5x2.0 mm D0530 = 5x5x3.0 mm D0618 = 6x6x1.8 mm D0624 = 6x6x2.4 mm D0630 = 6x6x3.0 mm D0650 = 6x6x5.0 mm D0830 = 8x8x3.0 mm D0840 = 8x8x4.0 mm	D1040 = 10x10x4.0 mm D1054 = 10x10x5.4 mm D1235 = 12x12x3.5 mm D1250 = 12x12x5.0 mm D1264 = 12x12x6.4 mm D1740 = 17x17x4.0 mm D1770 = 17x17x7.0 mm D2213 = 22x22x13.0 mm		The first two digits represent the inductance value. The third digit indicates the number of zeros to be added. R = decimal point Examples: 100 = 10.00 µH R68 = 0.68 µH 1R5 = 1.50 µH 101 = 100.00 µH

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Performance Characteristics

Item	Performance Characteristics
Operating Temperature	−55°C to +155°C (including self-temperature rise)
Rated Inductance Range	0.10 – 100.00 µH at 100 kHz, 1 mA
Inductance Tolerance	±20%
Rated DC Resistance Range	0.48 – 341.2 mΩ maximum
Rated Current Range	2 – 90 A

Table 1 – Ratings & Part Number Reference

Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D0520LR15	0.15	±20%	3.40	3.90	16.9	15.5	22.0	190.0	0.23
MPXV1D0520LR22	0.22	±20%	4.30	5.00	15.0	14.5	19.0	150.0	0.23
MPXV1D0520LR33	0.33	±20%	5.30	6.20	13.4	11.0	16.0	110.0	0.23
MPXV1D0520LR47	0.47	±20%	6.70	7.80	12.0	9.0	14.0	87.0	0.23
MPXV1D0520LR68	0.68	±20%	10.60	12.20	9.5	7.5	11.0	74.0	0.23
MPXV1D0520L1R0	1.00	±20%	16.40	18.90	7.6	7.0	9.0	62.0	0.23
MPXV1D0520L1R5	1.50	±20%	30.90	35.60	5.6	4.5	7.0	44.0	0.23
MPXV1D0520L2R2	2.20	±20%	35.10	40.40	5.2	4.5	6.5	39.0	0.23
MPXV1D0520L3R3	3.30	±20%	55.80	64.20	4.1	3.5	5.5	34.0	0.23
MPXV1D0520L4R7	4.70	±20%	84.00	96.60	3.4	3.5	4.5	26.0	0.23
MPXV1D0520L6R8	6.80	±20%	113.40	130.50	2.9	2.5	4.0	22.0	0.23
MPXV1D0520L100	10.00	±20%	193.70	222.80	2.2	2.5	3.5	20.0	0.23
MPXV1D0530LR15	0.15	±20%	2.40	2.80	22.0	15.0	21.0	180.0	0.33
MPXV1D0530LR22	0.22	±20%	3.40	3.90	18.4	11.0	16.0	140.0	0.33
MPXV1D0530LR33	0.33	±20%	4.50	5.20	16.0	10.5	15.0	110.0	0.33
MPXV1D0530LR47	0.47	±20%	6.00	6.90	13.8	9.0	13.0	91.0	0.33
MPXV1D0530LR68	0.68	±20%	7.10	8.20	12.6	8.0	12.0	70.0	0.33
MPXV1D0530L1R0	1.00	±20%	10.00	11.50	10.7	7.5	10.5	52.0	0.33
MPXV1D0530L1R5	1.50	±20%	15.30	17.70	8.6	5.5	8.0	45.0	0.33
MPXV1D0530L2R2	2.20	±20%	21.40	24.60	7.3	4.5	6.5	35.0	0.33
MPXV1D0530L3R3	3.30	±20%	37.20	42.80	5.5	4.0	5.5	29.0	0.33
MPXV1D0530L4R7	4.70	±20%	54.10	62.20	4.6	3.0	4.5	26.0	0.33
MPXV1D0530L6R8	6.80	±20%	93.70	107.80	3.5	2.5	4.0	23.0	0.33
MPXV1D0530L100	10.00	±20%	121.80	140.10	3.1	2.5	3.5	18.0	0.33
MPXV1D0530L150	15.00	±20%	186.50	214.60	2.5	2.0	3.0	15.0	0.33
MPXV1D0530L220	22.00	±20%	296.60	341.20	2.0	1.8	2.5	12.0	0.33
Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Irms[1]	Isat[2]	Isat[3]	Self-Resonance Frequency (MHz)	Weight (g)
					Rated Current (A)				

[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

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Table 1 – Ratings & Part Number Reference cont.

Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D0618LR10	0.10	±20%	2.40	2.80	18.9	22.5	40.0	230.0	0.37
MPXV1D0618LR15	0.15	±20%	3.20	3.80	16.2	20.0	30.0	170.0	0.37
MPXV1D0618LR22	0.22	±20%	4.60	5.30	13.7	16.0	26.0	140.0	0.37
MPXV1D0618LR33	0.33	±20%	5.30	6.10	12.7	15.0	20.0	96.0	0.37
MPXV1D0618LR47	0.47	±20%	7.40	8.50	10.7	11.0	17.0	95.0	0.37
MPXV1D0618LR68	0.68	±20%	11.00	12.70	8.8	9.0	13.0	95.0	0.37
MPXV1D0618L1R0	1.00	±20%	16.70	19.30	7.1	8.0	11.0	55.0	0.37
MPXV1D0618L1R5	1.50	±20%	22.40	25.80	6.2	6.5	10.5	40.0	0.37
MPXV1D0618L2R2	2.20	±20%	29.40	33.80	5.4	6.0	9.0	39.0	0.37
MPXV1D0618L3R3	3.30	±20%	53.40	61.50	4.0	4.5	6.5	30.0	0.37
MPXV1D0618L4R7	4.70	±20%	72.50	83.40	3.4	4.0	6.0	26.0	0.37
MPXV1D0624LR10	0.10	±20%	1.50	1.80	26.6	25.0	42.0	210.0	0.50
MPXV1D0624LR15	0.15	±20%	2.00	2.30	23.2	20.5	37.0	130.0	0.50
MPXV1D0624LR22	0.22	±20%	2.80	3.30	19.4	19.5	29.0	120.0	0.50
MPXV1D0624LR33	0.33	±20%	3.60	4.20	17.2	17.5	22.5	91.0	0.50
MPXV1D0624LR47	0.47	±20%	4.50	5.20	15.4	14.5	20.0	71.0	0.50
MPXV1D0624LR68	0.68	±20%	6.70	7.80	12.6	11.5	16.0	57.0	0.50
MPXV1D0624L1R0	1.00	±20%	9.10	10.50	10.8	9.0	13.0	46.0	0.50
MPXV1D0624L1R5	1.50	±20%	16.10	18.50	8.1	7.0	10.0	43.0	0.50
MPXV1D0624L2R2	2.20	±20%	26.60	30.70	6.3	6.0	9.0	34.0	0.50
MPXV1D0624L3R3	3.30	±20%	29.40	33.80	6.0	5.0	8.0	27.0	0.50
MPXV1D0624L4R7	4.70	±20%	44.00	50.60	4.9	5.5	6.5	22.0	0.50
MPXV1D0624L6R8	6.80	±20%	58.60	67.40	4.3	4.5	5.5	18.0	0.50
MPXV1D0624L100	10.00	±20%	98.40	113.20	3.3	3.5	4.5	16.0	0.50
MPXV1D0630LR10	0.10	±20%	1.30	1.50	31.1	35.0	50.0	200.0	0.62
MPXV1D0630LR15	0.15	±20%	1.60	1.90	27.6	24.0	40.0	130.0	0.62
MPXV1D0630LR22	0.22	±20%	2.20	2.60	23.3	22.0	33.0	110.0	0.62
MPXV1D0630LR33	0.33	±20%	2.70	3.20	21.1	17.0	25.0	84.0	0.62
MPXV1D0630LR47	0.47	±20%	3.50	4.00	18.7	15.0	21.0	70.0	0.62
MPXV1D0630LR68	0.68	±20%	5.30	6.20	15.1	11.5	17.0	55.0	0.62
MPXV1D0630L1R0	1.00	±20%	7.10	8.20	13.1	9.0	13.0	43.0	0.62
MPXV1D0630L1R5	1.50	±20%	11.00	12.70	10.5	7.0	11.0	38.0	0.62
MPXV1D0630L2R2	2.20	±20%	15.90	18.30	8.7	6.5	9.0	30.0	0.62
MPXV1D0630L3R3	3.30	±20%	26.30	30.30	6.8	5.0	7.0	26.0	0.62
MPXV1D0630L4R7	4.70	±20%	31.80	36.70	6.2	4.5	6.5	21.0	0.62
MPXV1D0630L6R8	6.80	±20%	44.20	50.90	5.2	4.0	5.5	16.0	0.62
MPXV1D0630L100	10.00	±20%	67.80	78.00	4.2	3.5	4.5	15.0	0.62
MPXV1D0630L150	15.00	±20%	113.20	130.20	3.3	3.0	4.0	13.0	0.62
MPXV1D0630L220	22.00	±20%	162.00	186.30	2.7	2.5	3.5	9.6	0.62
Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Irms[1] / Isat[2] / Isat[3] Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)

[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

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Table 1 – Ratings & Part Number Reference cont.

Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D0650LR68	0.68	±20%	3.60	4.10	18.8	12.0	17.0	54.0	1.05
MPXV1D0650L1R0	1.00	±20%	5.10	6.00	15.6	9.0	13.0	42.0	1.05
MPXV1D0650L1R5	1.50	±20%	7.20	8.30	13.2	7.5	12.0	35.0	1.05
MPXV1D0650L2R2	2.20	±20%	10.00	11.60	11.2	7.0	10.0	30.0	1.05
MPXV1D0650L3R3	3.30	±20%	16.40	18.90	8.7	5.0	8.0	26.0	1.05
MPXV1D0650L4R7	4.70	±20%	27.80	32.00	6.7	4.5	6.5	19.0	1.05
MPXV1D0650L6R8	6.80	±20%	38.40	44.20	5.7	4.0	5.5	17.0	1.05
MPXV1D0650L100	10.00	±20%	53.40	61.40	4.8	3.5	4.5	13.0	1.05
MPXV1D0830LR22	0.22	±20%	1.60	1.90	30.7	27.0	43.0	140.0	1.07
MPXV1D0830LR33	0.33	±20%	2.30	2.70	25.8	22.5	35.0	83.0	1.07
MPXV1D0830LR47	0.47	±20%	2.70	3.10	24.0	20.5	30.0	80.0	1.07
MPXV1D0830LR68	0.68	±20%	3.80	4.40	20.1	20.0	28.0	55.0	1.07
MPXV1D0830L1R0	1.00	±20%	5.00	5.70	17.6	16.0	23.0	46.0	1.07
MPXV1D0830L1R5	1.50	±20%	7.90	9.10	14.0	13.0	18.0	37.0	1.07
MPXV1D0830L2R2	2.20	±20%	11.80	13.60	11.4	11.0	14.0	30.0	1.07
MPXV1D0830L3R3	3.30	±20%	19.40	22.30	8.9	9.0	12.5	24.0	1.07
MPXV1D0830L4R7	4.70	±20%	25.80	29.70	7.7	7.5	10.5	18.0	1.07
MPXV1D0830L6R8	6.80	±20%	32.90	37.90	6.8	7.5	10.0	16.0	1.07
MPXV1D0830L100	10.00	±20%	53.60	61.70	5.4	5.5	8.0	12.0	1.07
MPXV1D0830L150	15.00	±20%	82.30	94.60	4.3	4.5	6.5	11.0	1.07
MPXV1D0830L220	22.00	±20%	116.90	134.50	3.6	3.5	5.0	8.1	1.07
MPXV1D0830L330	33.00	±20%	199.60	229.50	2.8	3.0	4.0	6.9	1.07
MPXV1D0840LR22	0.22	±20%	1.20	1.50	35.4	35.0	53.0	100.0	1.45
MPXV1D0840LR33	0.33	±20%	2.00	2.40	27.7	30.0	45.0	77.0	1.45
MPXV1D0840LR47	0.47	±20%	2.30	2.70	25.8	26.0	38.0	59.0	1.45
MPXV1D0840LR68	0.68	±20%	3.10	3.60	22.4	20.5	30.0	46.0	1.45
MPXV1D0840L1R0	1.00	±20%	3.60	4.20	20.8	19.5	28.0	40.0	1.45
MPXV1D0840L1R5	1.50	±20%	5.80	6.80	16.2	14.0	19.0	29.0	1.45
MPXV1D0840L2R2	2.20	±20%	7.50	8.70	14.3	13.0	17.0	27.0	1.45
MPXV1D0840L3R3	3.30	±20%	12.10	14.00	11.3	11.0	15.0	22.0	1.45
MPXV1D0840L4R7	4.70	±20%	20.40	23.50	8.7	7.5	11.0	17.0	1.45
MPXV1D0840L6R8	6.80	±20%	29.00	33.40	7.3	6.5	9.0	13.0	1.45
MPXV1D0840L100	10.00	±20%	43.10	49.60	6.0	5.5	7.5	12.0	1.45
MPXV1D0840L150	15.00	±20%	56.50	65.00	5.2	4.5	6.5	9.0	1.45
MPXV1D0840L220	22.00	±20%	85.40	98.30	4.2	4.0	5.5	7.7	1.45
MPXV1D0840L330	33.00	±20%	134.10	154.20	3.4	3.5	4.5	6.2	1.45
MPXV1D0840L470	47.00	±20%	197.10	226.70	2.8	2.5	3.5	5.7	1.45
Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Irms[1]	Isat[2]	Isat[3]	Self-Resonance Frequency (MHz)	Weight (g)
					Rated Current (A)				

[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

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Table 1 – Ratings & Part Number Reference cont.

Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D1040LR22	0.22	±20%	1.40	1.60	32.7	40.0	60.0	108.0	2.20
MPXV1D1040LR33	0.33	±20%	1.60	1.90	29.7	31.0	47.0	75.0	2.20
MPXV1D1040LR47	0.47	±20%	2.10	2.40	26.4	29.0	42.0	65.0	2.20
MPXV1D1040LR68	0.68	±20%	2.70	3.20	23.1	23.0	34.5	47.0	2.20
MPXV1D1040L1R0	1.00	±20%	3.30	3.80	21.1	19.5	29.0	35.0	2.20
MPXV1D1040L1R5	1.50	±20%	4.60	5.40	17.7	18.0	26.0	30.0	2.20
MPXV1D1040L2R2	2.20	±20%	6.80	7.90	14.6	13.0	18.5	23.0	2.20
MPXV1D1040L3R3	3.30	±20%	11.10	12.80	11.4	11.0	15.0	18.0	2.20
MPXV1D1040L4R7	4.70	±20%	13.80	15.90	10.3	10.0	14.0	17.0	2.20
MPXV1D1040L6R8	6.80	±20%	20.90	24.10	8.3	8.0	11.5	14.0	2.20
MPXV1D1040L100	10.00	±20%	29.60	34.10	7.0	7.5	10.5	11.0	2.20
MPXV1D1040L150	15.00	±20%	44.50	51.20	5.7	5.5	8.5	8.0	2.20
MPXV1D1040L220	22.00	±20%	66.20	76.10	4.7	5.0	7.0	7.0	2.20
MPXV1D1040L330	33.00	±20%	104.10	119.70	3.7	3.5	5.0	5.0	2.20
MPXV1D1040L470	47.00	±20%	158.80	182.60	3.0	3.0	4.0	4.5	2.20
MPXV1D1054LR33	0.33	±20%	1.10	1.27	37.3	45.0	60.0	56.0	3.00
MPXV1D1054LR47	0.47	±20%	1.60	1.84	30.9	39.0	51.0	46.0	3.00
MPXV1D1054LR68	0.68	±20%	2.00	2.30	27.6	27.0	37.5	38.0	3.00
MPXV1D1054L1R0	1.00	±20%	2.90	3.34	22.9	20.0	27.0	31.0	3.00
MPXV1D1054L2R2	2.20	±20%	4.70	5.41	18.0	12.0	16.5	21.0	3.00
MPXV1D1054L3R3	3.30	±20%	7.30	8.40	14.4	11.0	15.0	17.0	3.00
MPXV1D1054L4R7	4.70	±20%	11.90	13.69	11.3	10.0	14.0	14.0	3.00
MPXV1D1054L100	10.00	±20%	24.00	27.60	7.9	8.5	12.0	9.5	3.00
MPXV1D1054L150	15.00	±20%	34.00	39.10	6.7	8.0	11.0	7.5	3.00
MPXV1D1054L220	22.00	±20%	47.00	54.05	5.7	5.0	7.0	6.5	3.00
MPXV1D1054L330	33.00	±20%	70.00	80.50	4.6	4.4	6.0	5.0	3.00
MPXV1D1054L470	47.00	±20%	112.00	128.80	3.7	3.4	4.6	4.0	3.00
MPXV1D1235LR15	0.15	±20%	1.10	1.30	39.9	54.0	85.0	128.0	2.90
MPXV1D1235LR22	0.22	±20%	1.30	1.60	35.2	50.0	75.0	100.0	2.90
MPXV1D1235LR33	0.33	±20%	1.50	1.80	33.4	40.0	55.0	63.0	2.90
MPXV1D1235LR47	0.47	±20%	2.00	2.30	28.9	31.0	45.0	58.0	2.90
MPXV1D1235LR68	0.68	±20%	2.50	2.90	25.9	28.0	40.0	46.0	2.90
MPXV1D1235L1R0	1.00	±20%	3.60	4.20	21.5	22.0	32.5	33.0	2.90
MPXV1D1235L1R5	1.50	±20%	5.20	6.00	17.9	19.0	28.0	29.0	2.90
MPXV1D1235L2R2	2.20	±20%	7.30	8.40	15.2	15.5	23.0	21.0	2.90
MPXV1D1235L3R3	3.30	±20%	10.60	12.20	12.5	12.0	18.0	18.0	2.90
MPXV1D1235L4R7	4.70	±20%	14.20	16.40	10.9	11.5	17.5	14.0	2.90
MPXV1D1235L6R8	6.80	±20%	18.80	21.70	9.4	9.5	14.0	12.0	2.90
Part Number	**Inductance (µH) at 100 kHz, 1 mA**	**Inductance Tolerance**	**DC Resistance (mΩ) Typical**	**DC Resistance (mΩ) Maximum**	**Irms[1]**	**Isat[2]**	**Isat[3]**	**Self-Resonance Frequency (MHz)**	**Weight (g)**
					Rated Current (A)				

[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

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Table 1 – Ratings & Part Number Reference cont.

Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D1235L100	10.00	±20%	30.40	35.00	7.4	8.5	12.0	9.5	2.90
MPXV1D1250LR22	0.22	±20%	1.00	1.20	42.7	55.0	85.0	95.0	4.20
MPXV1D1250LR33	0.33	±20%	1.10	1.30	41.6	45.0	65.0	68.0	4.20
MPXV1D1250LR47	0.47	±20%	1.50	1.80	34.8	37.0	55.0	54.0	4.20
MPXV1D1250LR68	0.68	±20%	1.70	2.00	32.7	30.0	45.0	45.0	4.20
MPXV1D1250L1R0	1.00	±20%	2.20	2.60	28.8	30.5	43.0	34.0	4.20
MPXV1D1250L1R5	1.50	±20%	3.10	3.60	24.2	22.0	32.0	25.0	4.20
MPXV1D1250L2R2	2.20	±20%	4.10	4.80	21.0	20.0	28.5	21.0	4.20
MPXV1D1250L3R3	3.30	±20%	6.40	7.40	16.8	15.0	22.0	17.0	4.20
MPXV1D1250L4R7	4.70	±20%	8.80	10.10	14.4	12.0	17.5	13.0	4.20
MPXV1D1250L6R8	6.80	±20%	13.40	15.50	11.6	10.0	14.0	10.0	4.20
MPXV1D1250L100	10.00	±20%	17.90	20.60	10.1	9.0	13.5	8.5	4.20
MPXV1D1250L150	15.00	±20%	26.80	30.80	8.2	7.5	11.0	7.0	4.20
MPXV1D1250L220	22.00	±20%	40.10	46.20	6.7	6.5	9.0	6.5	4.20
MPXV1D1250L330	33.00	±20%	62.60	72.00	5.4	5.0	7.5	5.0	4.20
MPXV1D1250L470	47.00	±20%	91.60	105.40	4.5	4.0	5.5	4.0	4.20
MPXV1D1250L680	68.00	±20%	141.70	163.00	3.6	3.0	4.5	3.0	4.20
MPXV1D1264LR22	0.22	±20%	0.90	1.10	53.0	68.0	100.0	90.0	5.50
MPXV1D1264LR33	0.33	±20%	1.00	1.20	45.6	48.0	70.0	61.0	5.50
MPXV1D1264LR47	0.47	±20%	1.40	1.70	38.2	40.0	58.0	53.0	5.50
MPXV1D1264LR68	0.68	±20%	1.70	1.90	35.4	34.0	50.0	45.0	5.50
MPXV1D1264L1R0	1.00	±20%	2.00	2.30	32.2	30.0	45.0	30.0	5.50
MPXV1D1264L1R5	1.50	±20%	2.50	2.90	28.8	25.0	35.5	24.0	5.50
MPXV1D1264L2R2	2.20	±20%	3.20	3.70	25.4	23.0	32.0	20.0	5.50
MPXV1D1264L3R3	3.30	±20%	5.30	6.20	19.7	16.5	22.5	16.0	5.50
MPXV1D1264L4R7	4.70	±20%	7.10	8.20	17.1	14.0	19.5	13.0	5.50
MPXV1D1264L6R8	6.80	±20%	10.60	12.30	14.0	11.5	16.0	10.0	5.50
MPXV1D1264L100	10.00	±20%	14.00	16.10	12.2	10.0	14.0	8.5	5.50
MPXV1D1264L150	15.00	±20%	21.60	24.90	9.8	8.0	11.5	6.5	5.50
MPXV1D1264L220	22.00	±20%	30.50	35.10	8.2	7.0	9.5	5.5	5.50
MPXV1D1740LR47	0.47	±20%	1.50	1.80	34.0	52.0	75.0	46.0	6.30
MPXV1D1740LR68	0.68	±20%	1.70	2.00	32.0	37.0	55.0	38.0	6.30
MPXV1D1740L1R0	1.00	±20%	2.00	2.30	30.0	28.0	43.0	30.0	6.30
MPXV1D1740L1R5	1.50	±20%	3.30	3.80	23.5	19.5	28.0	24.0	6.30
MPXV1D1740L2R2	2.20	±20%	4.30	5.00	20.5	19.5	28.0	17.0	6.30
MPXV1D1740L3R3	3.30	±20%	7.00	8.10	16.5	18.0	27.5	14.0	6.30
MPXV1D1740L4R7	4.70	±20%	9.00	10.40	14.5	13.0	18.5	12.0	6.30
MPXV1D1740L6R8	6.80	±20%	13.80	15.90	11.5	12.0	17.0	9.0	6.30
Part Number	**Inductance (µH) at 100 kHz, 1 mA**	**Inductance Tolerance**	**DC Resistance (mΩ) Typical**	**DC Resistance (mΩ) Maximum**	**Irms[1]**	**Isat[2]**	**Isat[3]**	**Self-Resonance Frequency (MHz)**	**Weight (g)**
					Rated Current (A)				

[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

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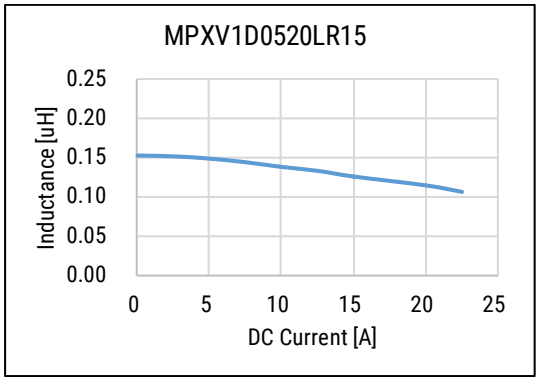
Table 1 – Ratings & Part Number Reference cont.

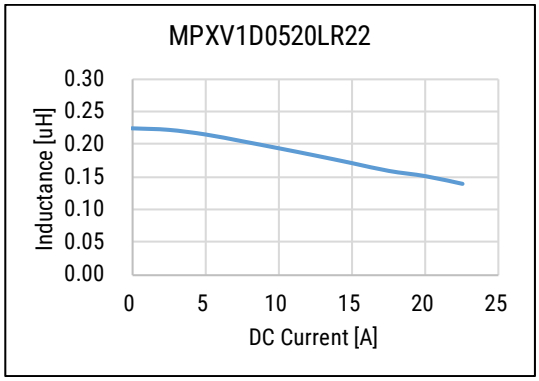
Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Rated Current (A)			Self-Resonance Frequency (MHz)	Weight (g)
					Irms[1] (Reference)	Isat[2] (Reference)	Isat[3] (Reference)		
MPXV1D1740L100	10.00	±20%	18.80	21.70	9.5	10.0	14.5	6.8	6.30
MPXV1D1740L150	15.00	±20%	30.60	35.20	7.5	9.0	13.0	6.0	6.30
MPXV1D1740L220	22.00	±20%	40.30	46.40	6.5	7.0	10.0	5.0	6.30
MPXV1D1740L330	33.00	±20%	71.50	82.30	5.0	5.5	8.0	4.0	6.30
MPXV1D1740L470	47.00	±20%	109.30	125.70	4.0	4.4	6.5	2.5	6.30
MPXV1D1770LR47	0.47	±20%	0.87	1.00	52.5	72.0	108.0	45.0	11.0
MPXV1D1770LR68	0.68	±20%	0.91	1.05	50.0	46.0	68.0	37.0	11.0
MPXV1D1770L1R0	1.00	±20%	1.50	1.80	38.0	42.0	62.0	27.0	11.0
MPXV1D1770L1R5	1.50	±20%	1.50	1.80	38.0	31.0	45.0	18.0	11.0
MPXV1D1770L2R2	2.20	±20%	2.20	2.60	31.0	25.0	34.0	15.0	11.0
MPXV1D1770L3R3	3.30	±20%	2.90	3.40	28.0	24.0	30.5	13.0	11.0
MPXV1D1770L4R7	4.70	±20%	4.10	4.80	23.5	24.0	33.5	10.0	11.0
MPXV1D1770L6R8	6.80	±20%	5.90	6.80	19.5	18.0	26.0	8.0	11.0
MPXV1D1770L100	10.00	±20%	10.60	12.20	14.5	11.5	16.5	7.0	11.0
MPXV1D1770L150	15.00	±20%	15.40	17.80	12.0	10.5	14.0	5.5	11.0
MPXV1D1770L220	22.00	±20%	19.90	22.90	10.5	8.5	12.0	4.5	11.0
MPXV1D1770L330	33.00	±20%	41.10	47.30	7.5	8.5	12.0	3.5	11.0
MPXV1D1770L470	47.00	±20%	54.60	62.80	6.5	7.5	10.5	2.8	11.0
MPXV1D1770L680	68.00	±20%	69.10	79.50	5.5	6.0	8.5	2.3	11.0
MPXV1D1770L101	100.00	±20%	95.90	110.30	4.5	5.6	7.5	1.8	11.0
MPXV1D2213LR47	0.47	±20%	0.42	0.48	90.0	96.0	140.0	45.0	37.0
MPXV1D2213LR68	0.68	±20%	0.72	0.83	78.0	80.0	115.0	34.0	37.0
MPXV1D2213L1R0	1.00	±20%	0.80	1.00	74.0	58.0	84.0	22.0	37.0
MPXV1D2213L1R5	1.50	±20%	0.96	1.20	68.0	42.0	60.0	17.0	37.0
MPXV1D2213L2R2	2.20	±20%	1.20	1.40	59.0	38.0	56.0	14.0	37.0
MPXV1D2213L3R3	3.30	±20%	1.50	1.80	54.0	34.0	48.0	11.0	37.0
MPXV1D2213L4R7	4.70	±20%	1.90	2.20	48.0	28.0	40.0	9.0	37.0
MPXV1D2213L6R8	6.80	±20%	2.80	3.30	39.0	30.0	42.0	6.5	37.0
MPXV1D2213L100	10.00	±20%	3.80	4.40	34.0	26.0	36.0	5.2	37.0
MPXV1D2213L150	15.00	±20%	5.90	6.80	27.5	22.0	30.0	4.0	37.0
MPXV1D2213L220	22.00	±20%	11.40	13.20	19.5	15.0	20.5	3.7	37.0
MPXV1D2213L330	33.00	±20%	13.90	16.00	17.5	15.0	20.5	2.9	37.0
MPXV1D2213L470	47.00	±20%	17.80	20.50	15.5	13.5	19.0	2.5	37.0
MPXV1D2213L680	68.00	±20%	26.70	30.80	12.5	10.0	14.0	2.1	37.0
MPXV1D2213L101	100.00	±20%	41.20	47.40	10.0	8.0	10.5	1.6	37.0
Part Number	Inductance (µH) at 100 kHz, 1 mA	Inductance Tolerance	DC Resistance (mΩ) Typical	DC Resistance (mΩ) Maximum	Irms[1]	Isat[2]	Isat[3]	Self-Resonance Frequency (MHz)	Weight (g)
					Rated Current (A)				

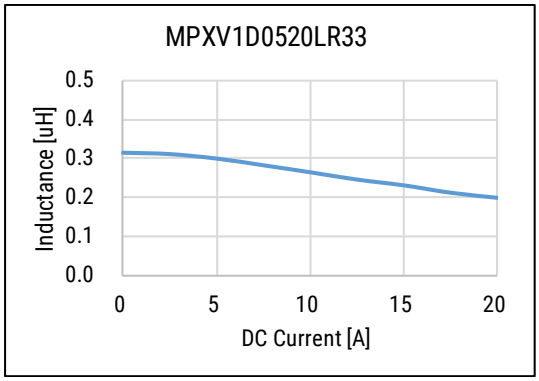
[1] T = 40 K rise at rated current
[2] Inductance drop 20% at rated current
[3] Inductance drop 30% at rated current
All electrical characteristics data is referenced to 25°C.

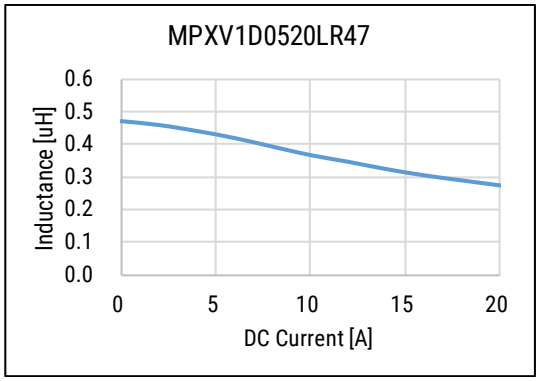
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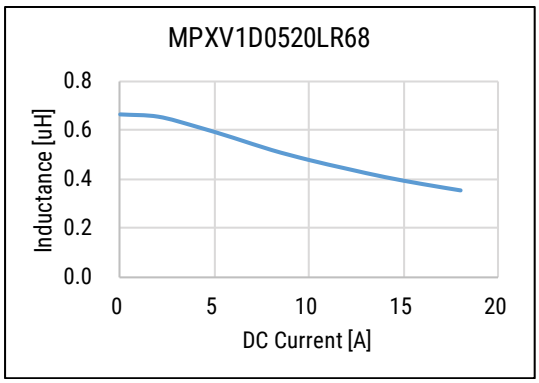
DC-Superposed Characteristics

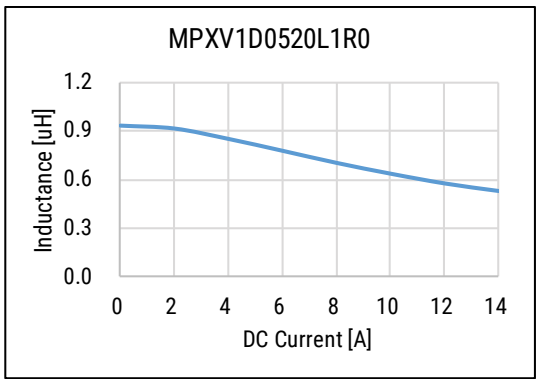


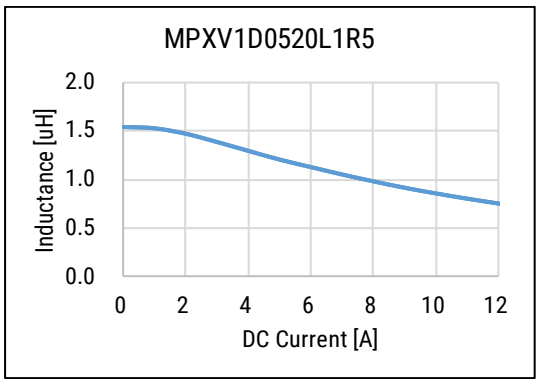


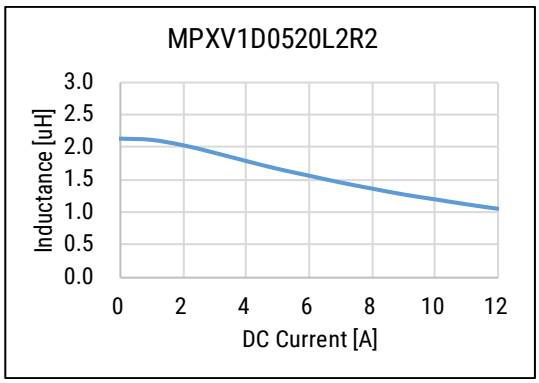






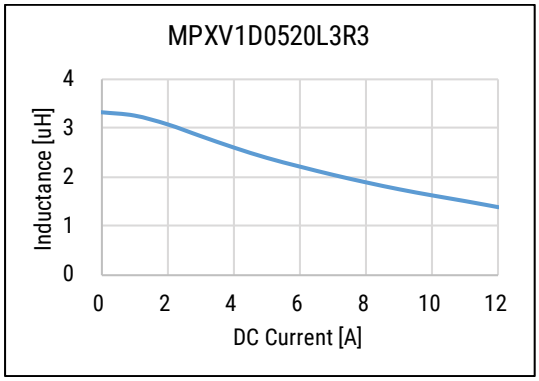


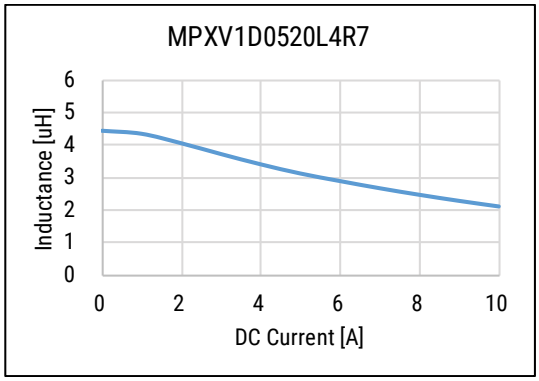


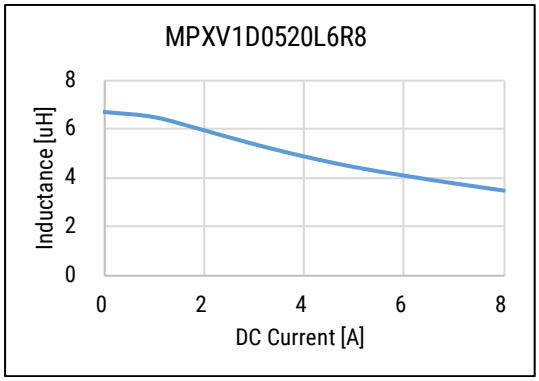


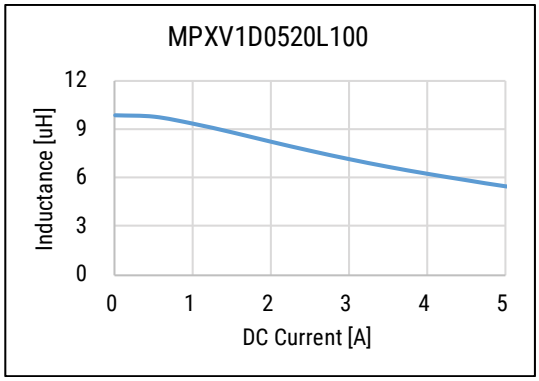
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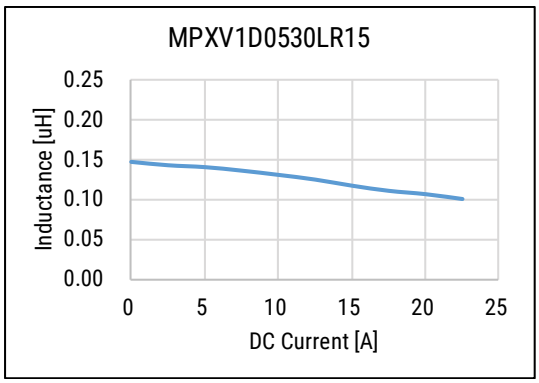
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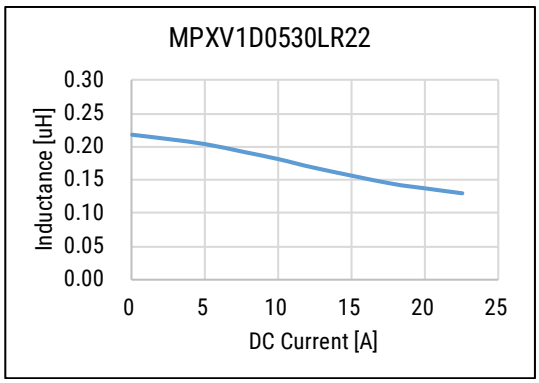


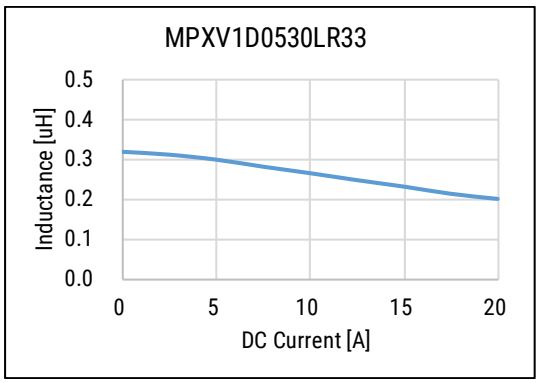


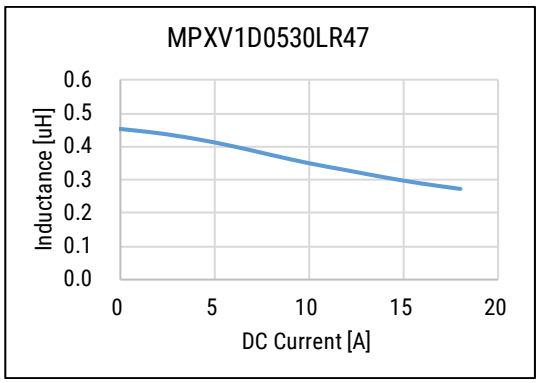






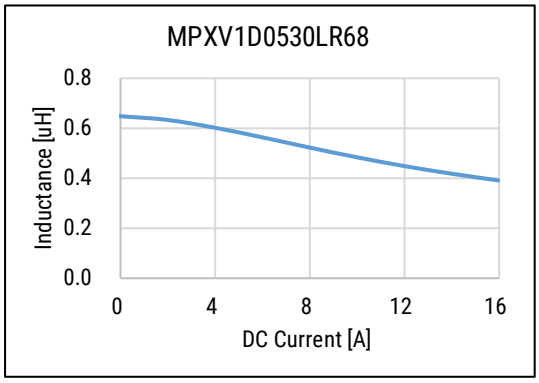


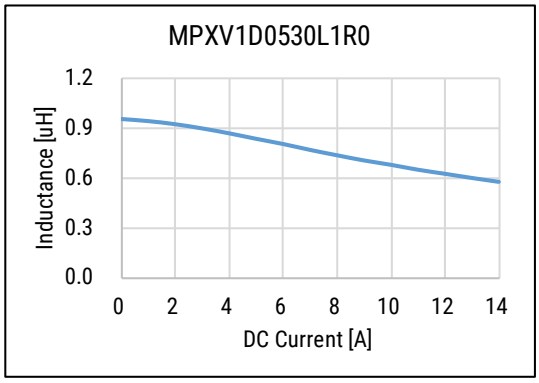


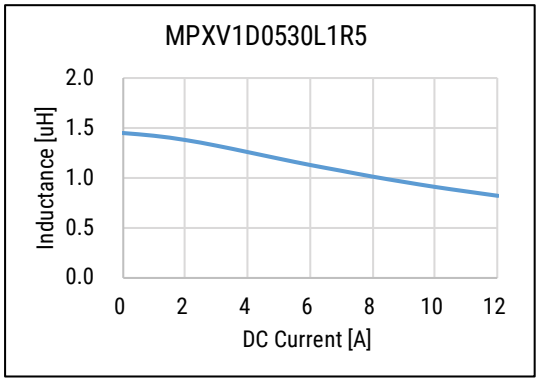


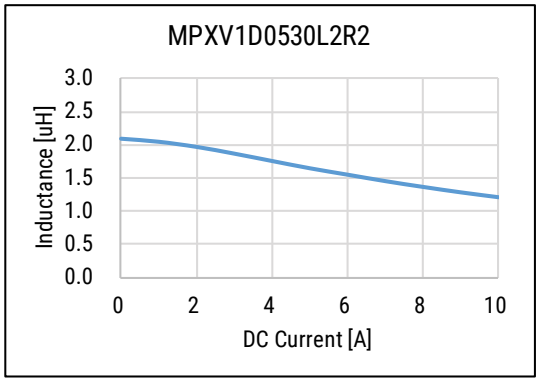
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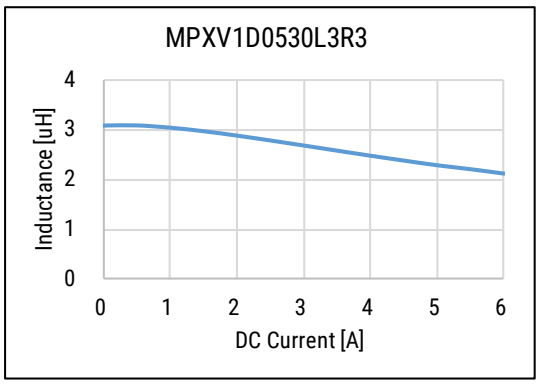
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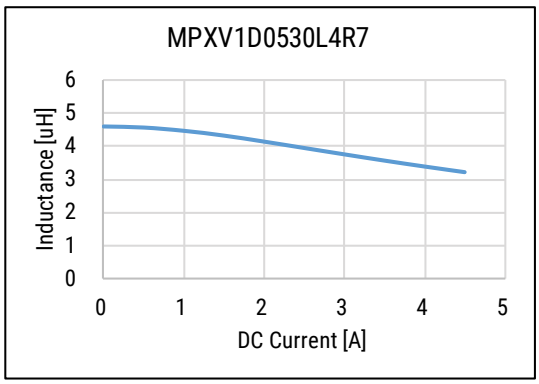


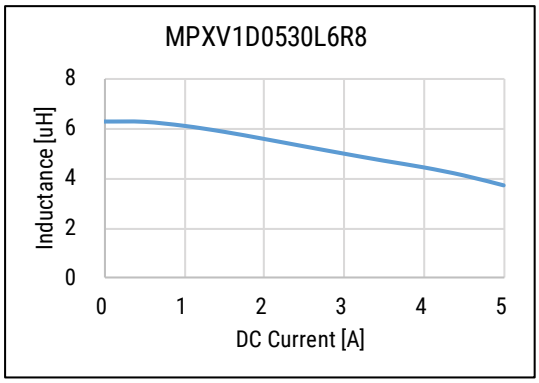


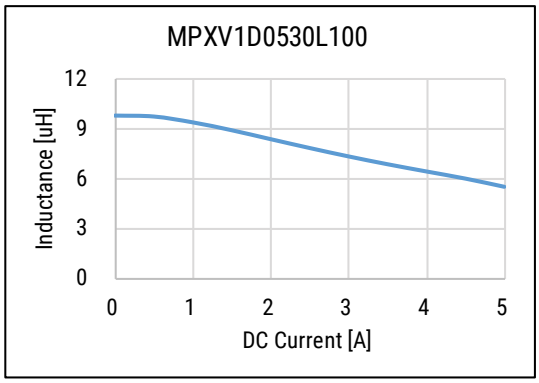






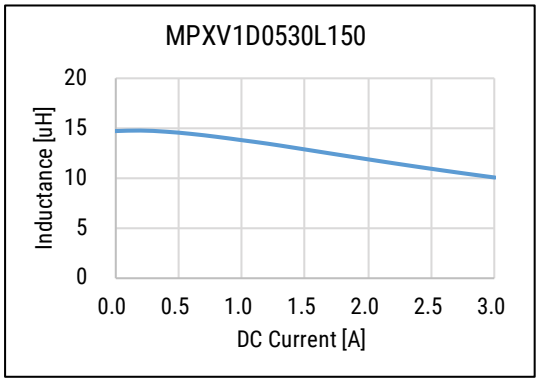


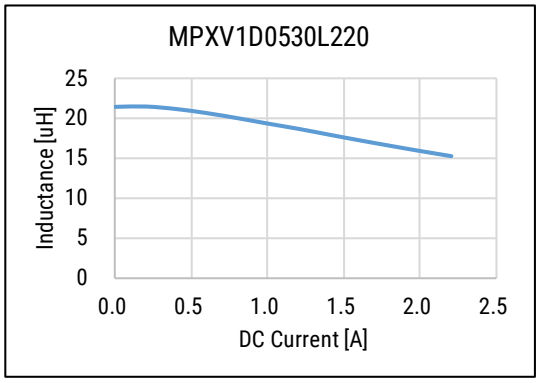


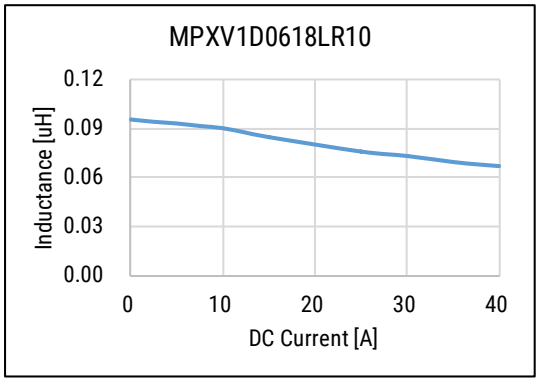


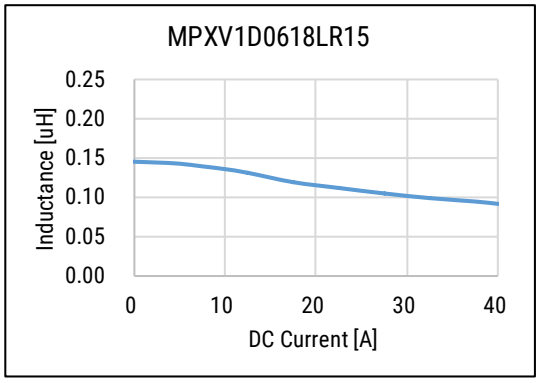
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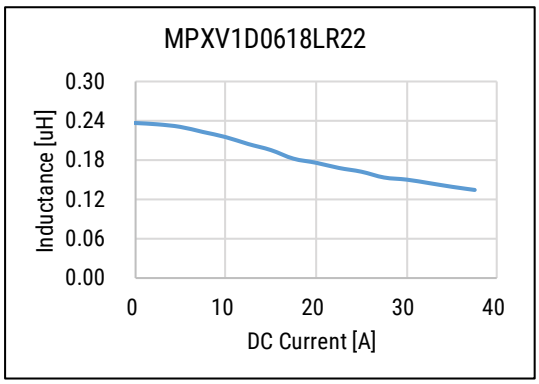
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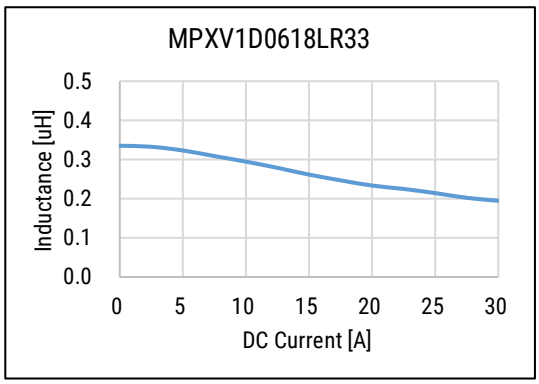


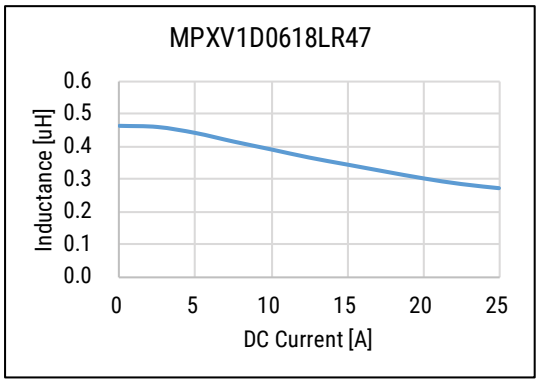


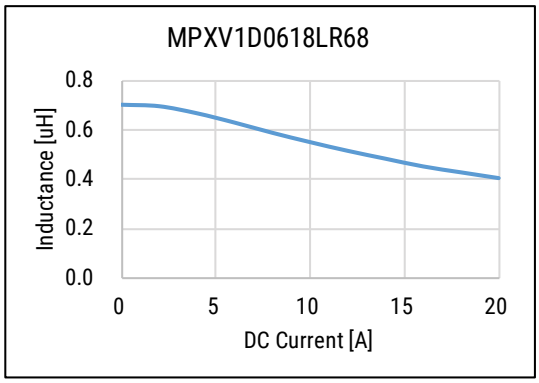






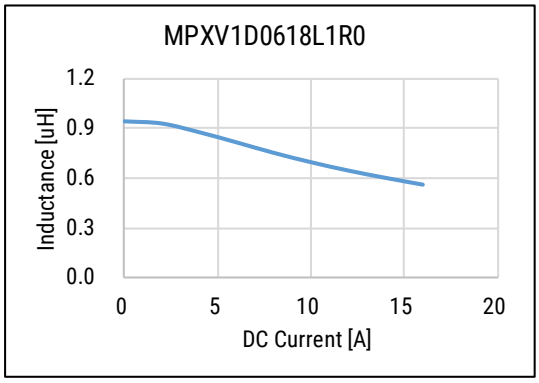


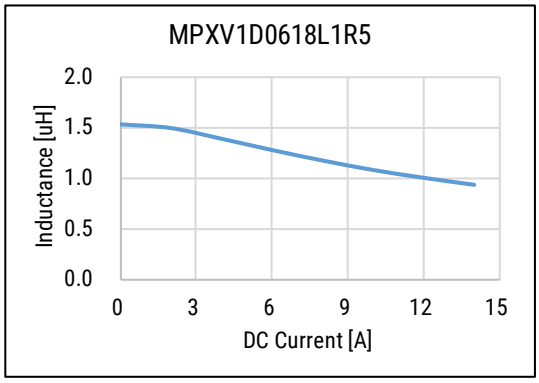


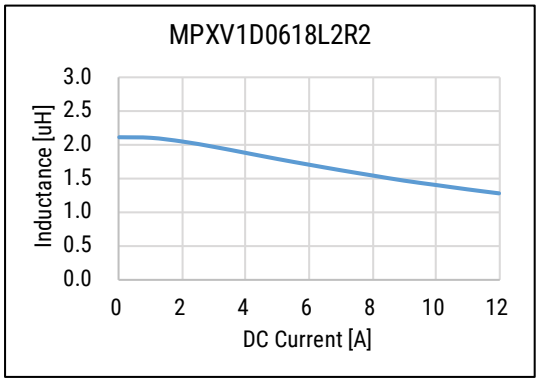


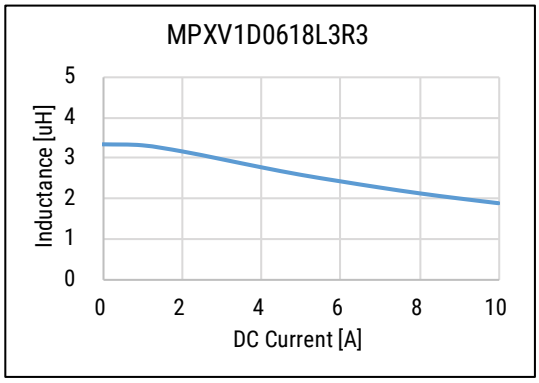
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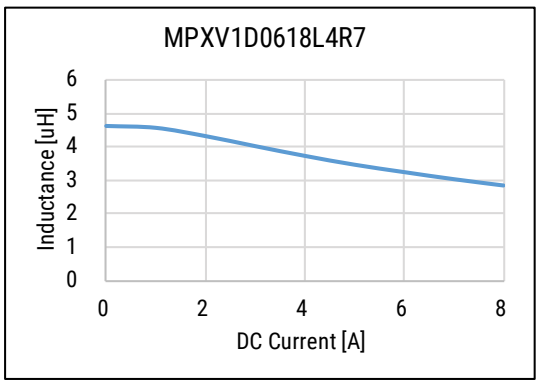
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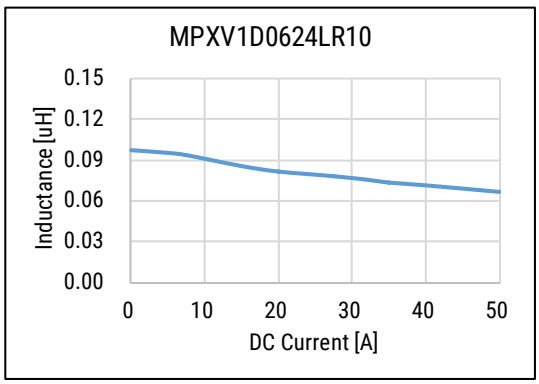


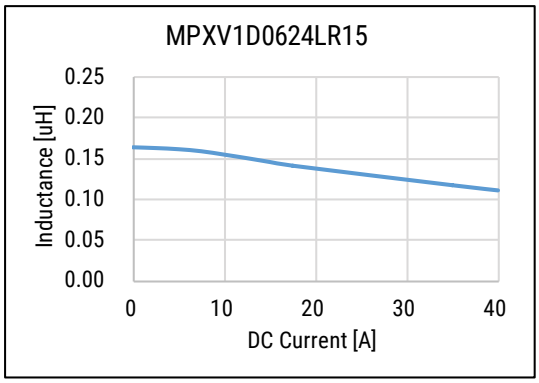


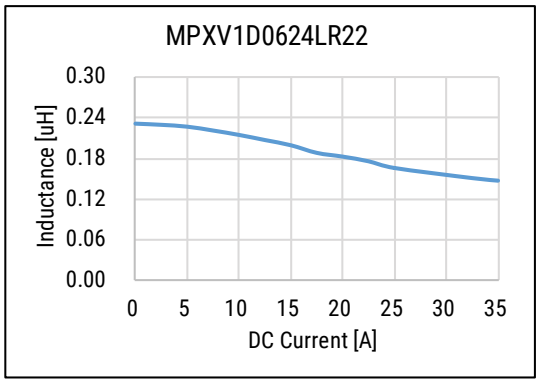






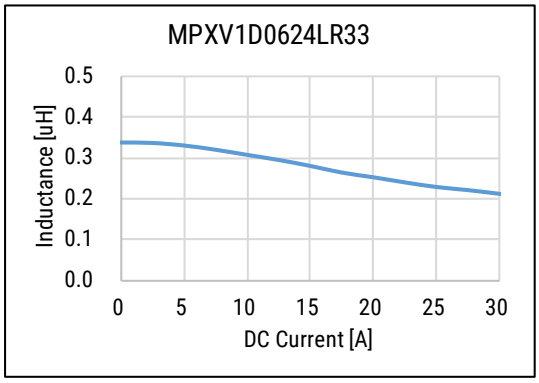


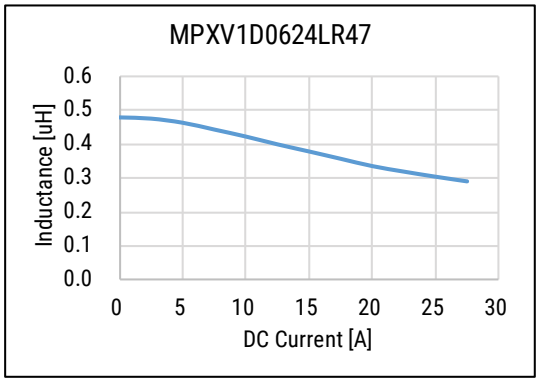


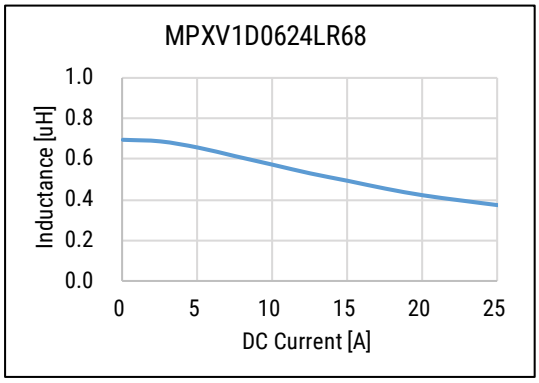


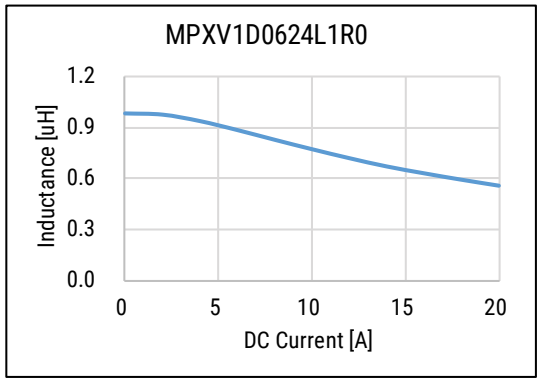
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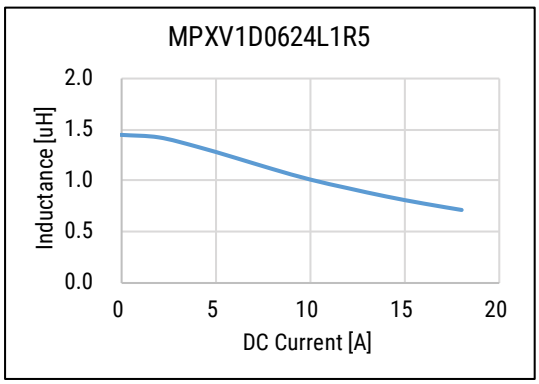
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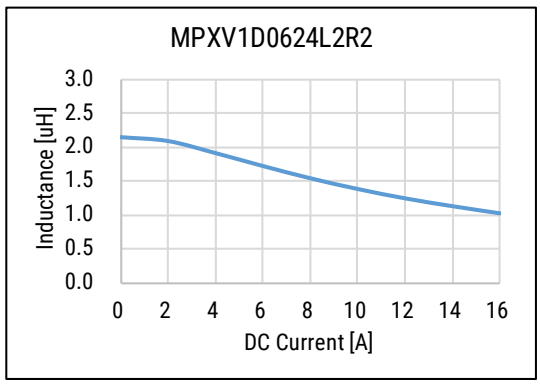


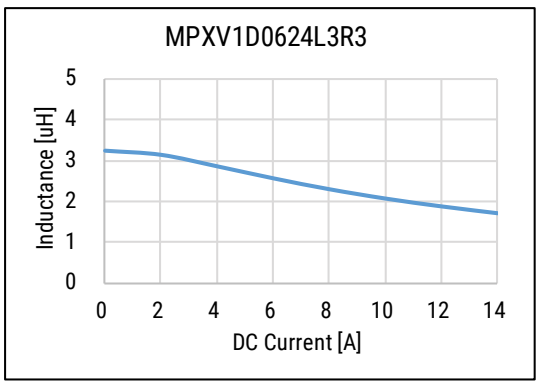


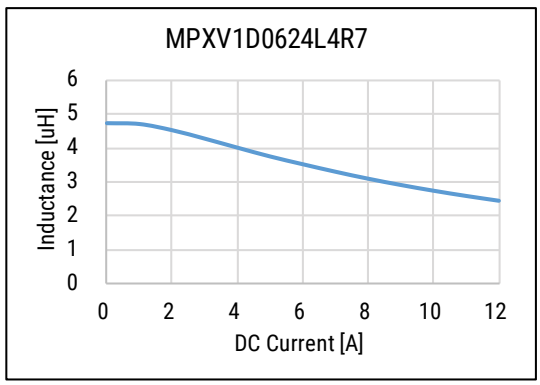






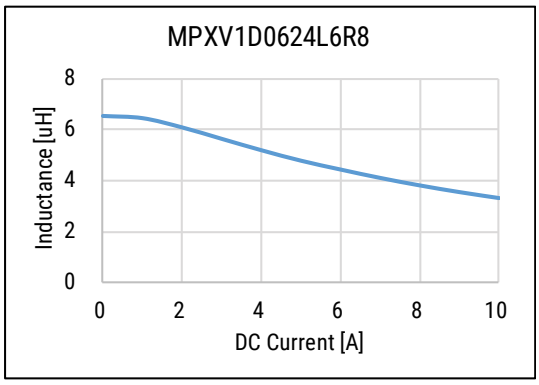


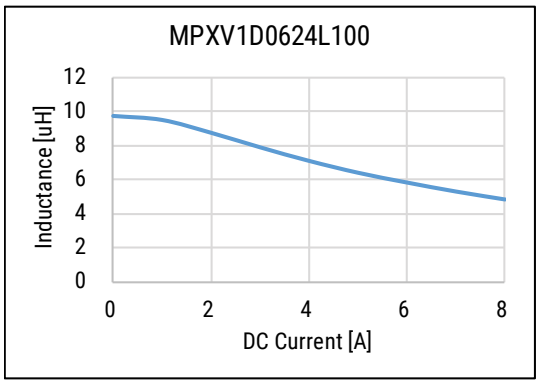


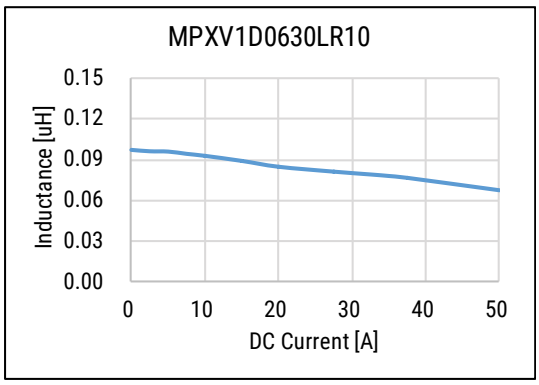


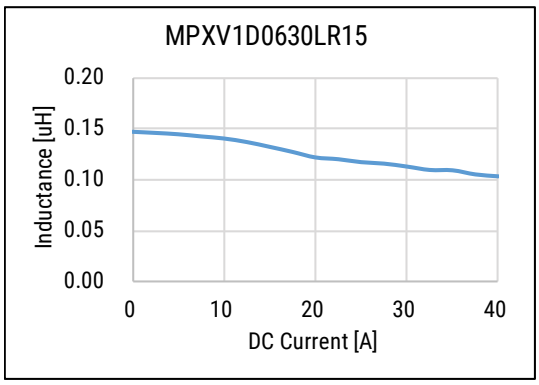
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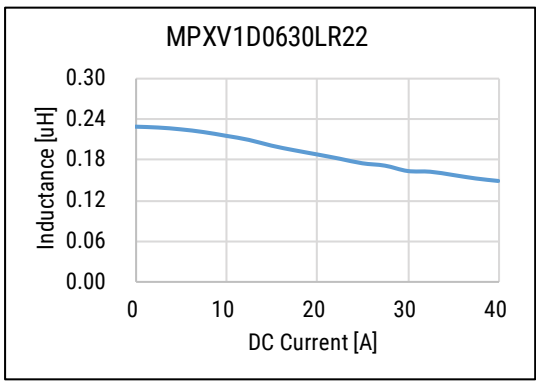
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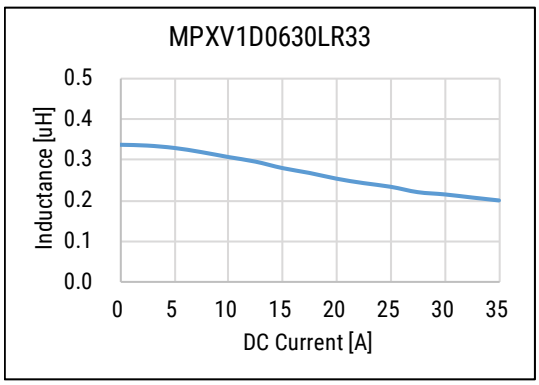


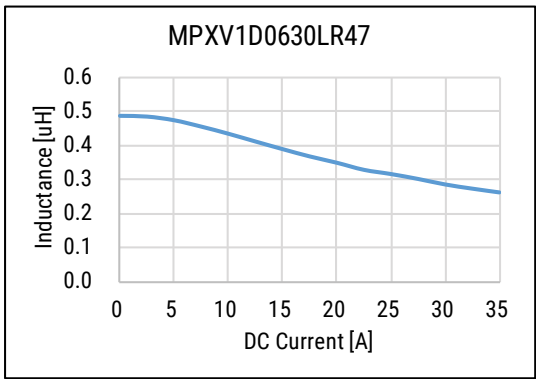


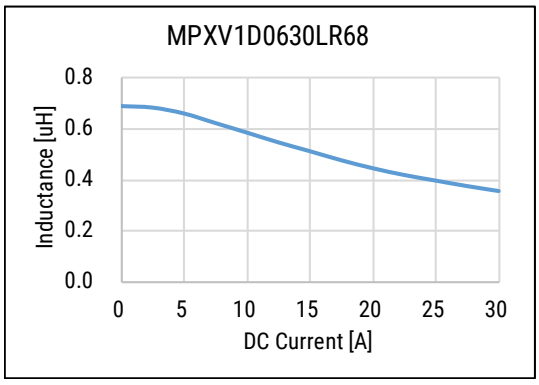






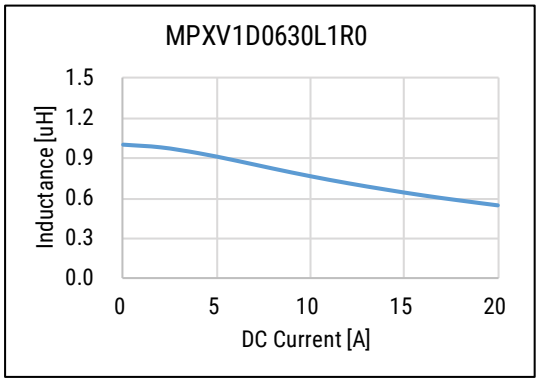


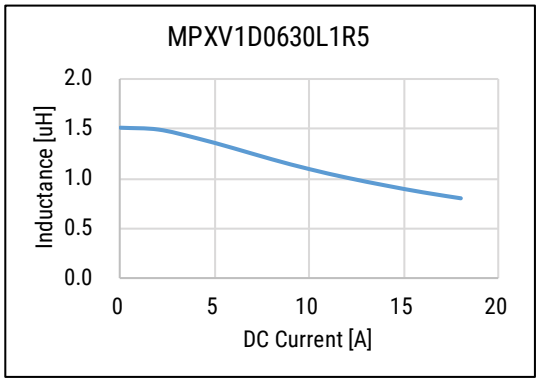


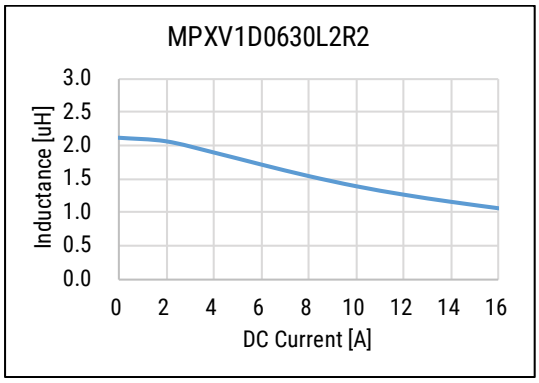


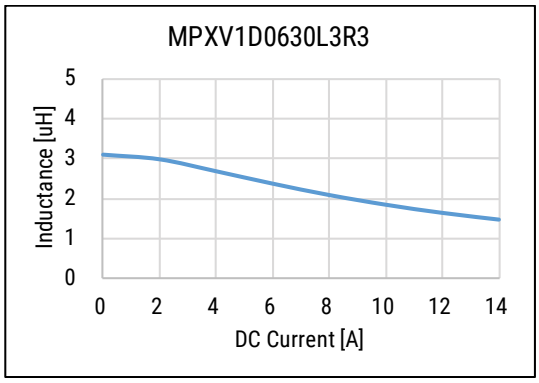
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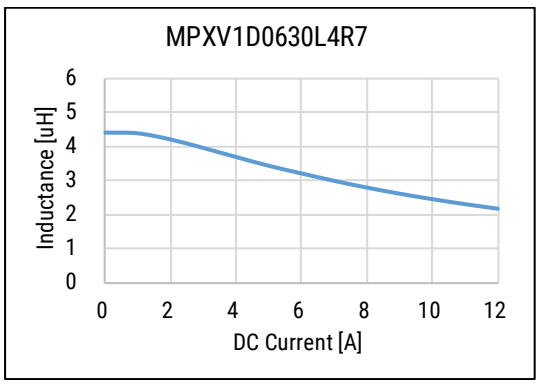
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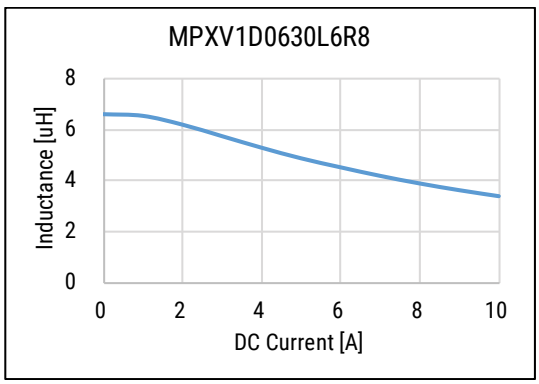


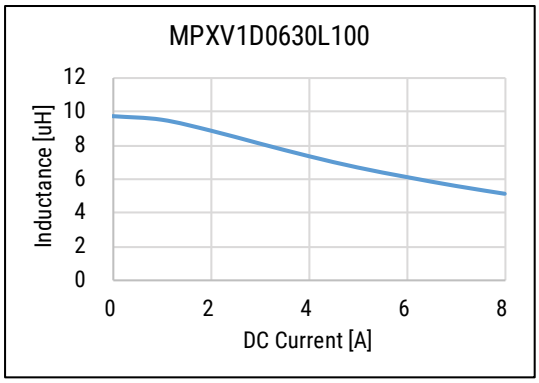


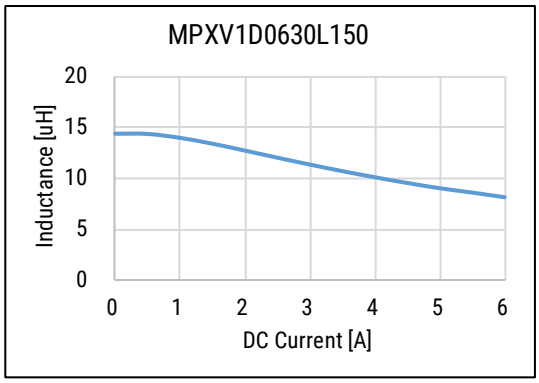






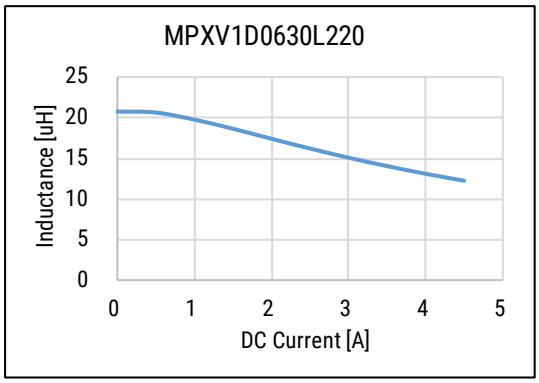


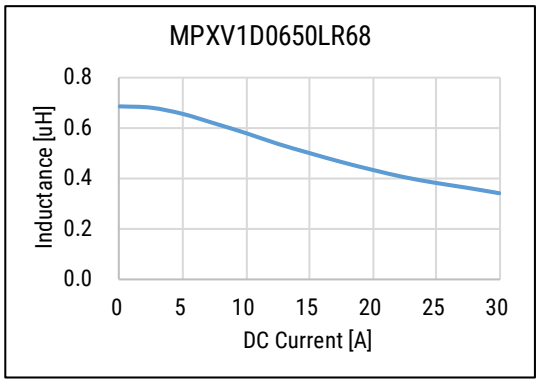


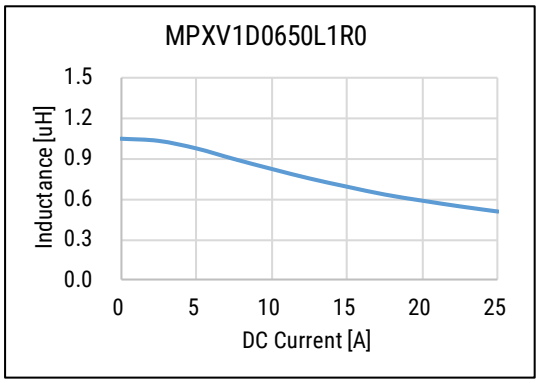


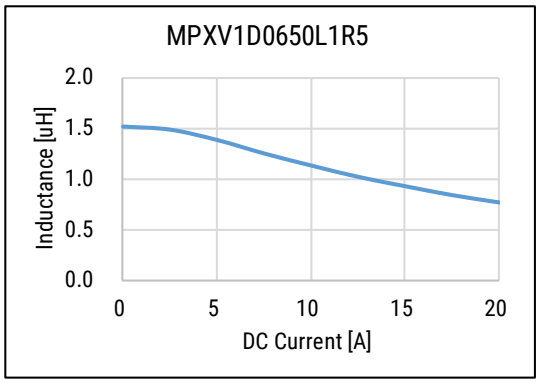
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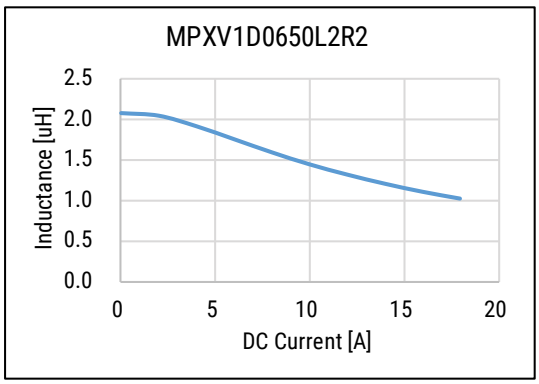
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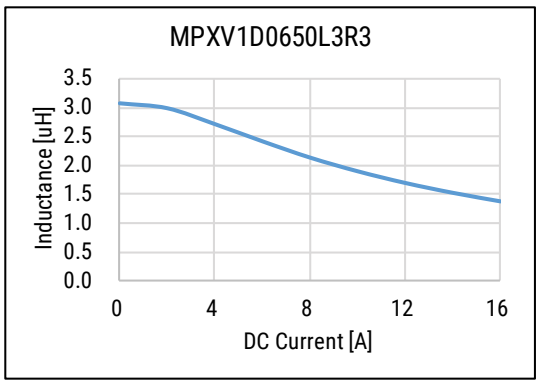


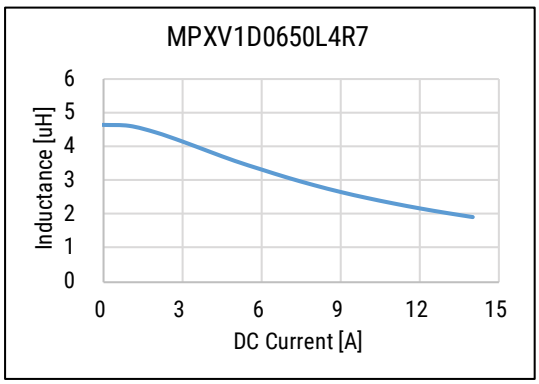


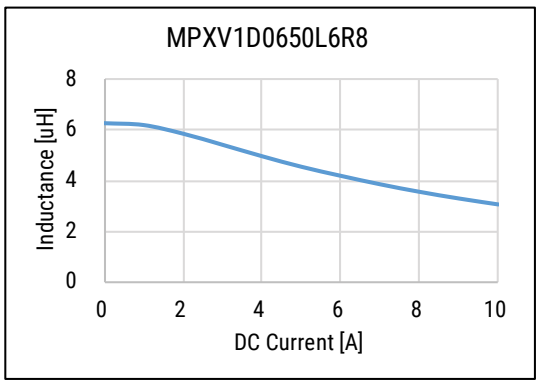






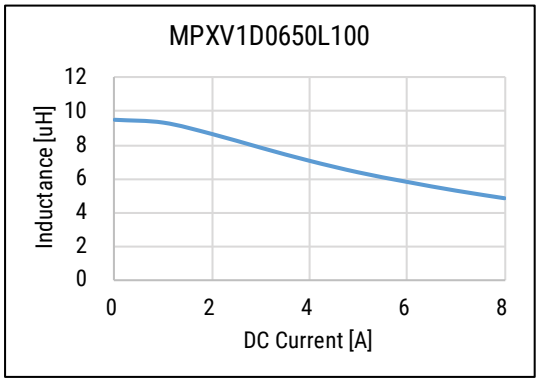


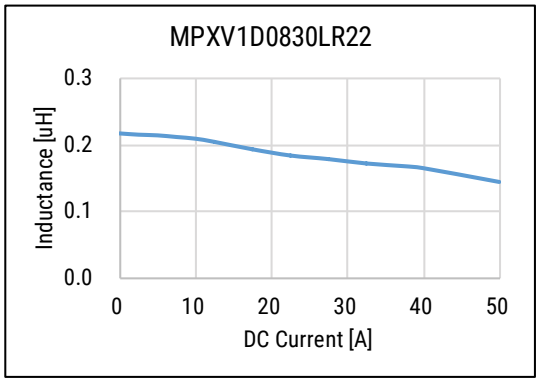


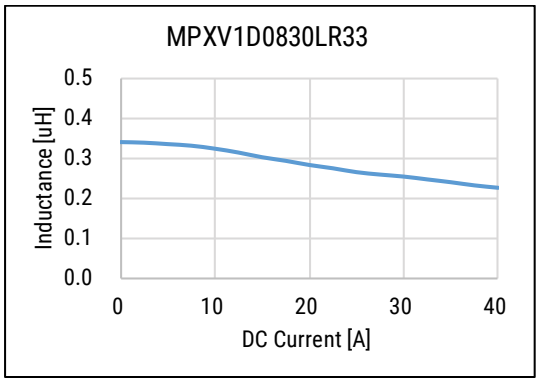


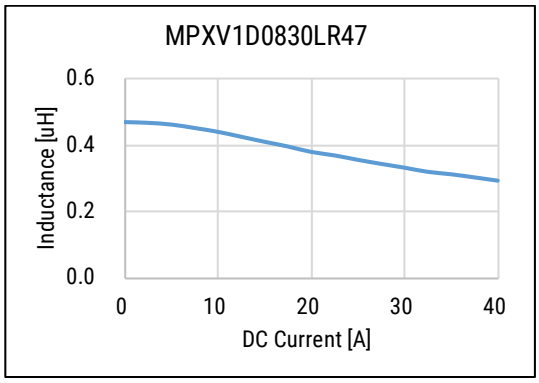
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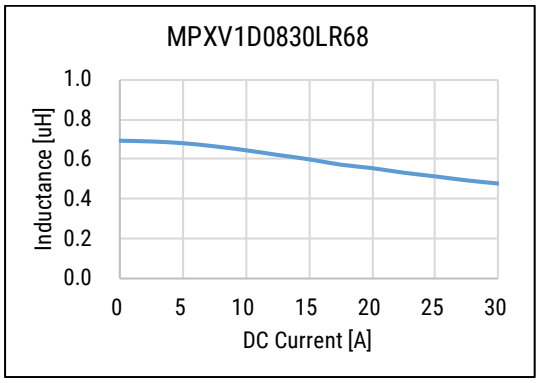
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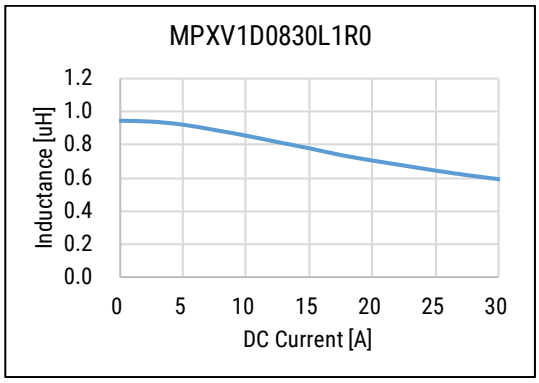


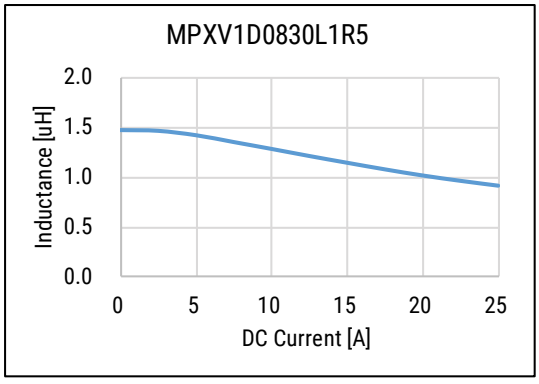


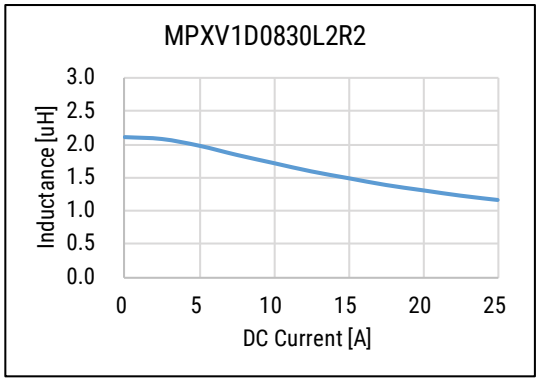






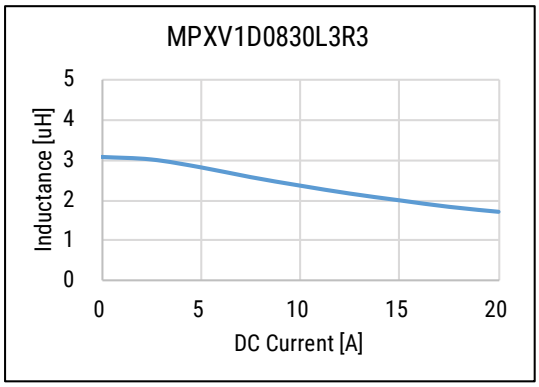


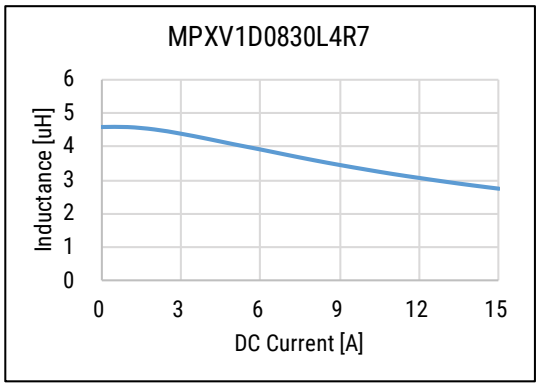


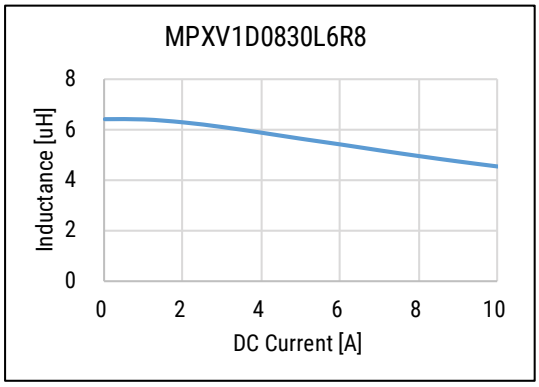


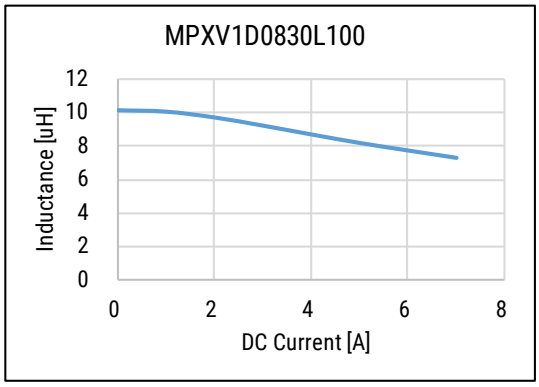
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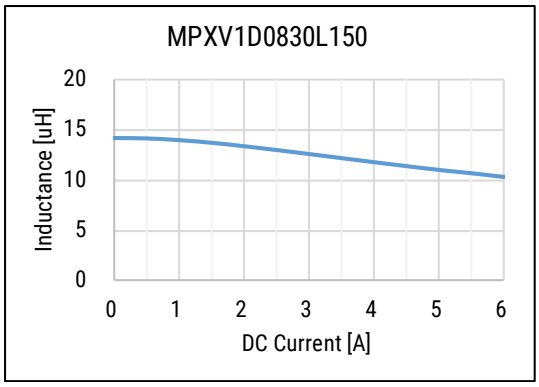
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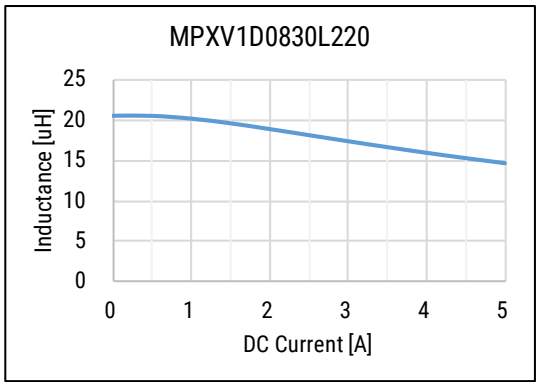


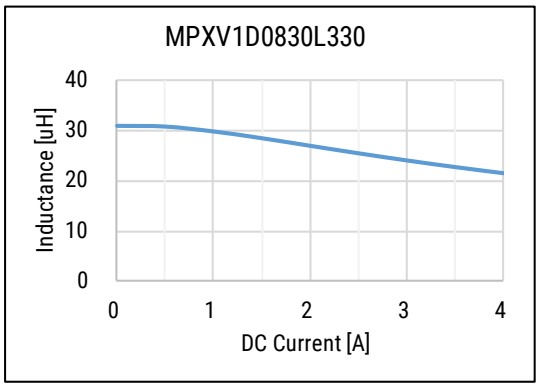


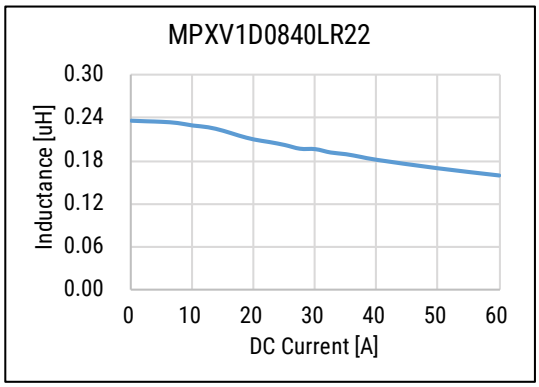






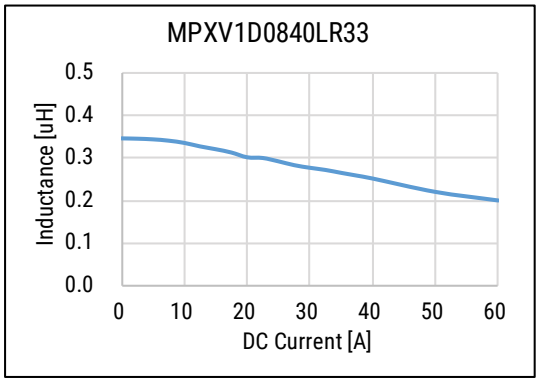


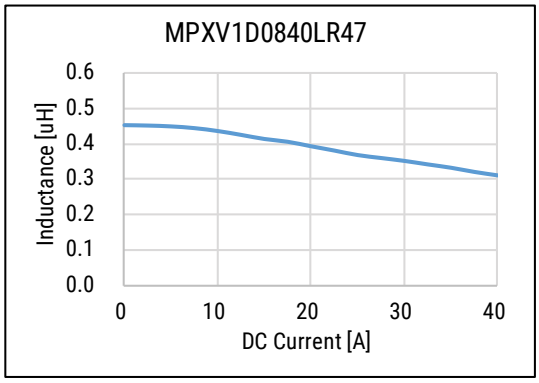


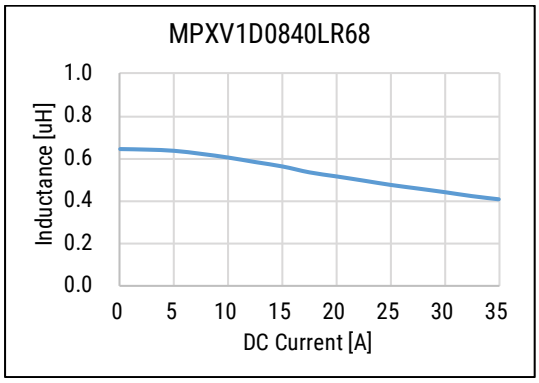


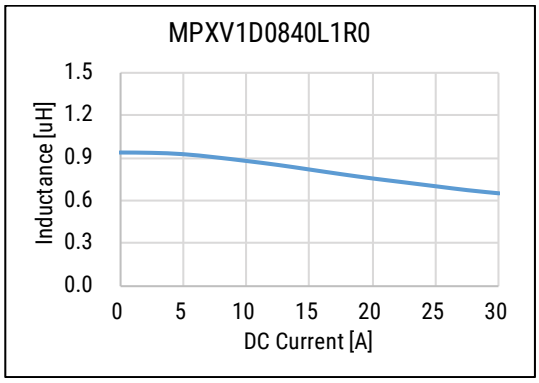
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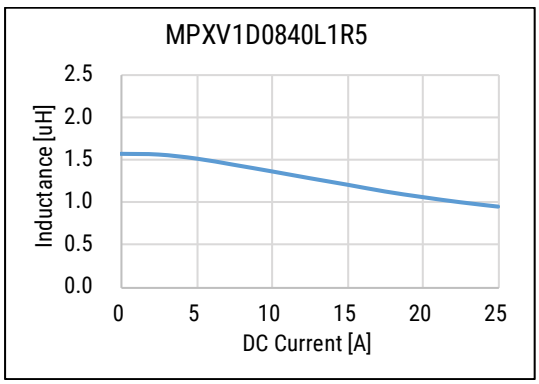
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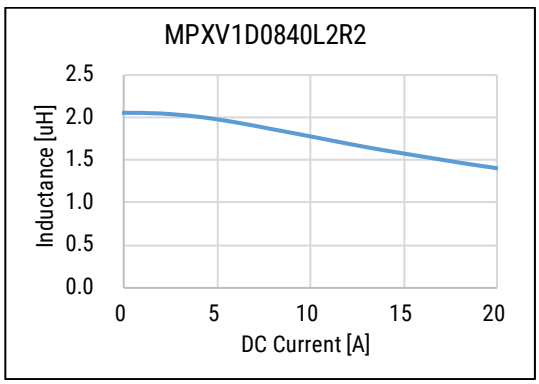


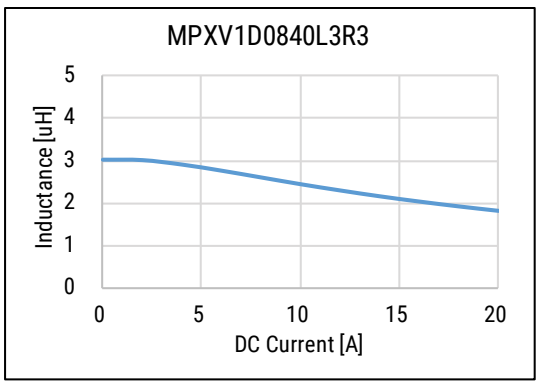


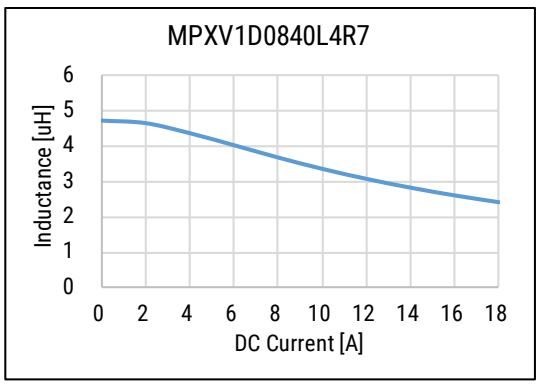






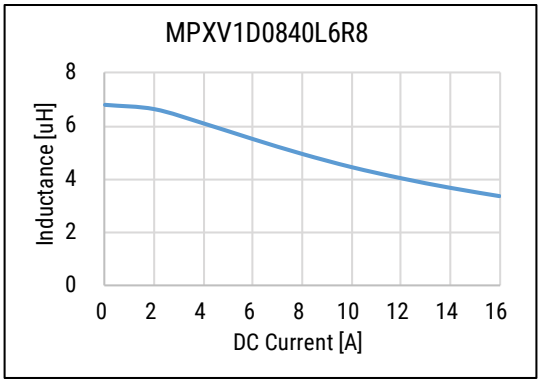


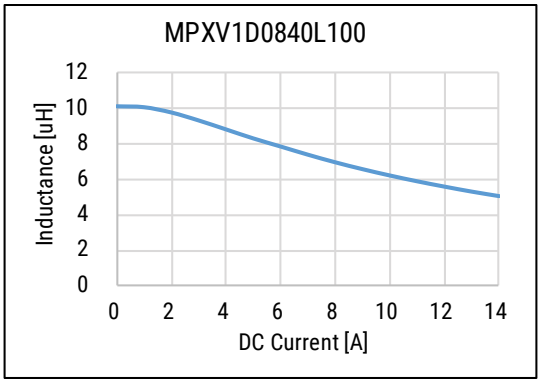


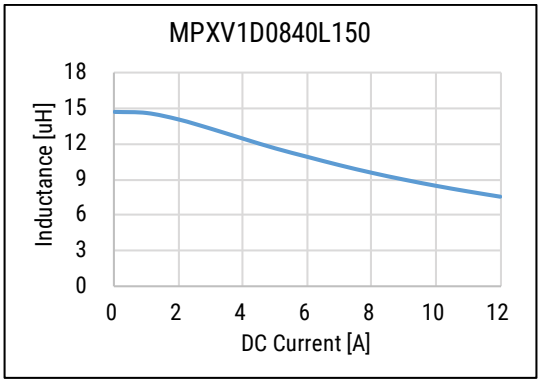


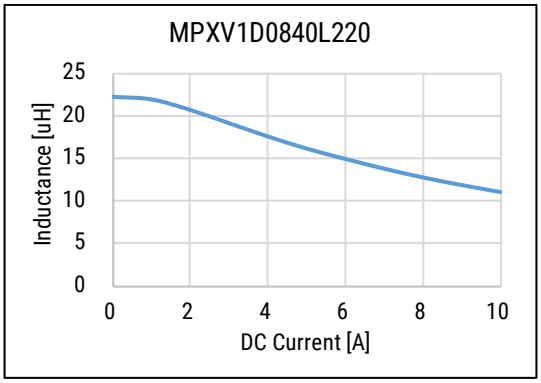
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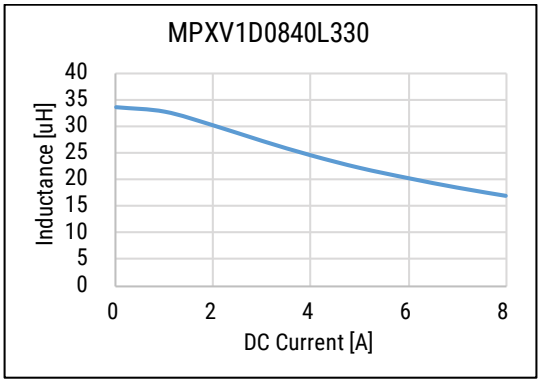
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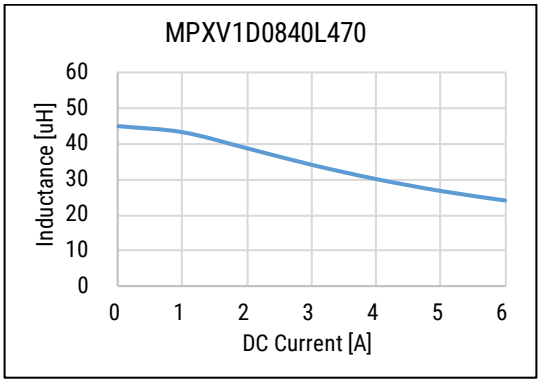


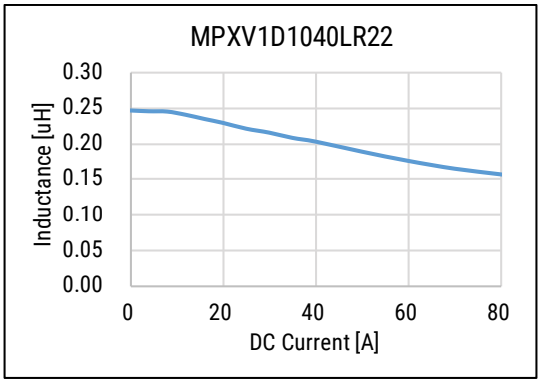


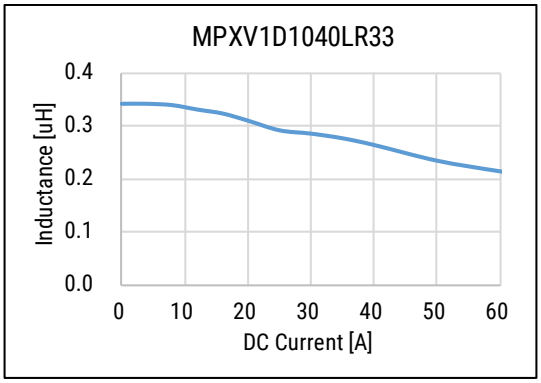






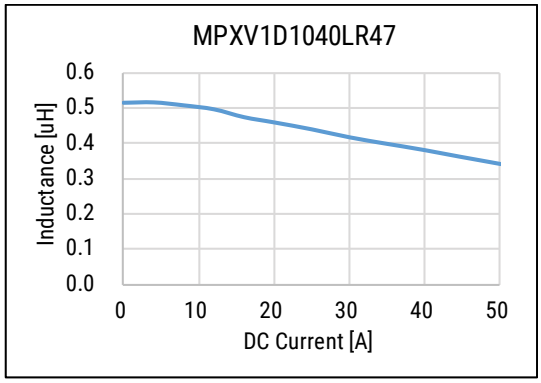


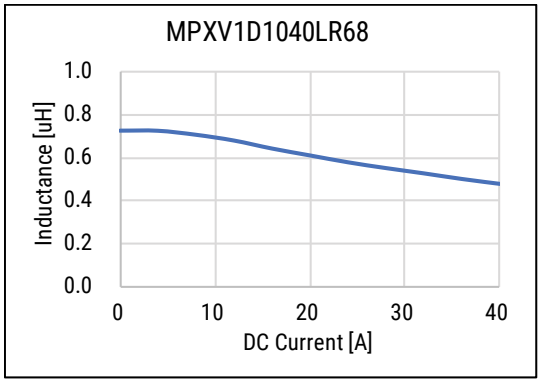


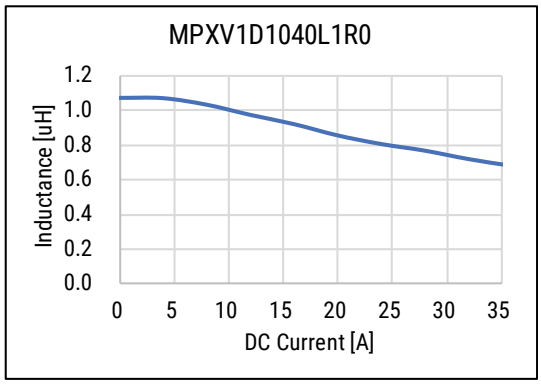


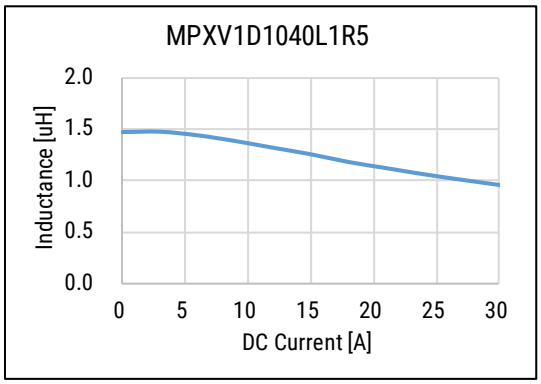
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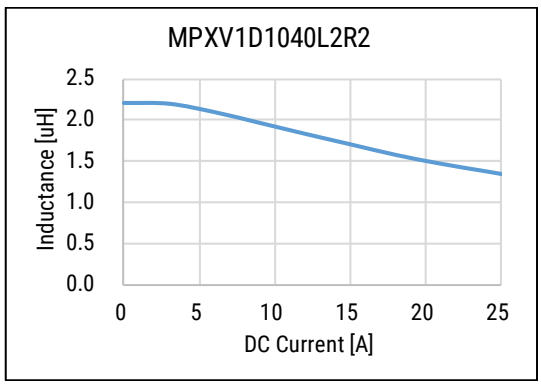
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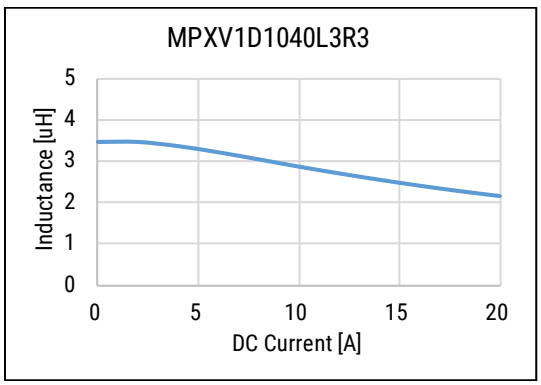


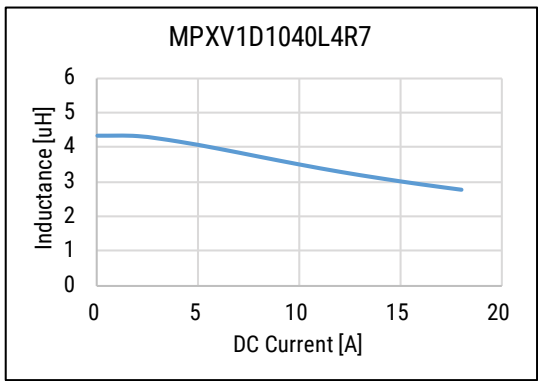


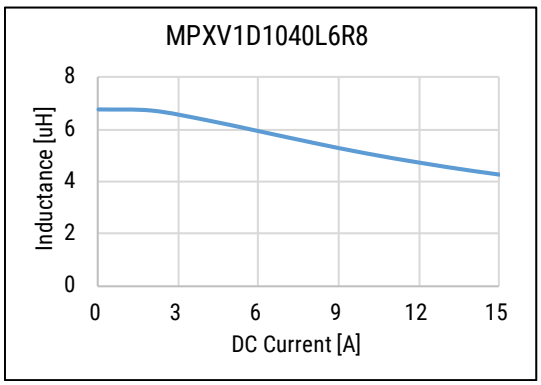






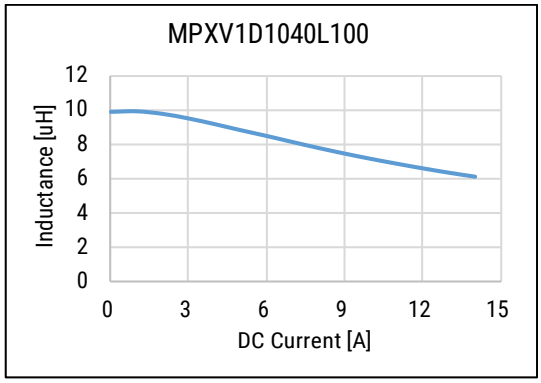


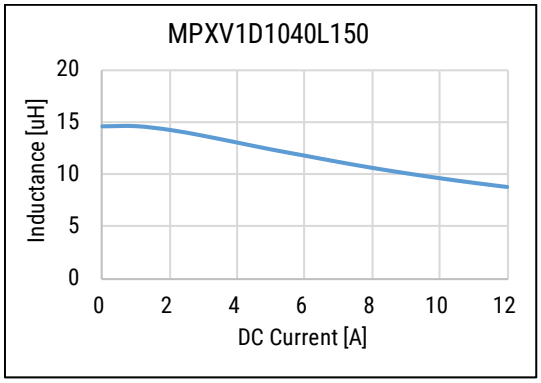


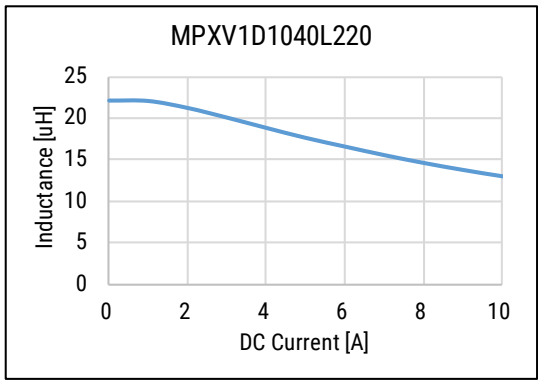


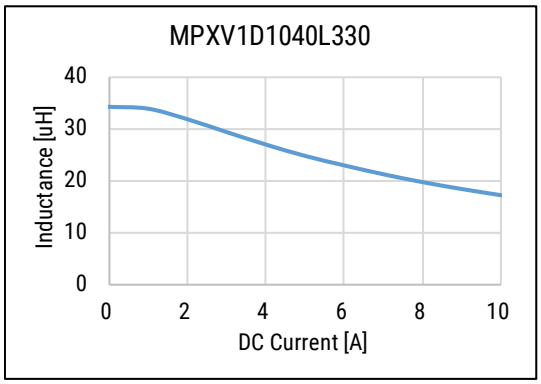
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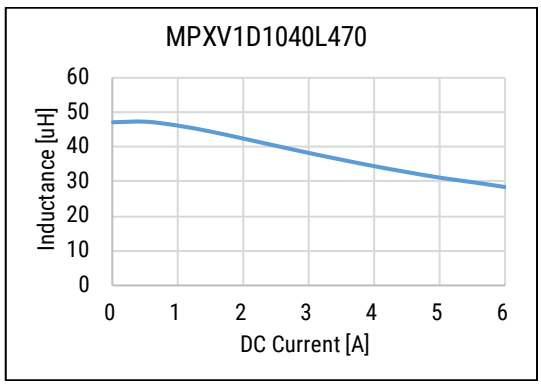
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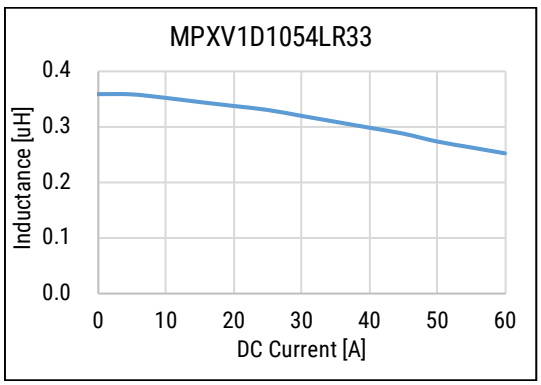


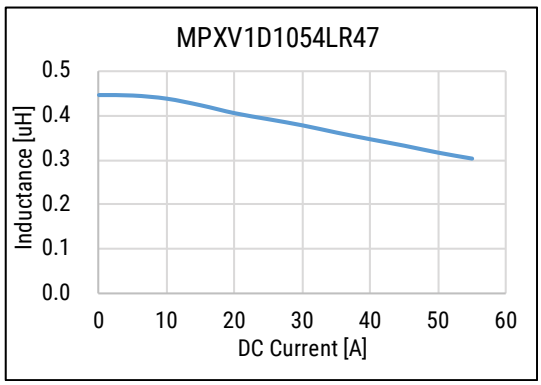


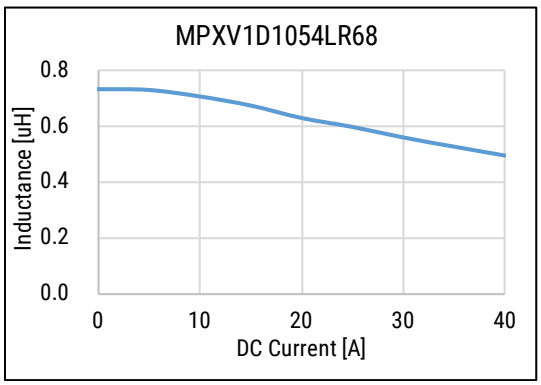






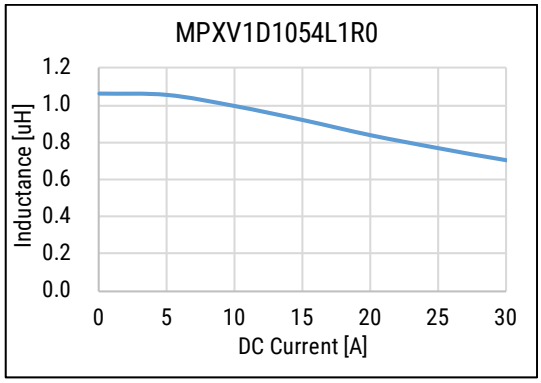


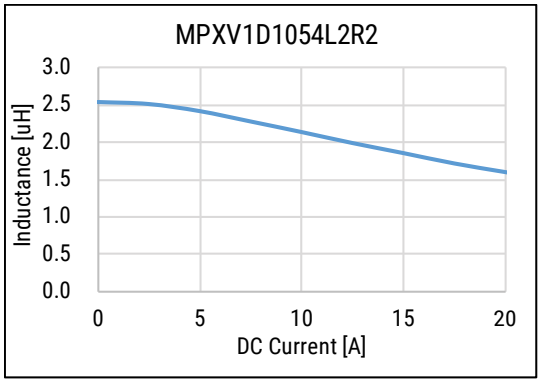


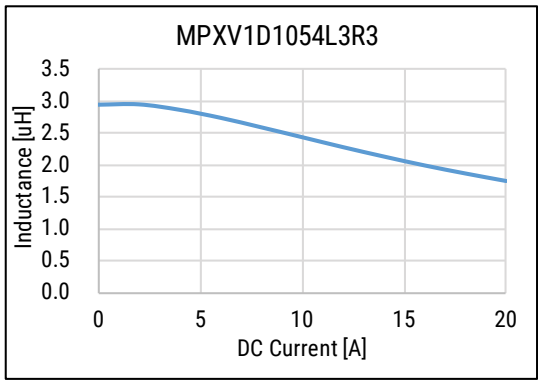


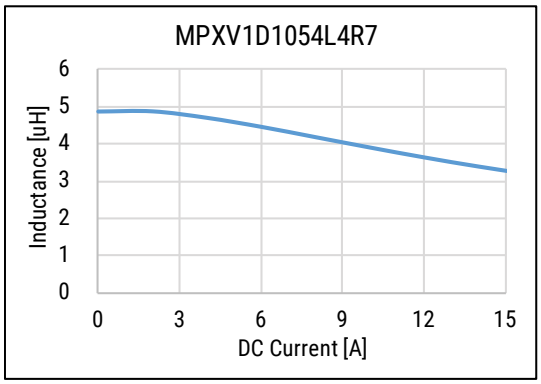
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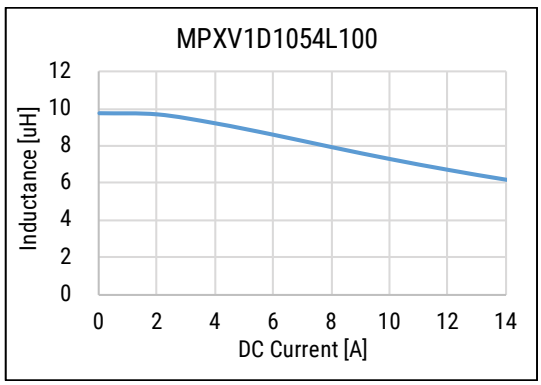
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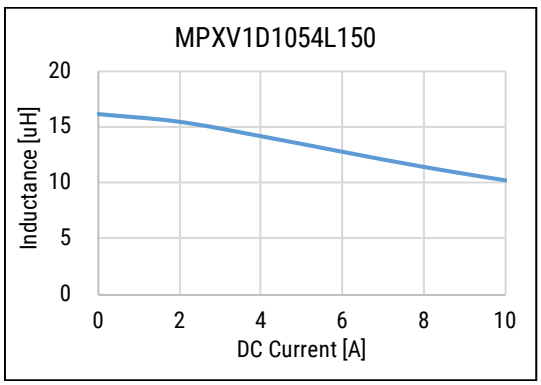


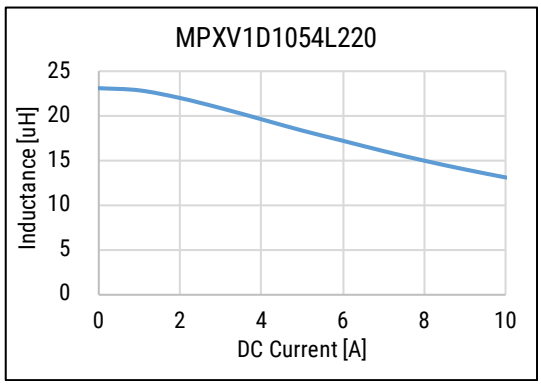


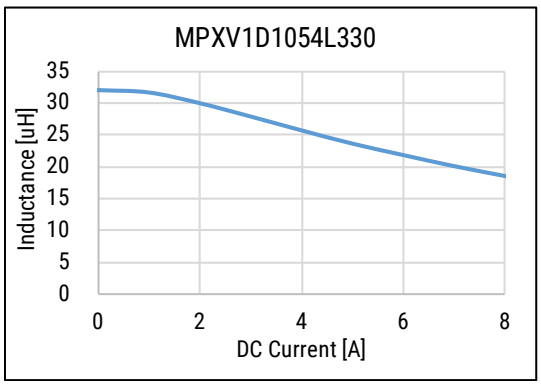






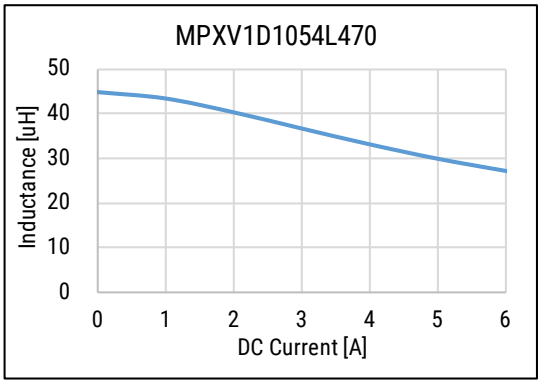


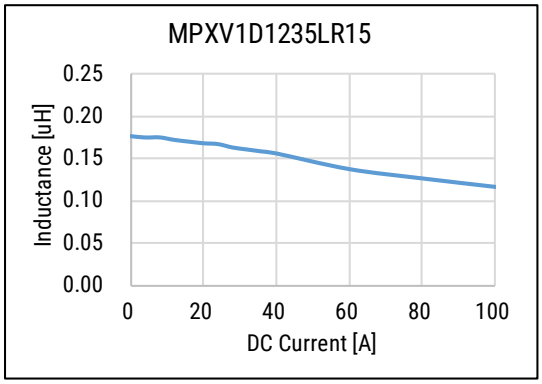


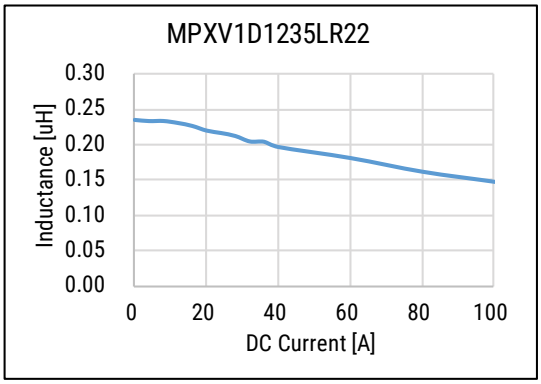


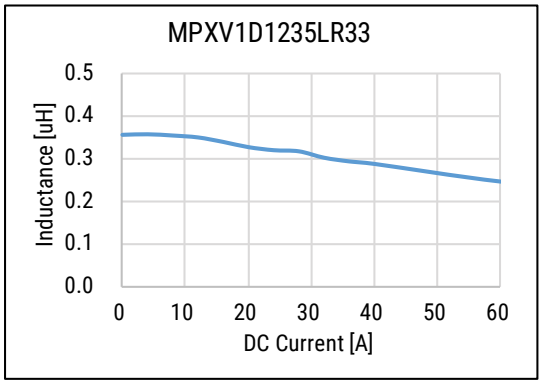
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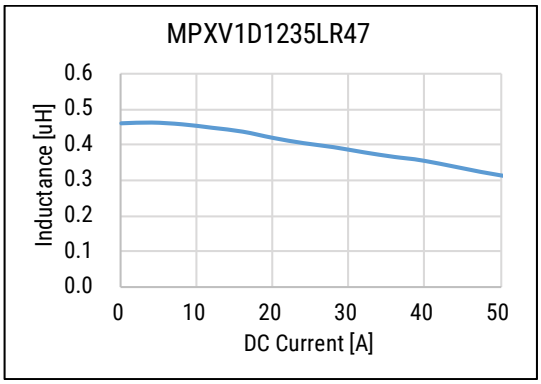
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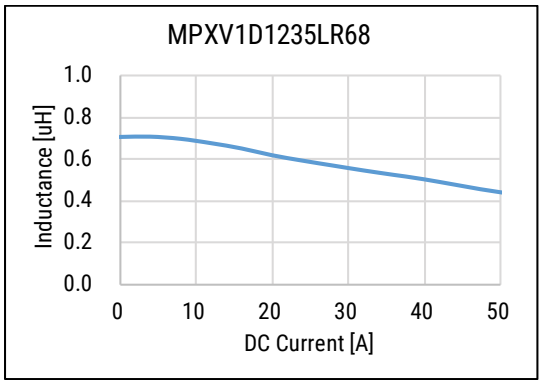


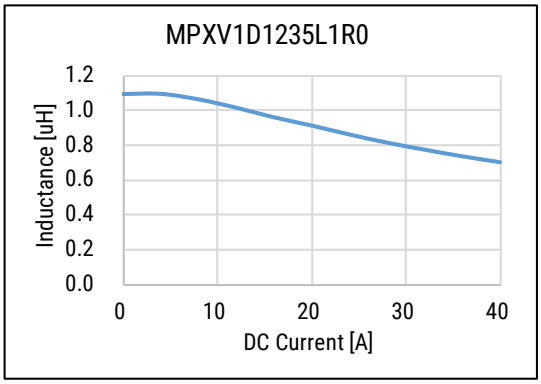


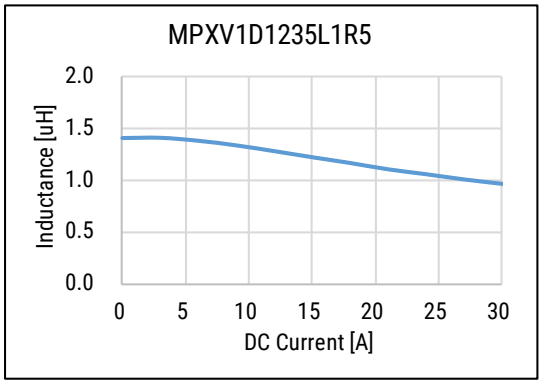






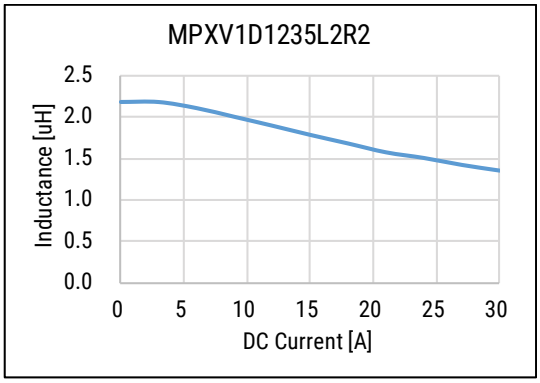


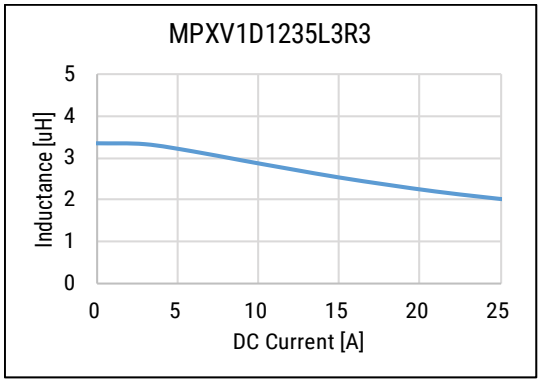


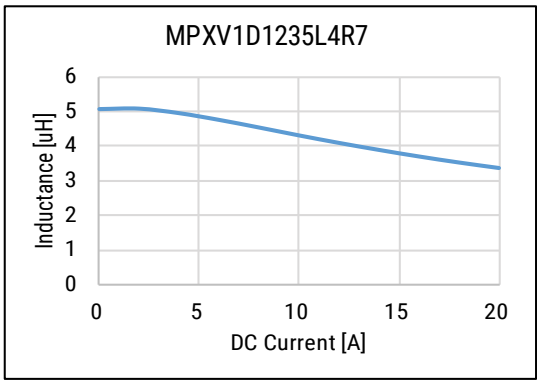


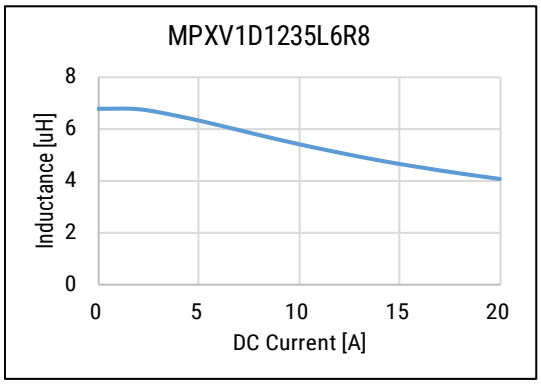
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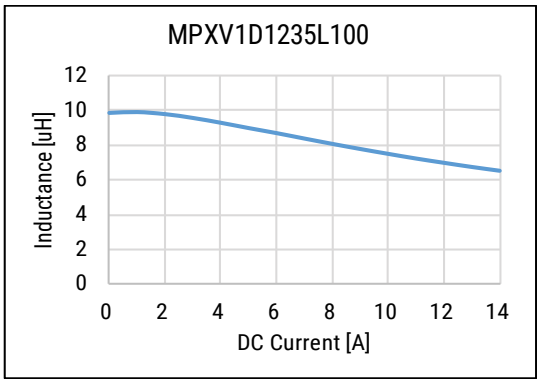
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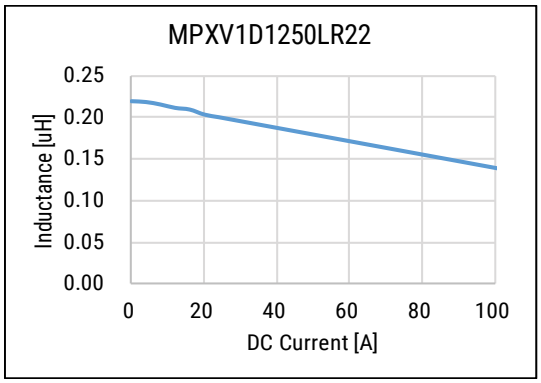


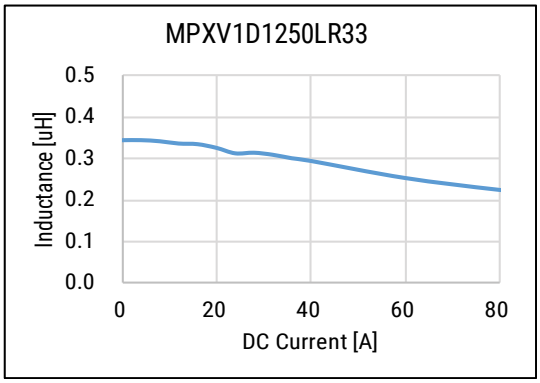


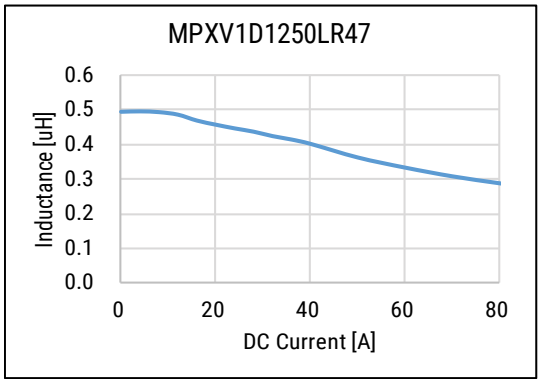






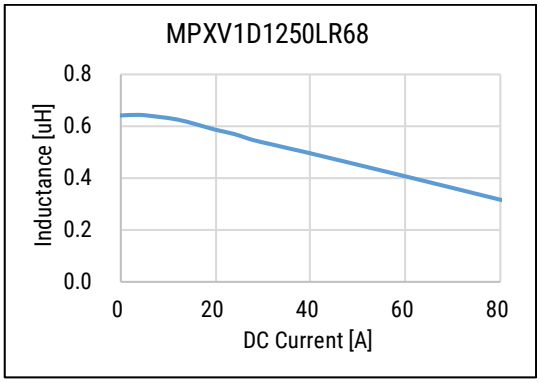


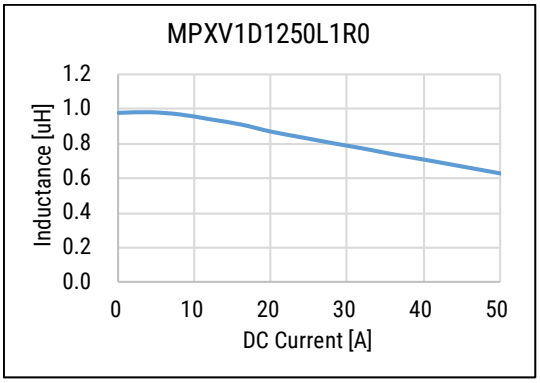


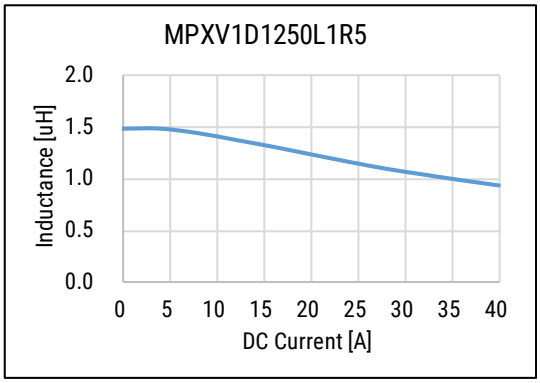


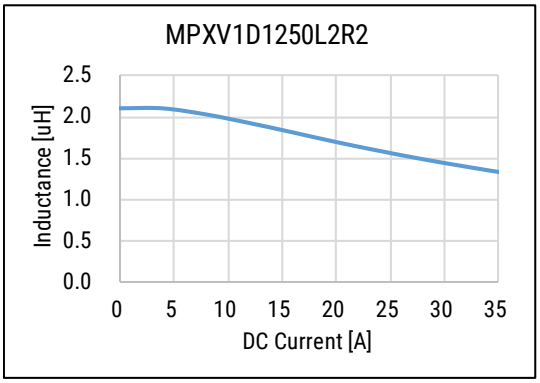
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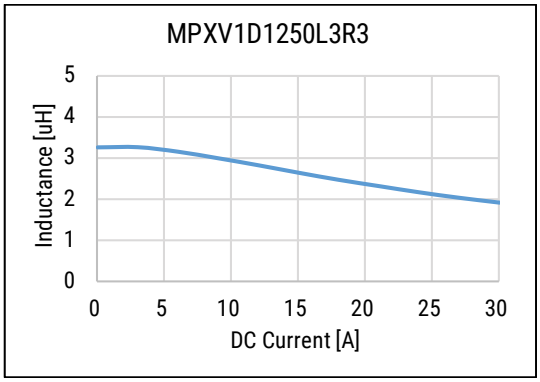
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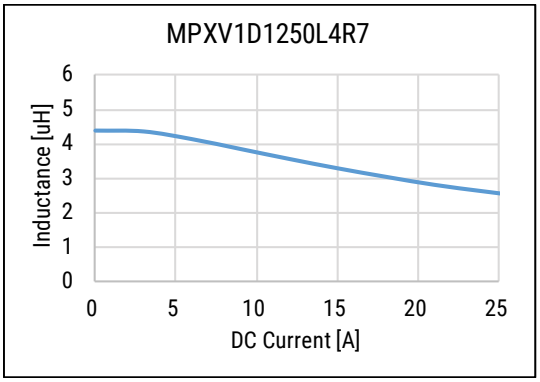


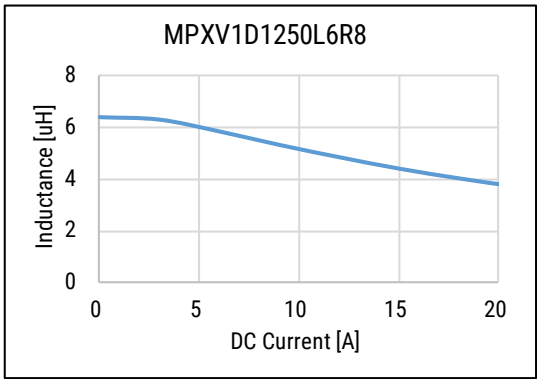


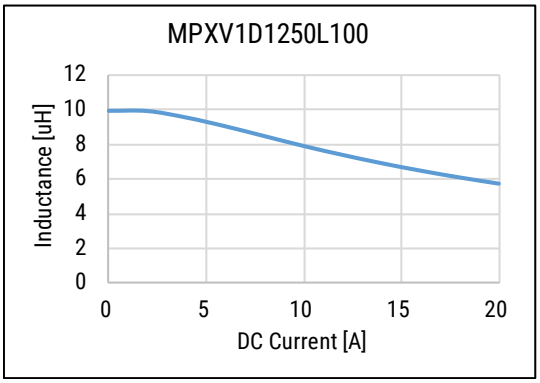






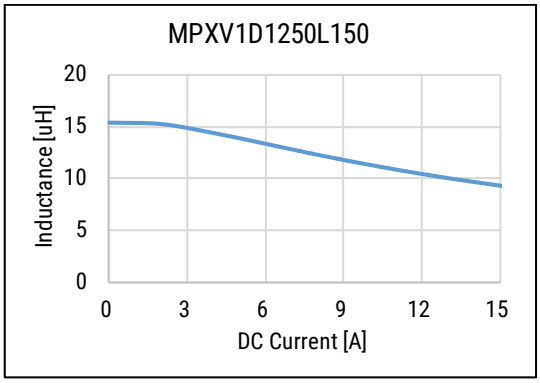


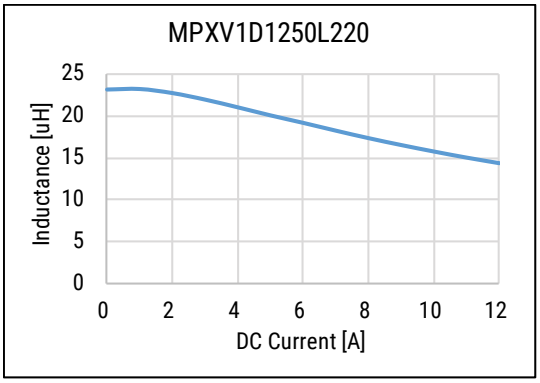


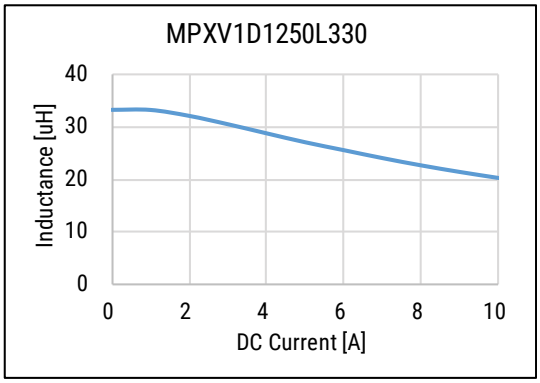


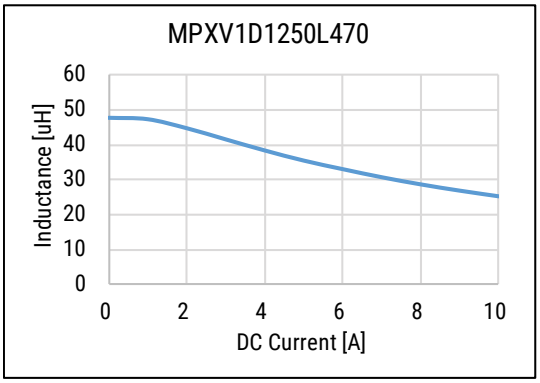
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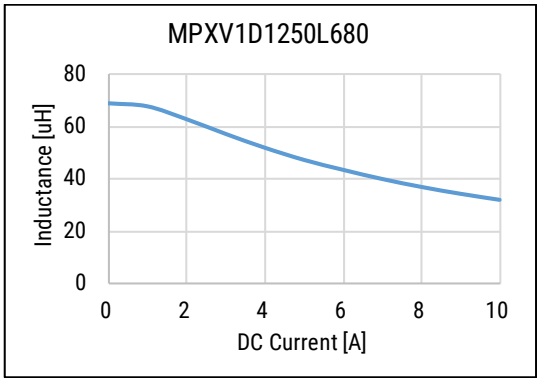
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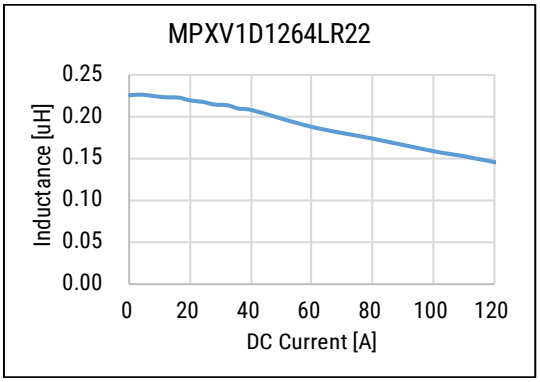


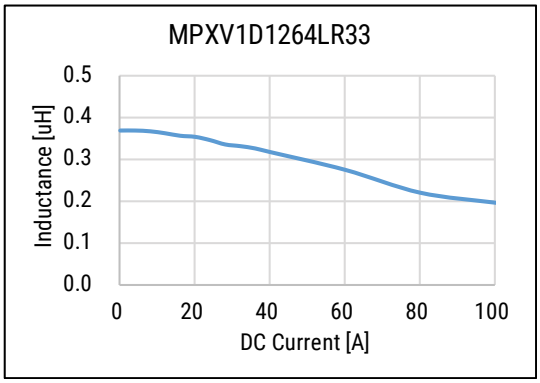


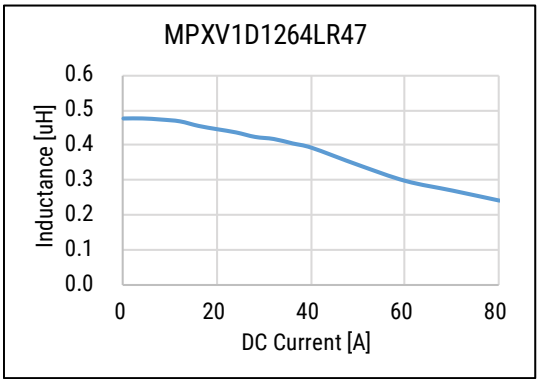






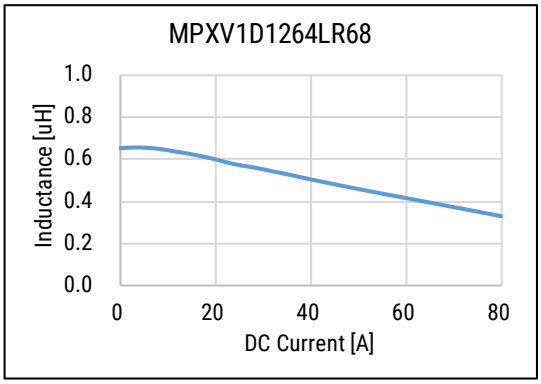


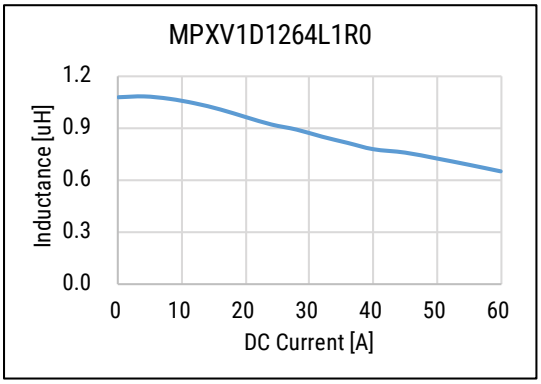


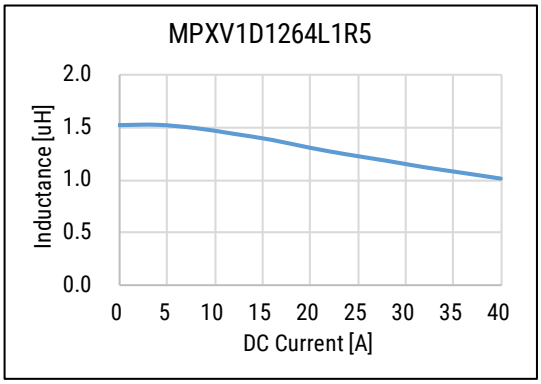


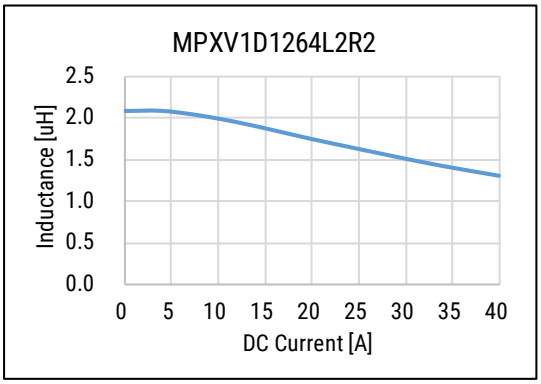
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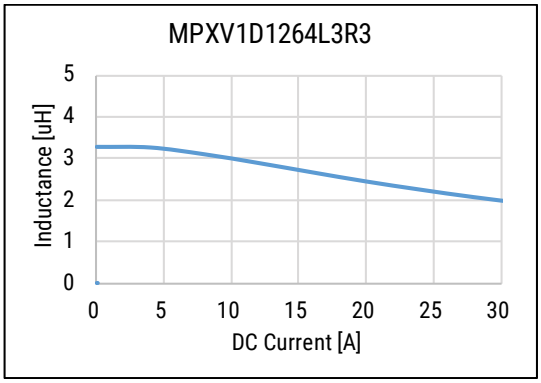
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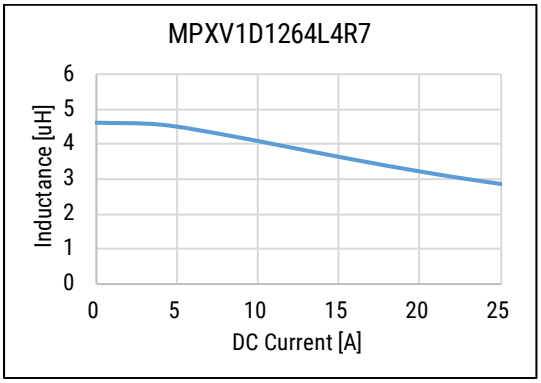


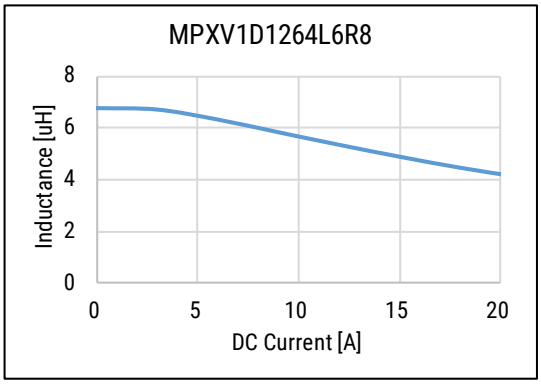


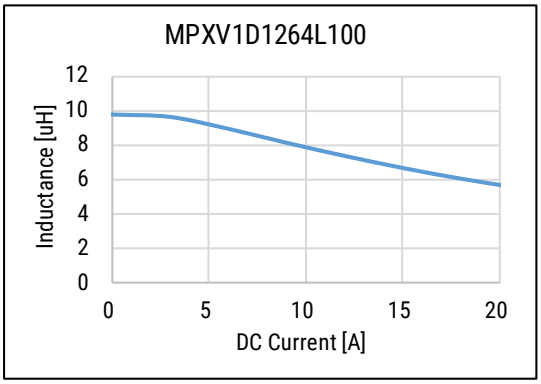






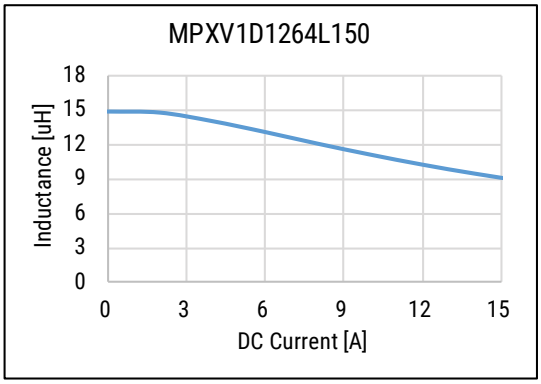


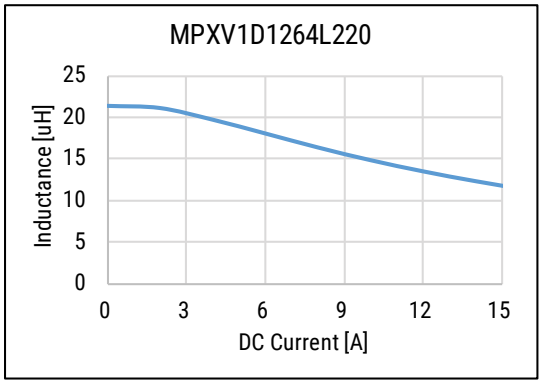


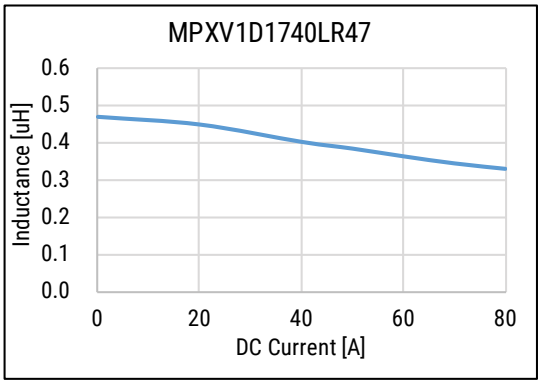


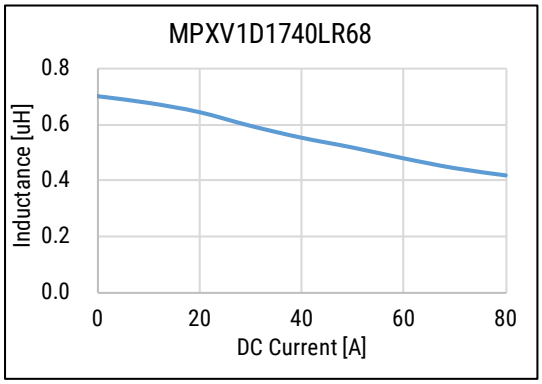
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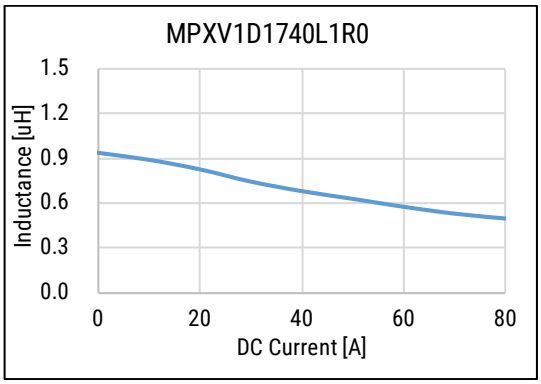
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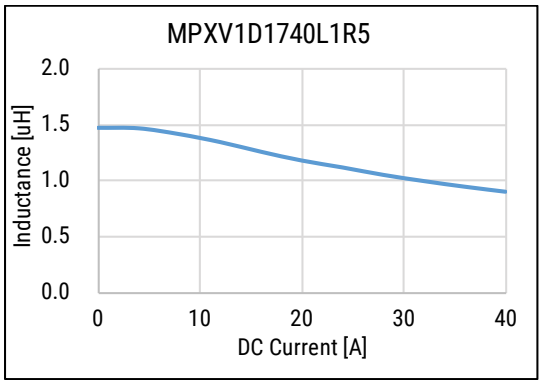


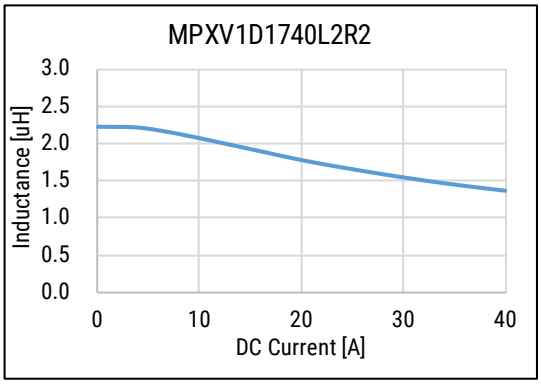


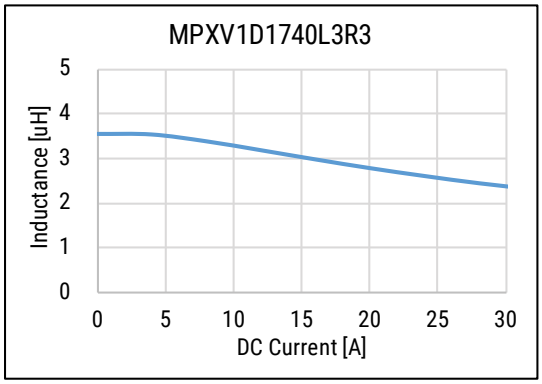






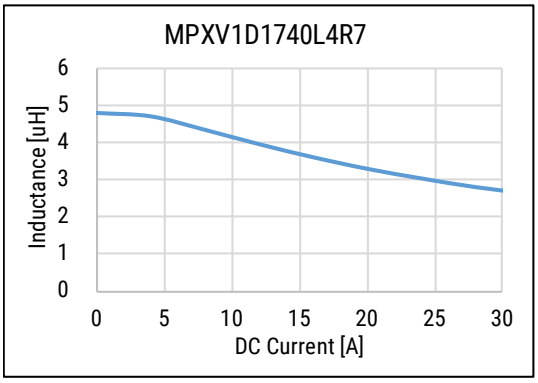


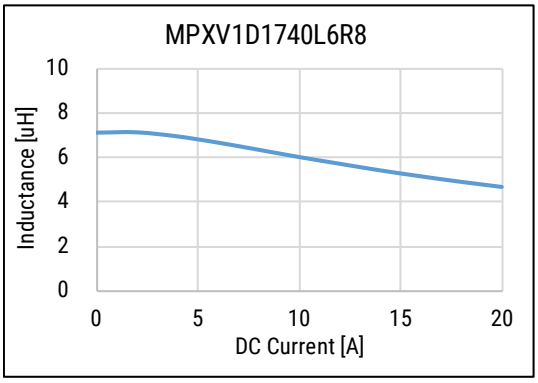


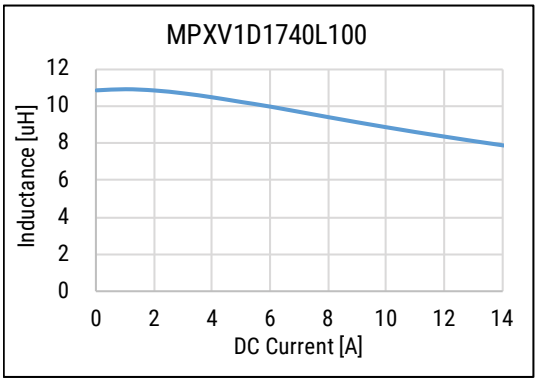


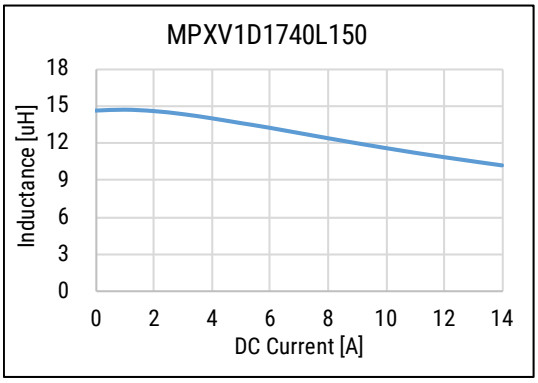
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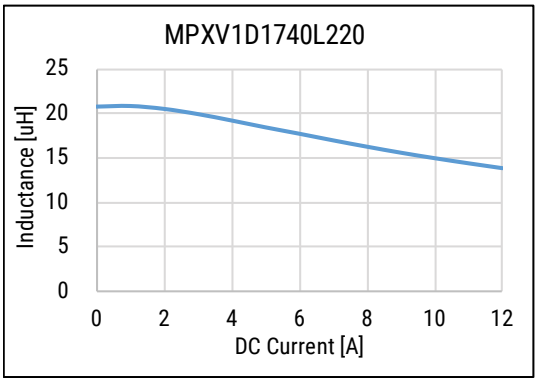
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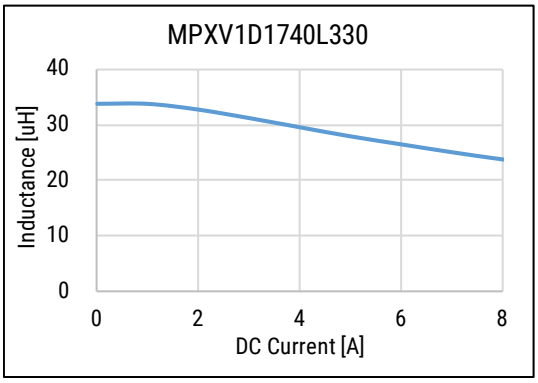


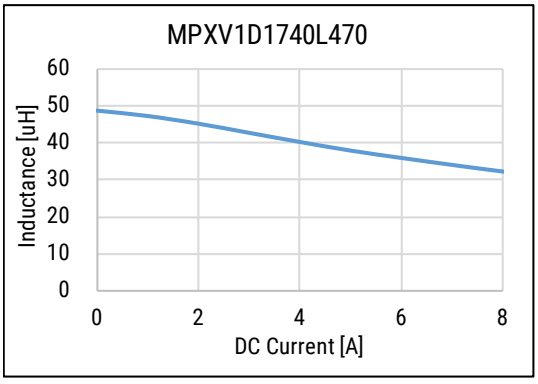


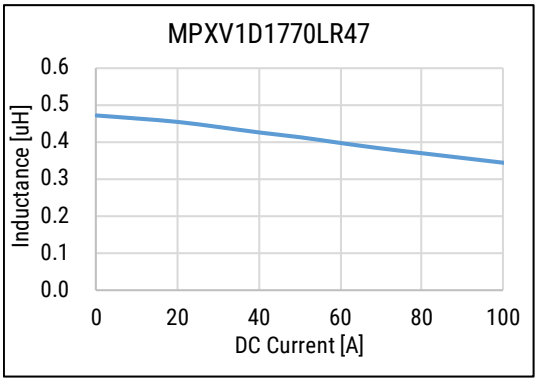






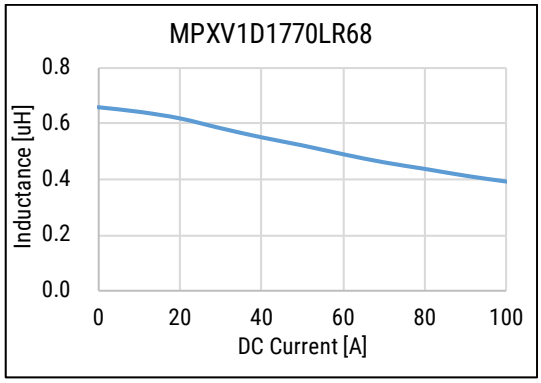


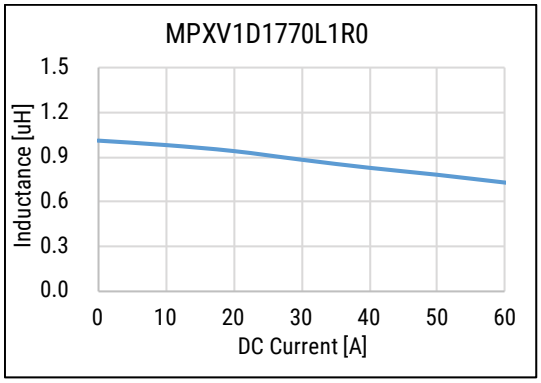


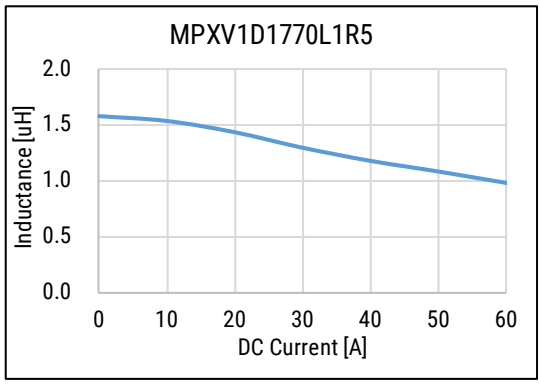


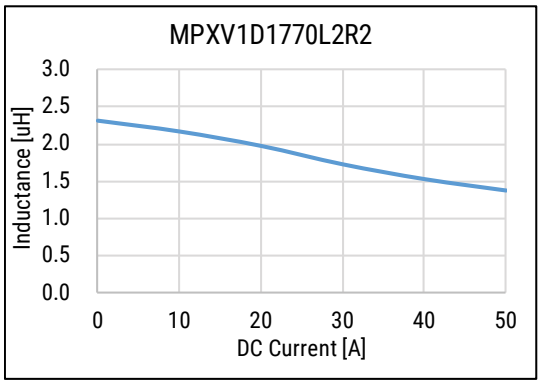
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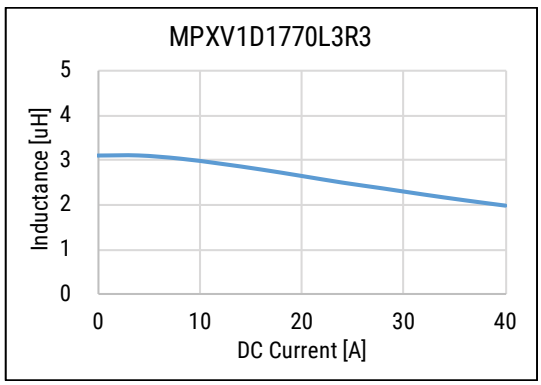
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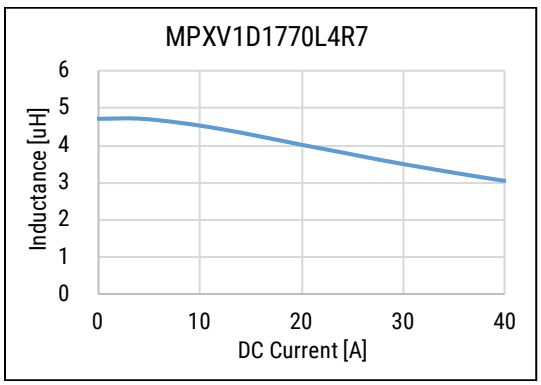


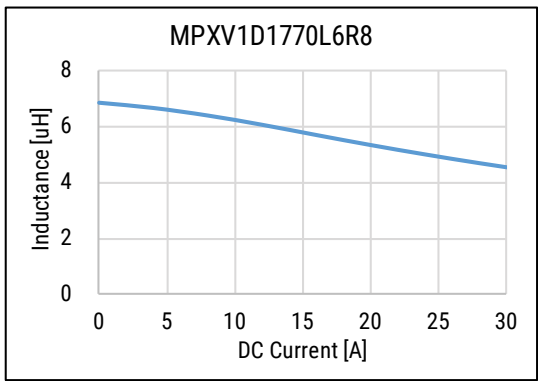


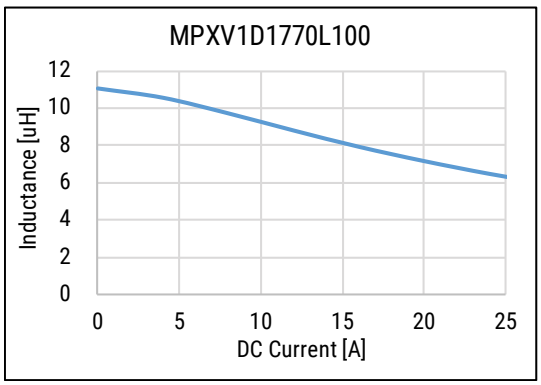






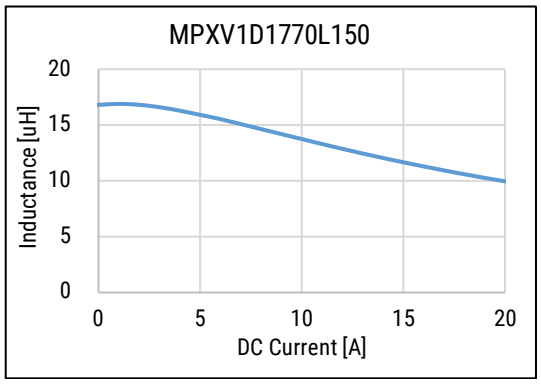


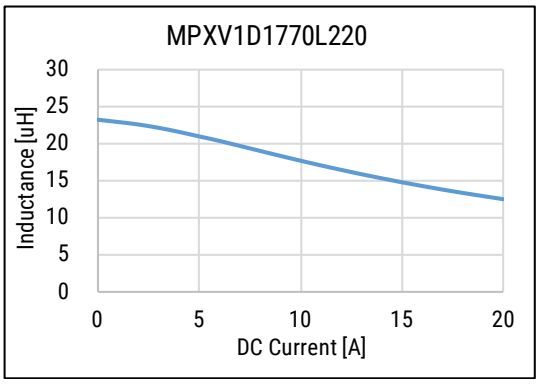


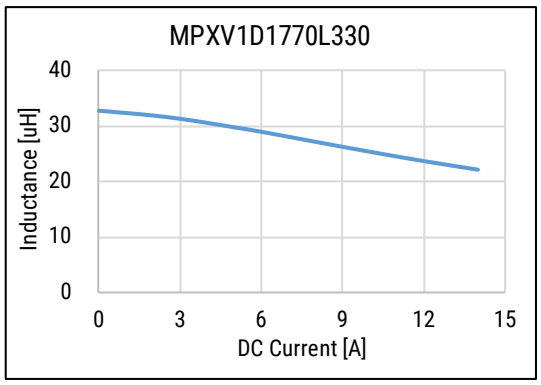


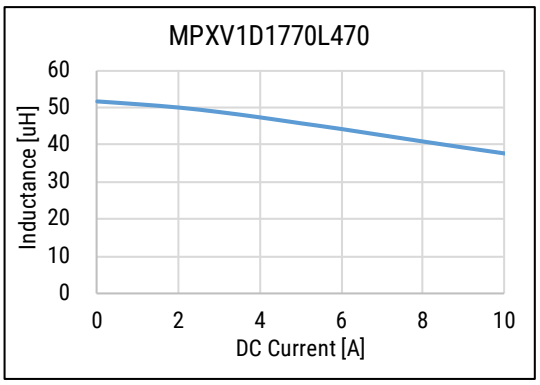
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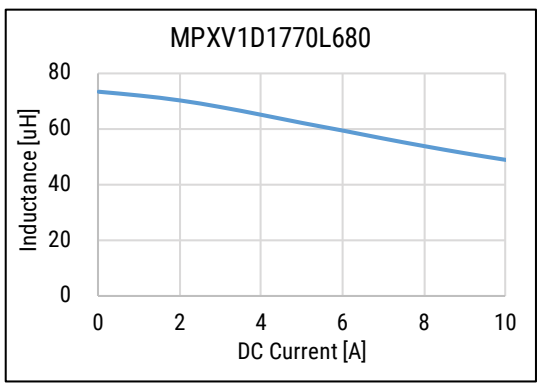
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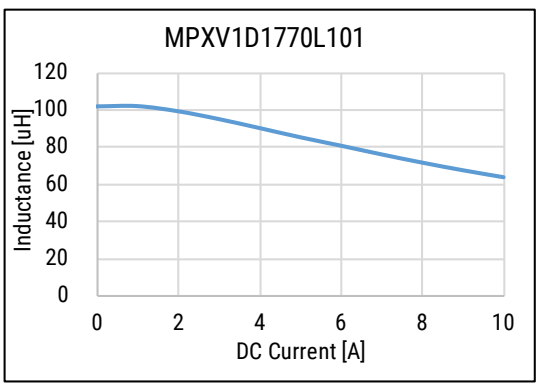


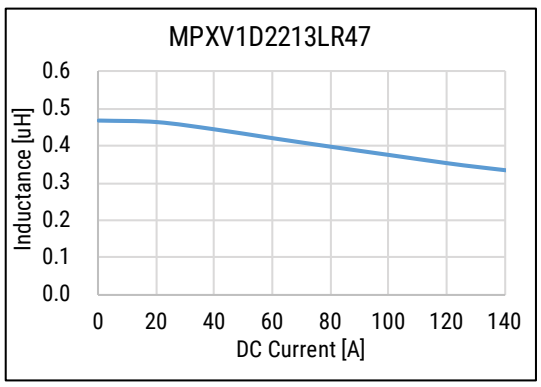


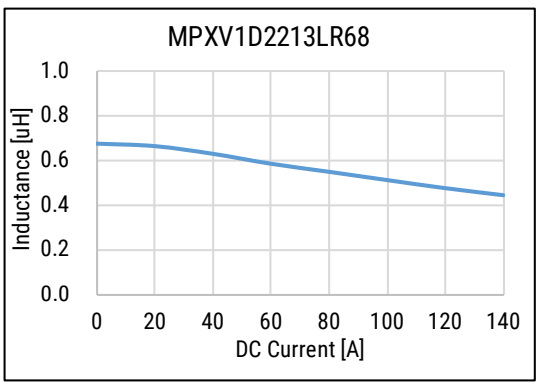






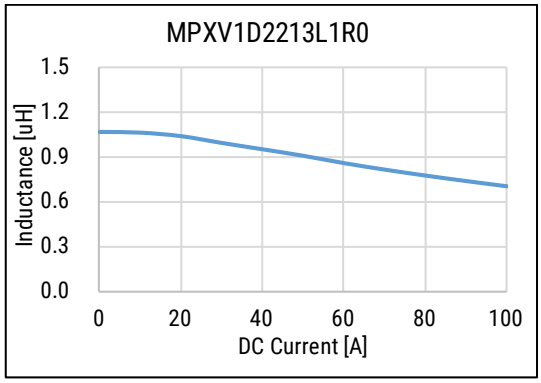


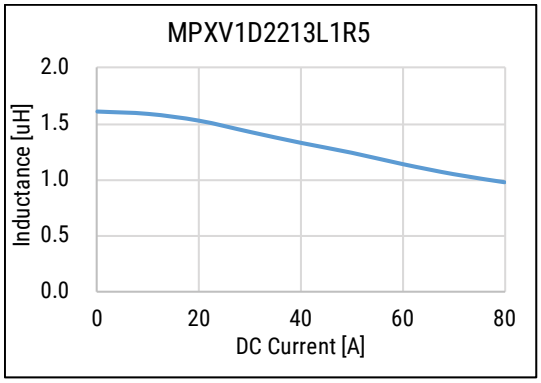


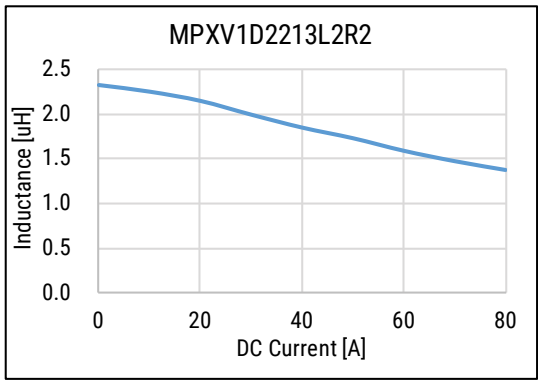


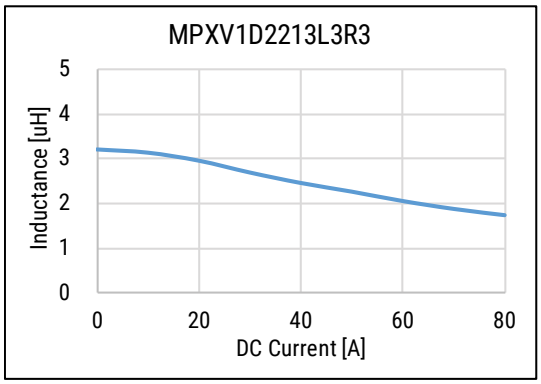
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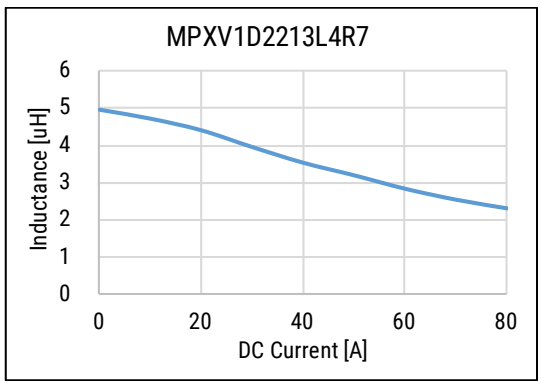
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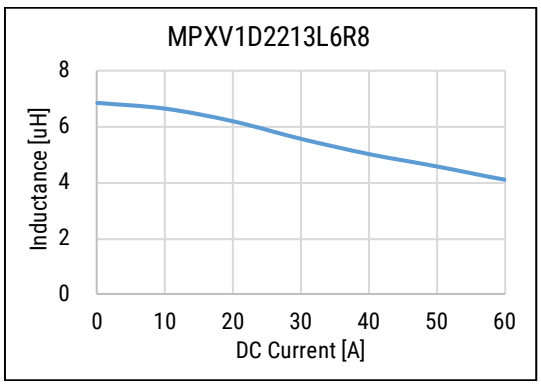


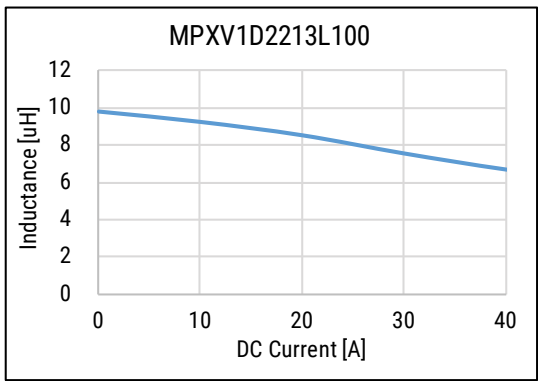


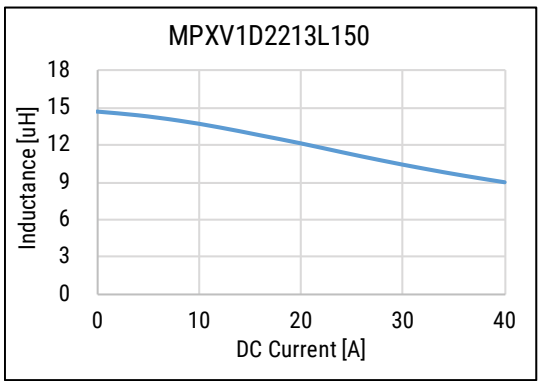






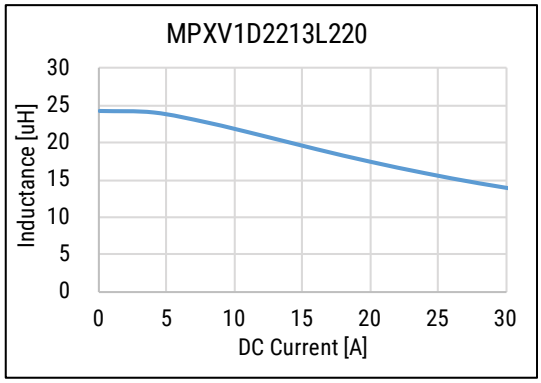


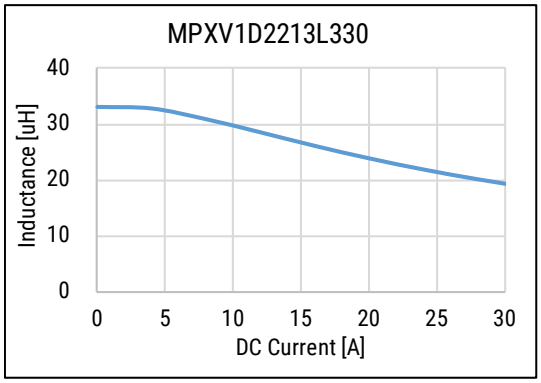


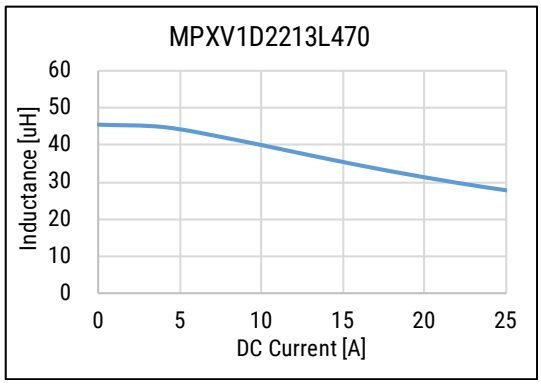


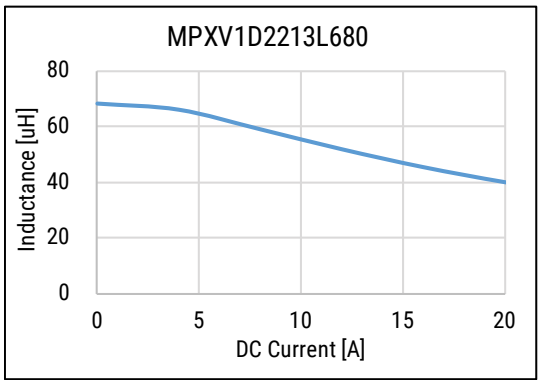
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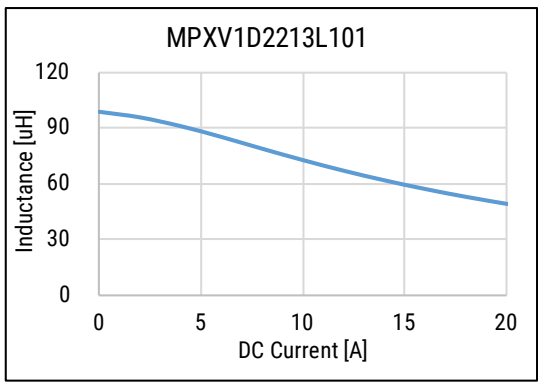
DC-Superposed Characteristics cont.





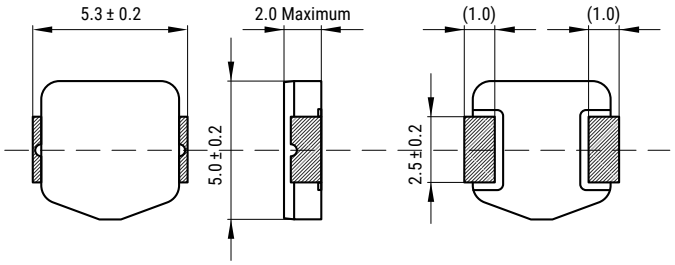
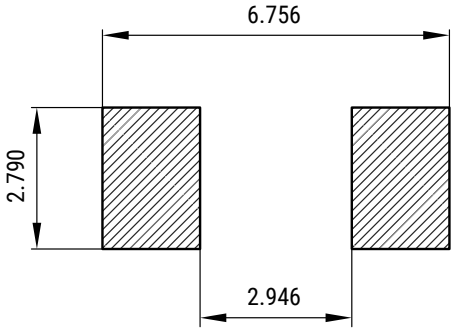
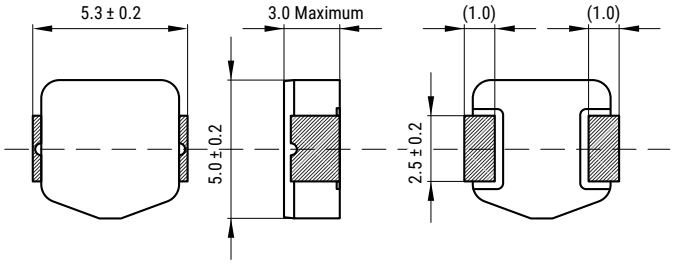
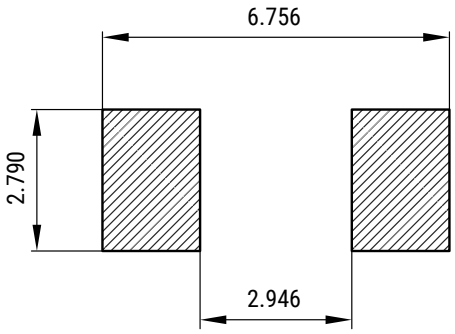
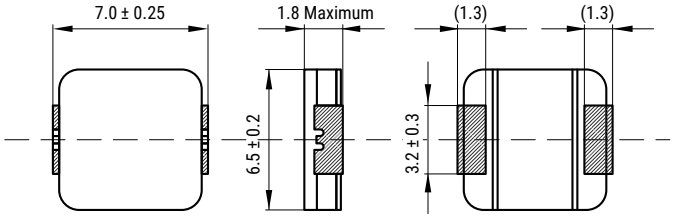
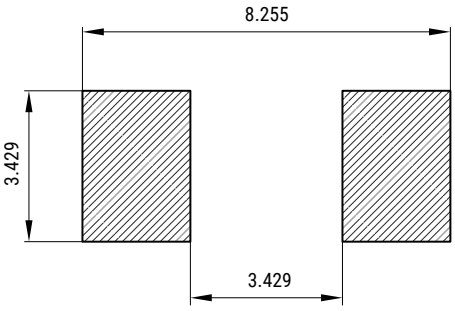
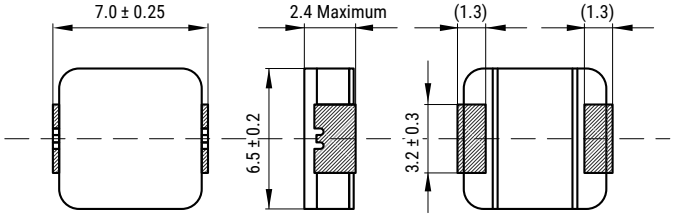
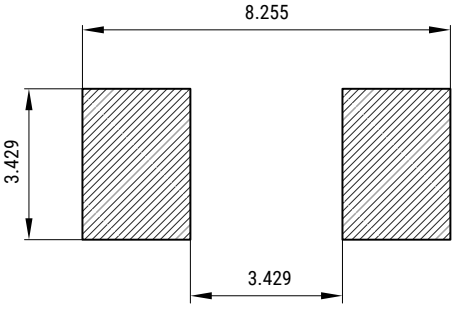






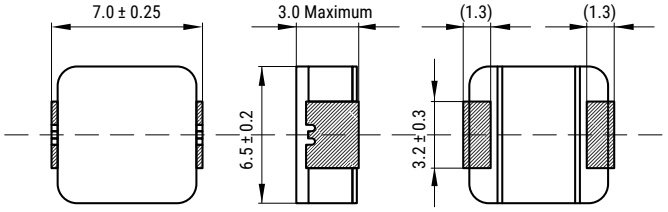
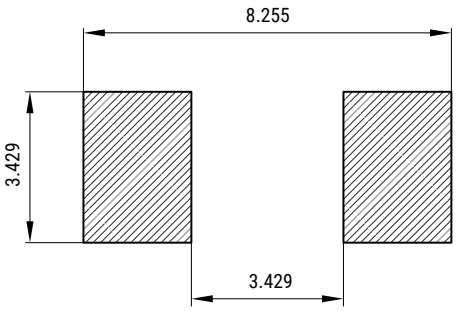
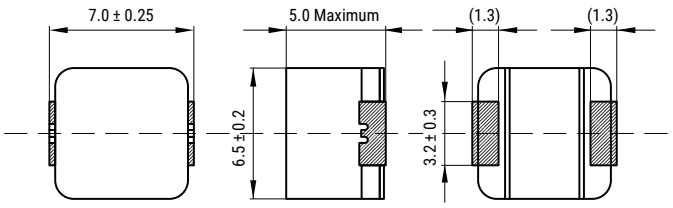
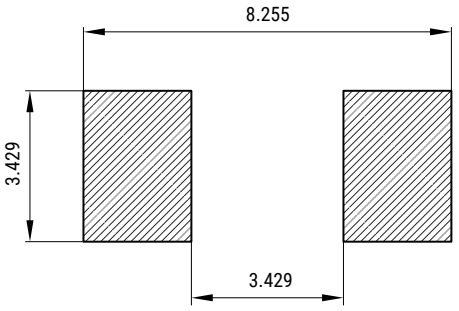
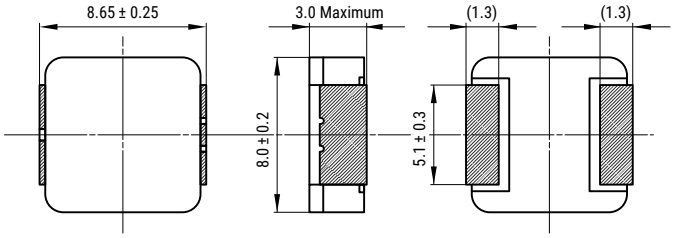
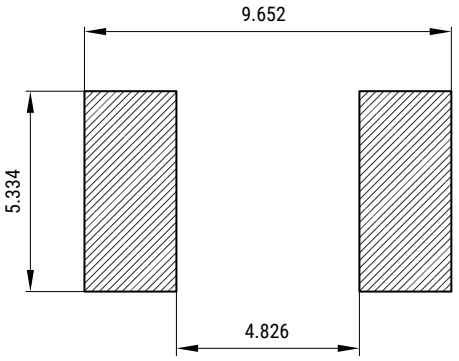
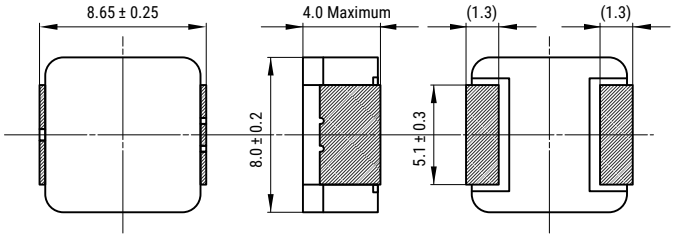
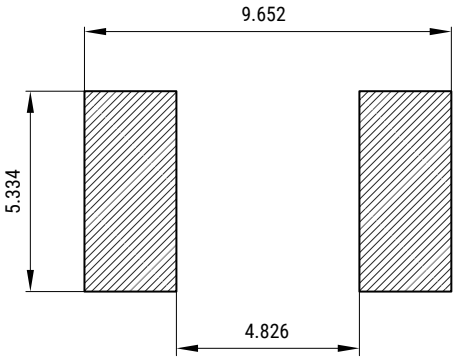
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Dimensions

Case Size	Dimensions (mm)	Land Pattern (mm)
MPXV1D0520		
MPXV1D0530		
MPXV1D0618		
MPXV1D0624		

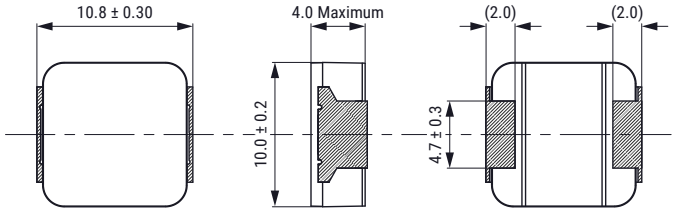
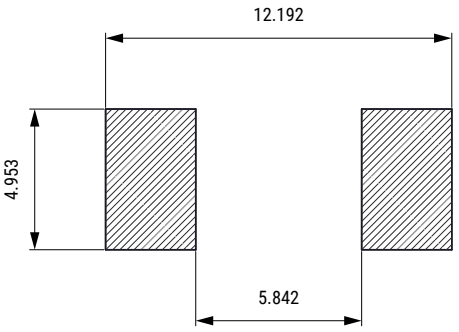
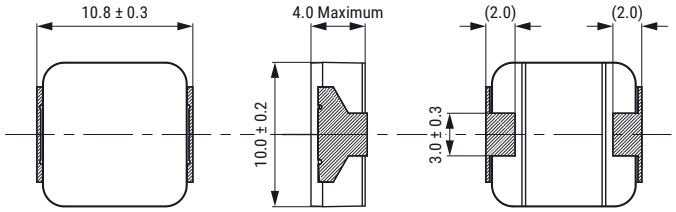
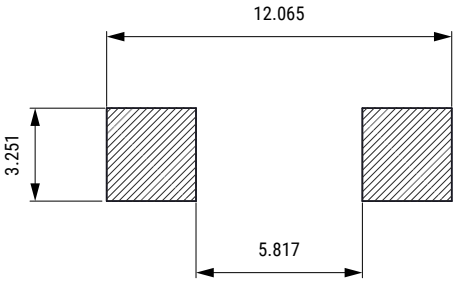
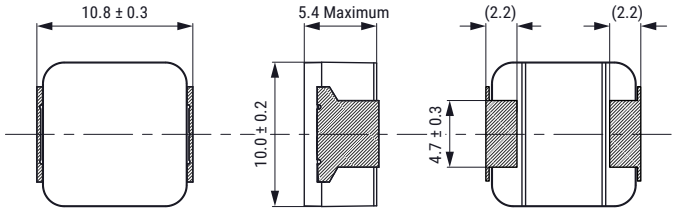
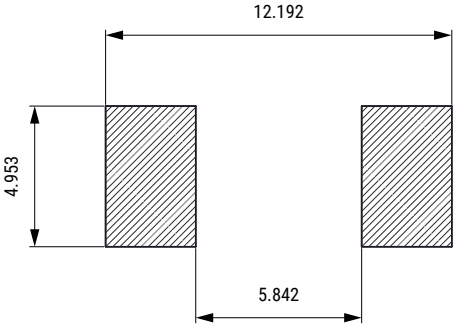
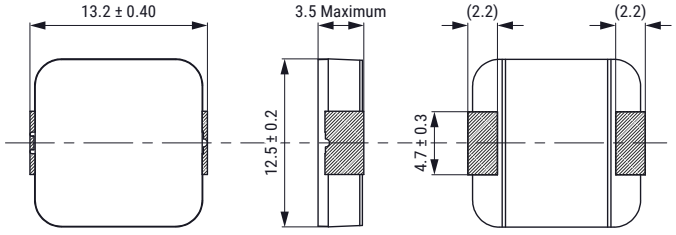
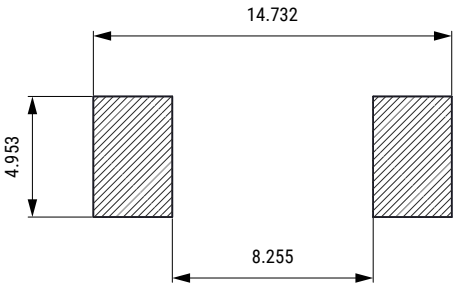
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Dimensions cont.

Case Size	Dimensions (mm)	Land Pattern (mm)
MPXV1D0630		
MPXV1D0650		
MPXV1D0830		
MPXV1D0840		

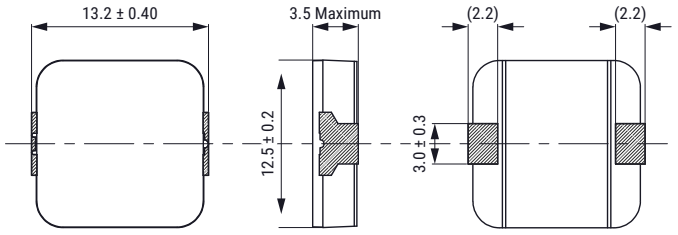
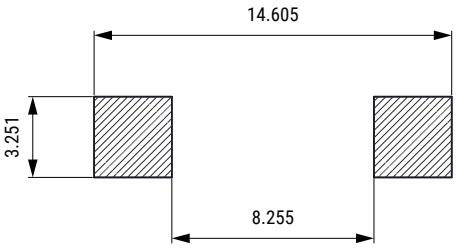
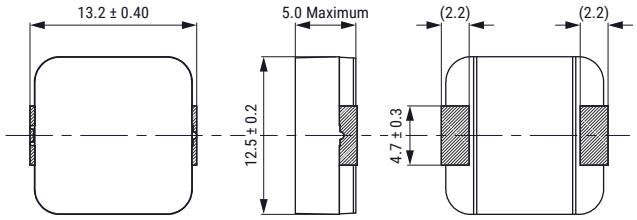
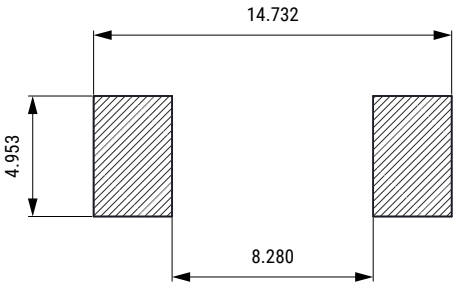
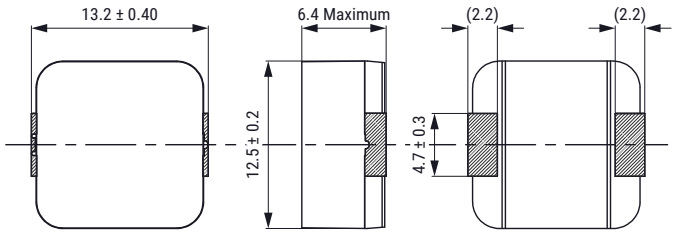
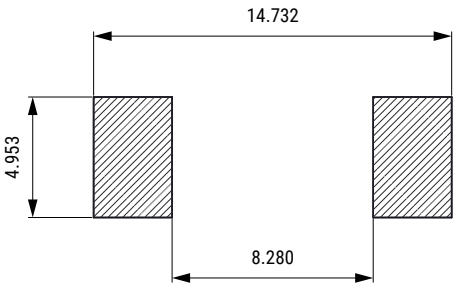
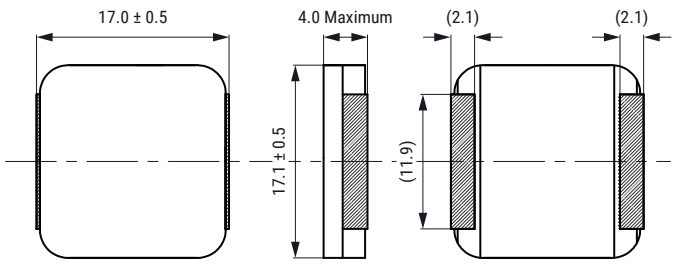
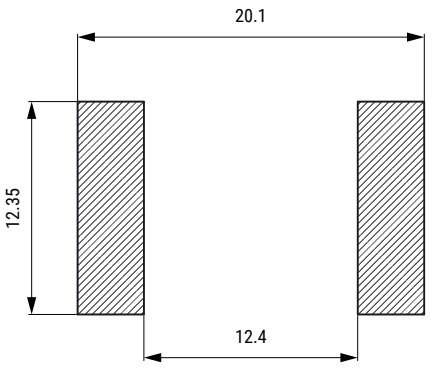
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Dimensions cont.

Case Size	Dimensions (mm)	Land Pattern (mm)
MPXV1D1040 For values up to 1.5 µH or below		
MPXV1D1040 For values from 2.2 µH or above		
MPXV1D1054		
MPXV1D1235 For values up to 0.47 µH or below		

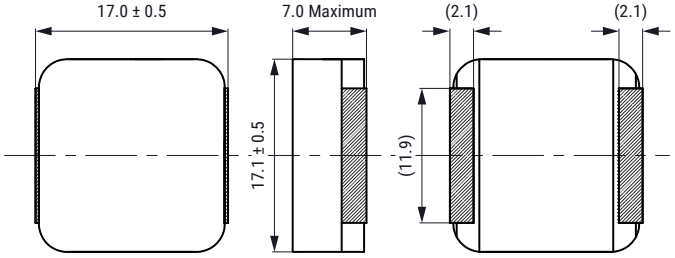
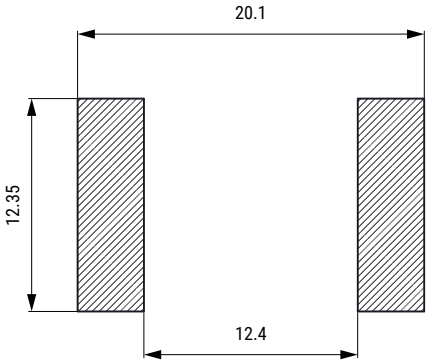
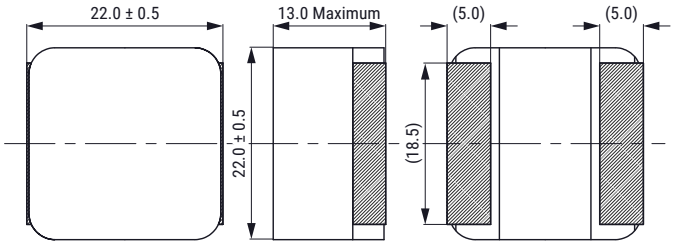
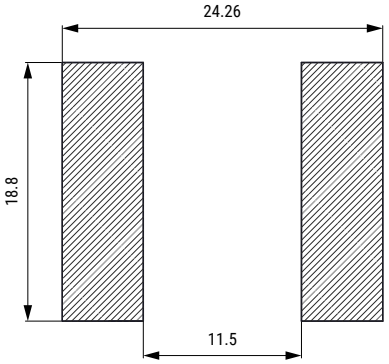
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Dimensions cont.

Case Size	Dimensions (mm)	Land Pattern (mm)
MPXV1D1235 For values from 0.68 µH or above		
MPXV1D1250		
MPXV1D1264		
MPXV1D1740		

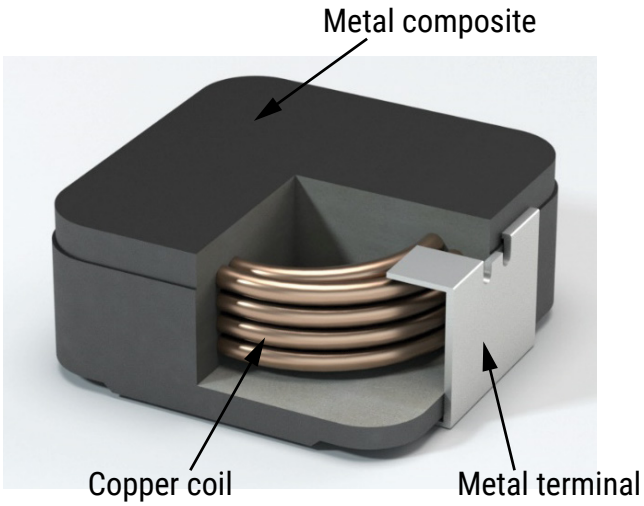
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Dimensions cont.

Case Size	Dimensions (mm)	Land Pattern (mm)
MPXV1D1770		
MPXV1D2213		

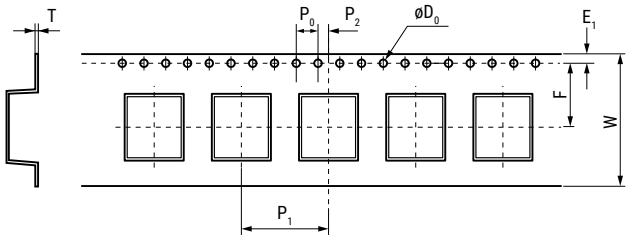
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Construction



Taping Specification

Dimensions of Indented Square Hole Plastic Tape

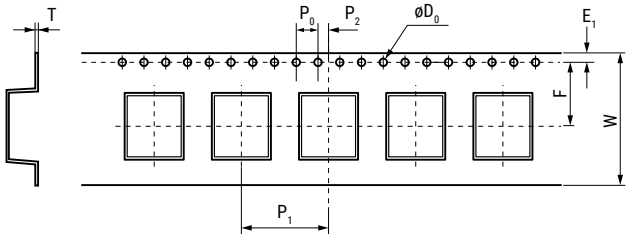


Case Size	Reel Quantity		Dimensions (mm)							
			W	F	E	P_1	P_2	P_0	$øD_0$	T
MPXV1D0520	3,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
		Nominal	12.00	5.50	1.75	8.00	2.00	4.00	1.50	0.40
MPXV1D0530	2,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
		Nominal	12.00	5.50	1.75	8.00	2.00	4.00	1.50	0.40
MPXV1D0618	2,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.50	0.40
MPXV1D0624	1,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.55	0.40
MPXV1D0630	1,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.55	0.40
MPXV1D0650	1,000	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.55	0.40
MPXV1D0830	1,500	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.55	0.40
MPXV1D0840	1,000	Tolerance	±0.30	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05
		Nominal	16.00	7.50	1.75	12.00	2.00	4.00	1.50	0.40

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Taping Specification cont.

Dimensions of Indented Square Hole Plastic Tape

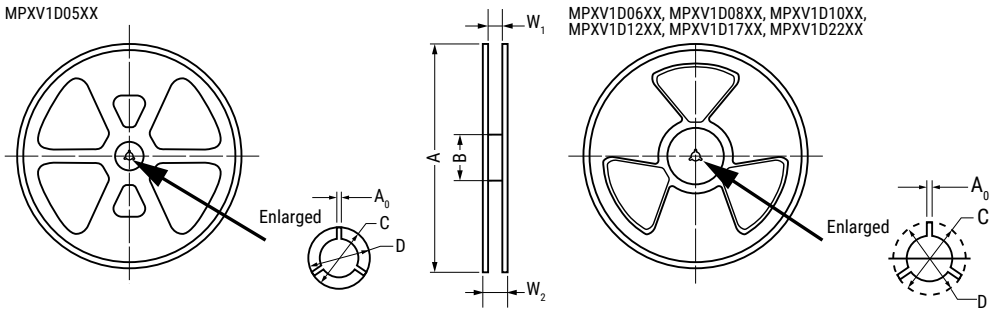


Case Size	Reel Quantity		Dimensions (mm)							
			W	F	E	P_1	P_2	P_0	$øD_0$	T
MPXV1D1040	500	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	16.0	2.0	4.0	1.55	0.4
MPXV1D1054	500	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	16.0	2.0	4.0	1.55	0.4
MPXV1D1235	500	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	24.0	2.0	4.0	1.55	0.4
MPXV1D1250	250	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	24.0	2.0	4.0	1.55	0.4
MPXV1D1264	250	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	24.0	2.0	4.0	1.55	0.4
MPXV1D1740	100	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05
		Nominal	32.0	14.2	1.75	24.0	2.0	4.0	1.50	0.5
MPXV1D1770	100	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05
		Nominal	32.0	14.2	1.75	24.0	2.0	4.0	1.50	0.5
MPXV1D2213	50	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05
		Nominal	44.0	20.2	1.75	32.0	2.0	4.0	1.50	0.5

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Reel Specifications

Reel Dimensions



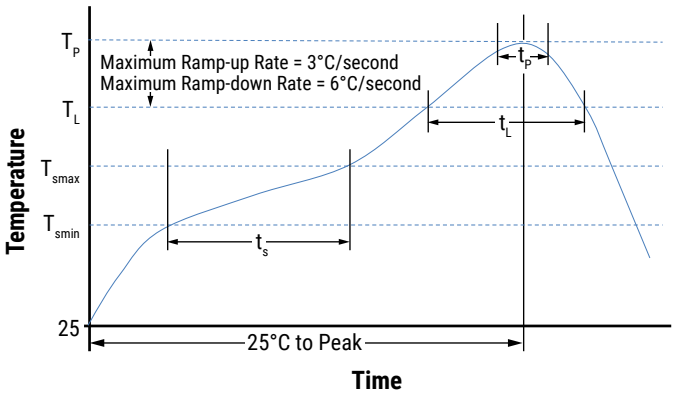
Case Size		Dimensions (mm)						
		A	B	C	D	A_0	W_1	W_2
MPXV1D0520	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø80	ø13.0	ø21.0	2.0	13.5	17.5
MPXV1D0530	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø80	ø13.0	ø21.0	2.0	13.5	17.5
MPXV1D0618	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D0624	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D0630	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D0650	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D0830	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D0840	Tolerance	±2.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.2	ø21.5	2.5	16.9	21.3
MPXV1D1040	Tolerance	±3.0	±2.0	±0.5	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.5	2.6	25.0	29.4
MPXV1D1054	Tolerance	±3.0	±2.0	±0.5	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.5	2.6	25.0	29.4
MPXV1D1235	Tolerance	±3.0	±2.0	±0.5	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.5	2.6	25.0	29.4
MPXV1D1250	Tolerance	±3.0	±2.0	±0.5	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.5	2.6	25.0	29.4
MPXV1D1264	Tolerance	±3.0	±2.0	±0.5	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.5	2.6	25.0	29.4
MPXV1D1740	Tolerance	±3.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.0	2.0	32.4	38.4
MPXV1D1770	Tolerance	±3.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.0	2.0	32.4	38.4
MPXV1D2213	Tolerance	±3.0	±2.0	±0.2	±0.8	±0.5		
	Nominal	ø330	ø100	ø13.0	ø21.0	2.0	44.4	50.4

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Soldering Process

Recommended Reflow Soldering Profile
Reference ICP/JEDEC J-STD-020E

Profile Feature	Pb-Free Assembly
Preheat/Soak	
Temperature Minimum (T_{Smin})	150°C
Temperature Maximum (T_{Smax})	200°C
Time (t_s) from T_{smin} to T_{smax}	60 – 120 seconds
Ramp-Up Rate (T_L to T_P)	3°C/second maximum
Liquidous Temperature (T_L)	217°C
Time Above Liquidous (t_L)	60 – 150 seconds
Peak Temperature (T_P)	260°C for MPXV1D0520, 0618, 0624 250°C for MPXV1D0530, 0630, 0650, 0830, 0840 245°C for MPXV1D1040, 1054, 1235, 1250, 1264, 1740, 1770, 2213
Time within 5°C of Maximum Peak Temperature (t_P)	30 seconds maximum
Ramp-Down Rate (T_P to T_L)	6°C/second maximum
Time 25°C to Peak Temperature	8 minutes maximum



Environmental Compliance

All KEMET SMD Inductors are RoHS compliant.

Handling Precautions

Inductors should be stored in normal working environments. While the inductors themselves are quite robust in other environments, solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine and sulfur bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts.

For optimized solderability, inductors' stock should be used promptly, preferably within six months of receipt.

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