

## MPA \ MPI Series



MPA series is designed for low profile type with low RDC and ultra large current. Its molded magnetic shielded type is suitable for high-density mounting and ultra low buzz noise. Soldering conditions can be easily confirmed when mounting onto the board. This series also provides customers with embossed carrier type packaging for automatic mounting machine.

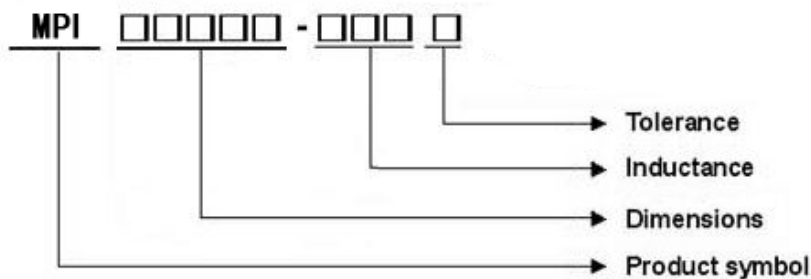
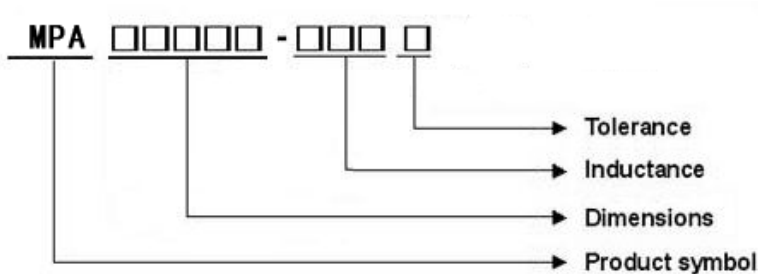
### Features

- RoHS compliant
- Low profile type
- Shielded construction
- Ultra low buzz noise, due to un-assembly structure

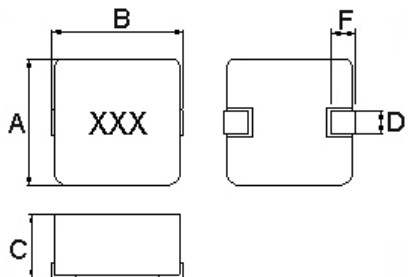
### Applications

- High density DC/DC converters
- POL converters
- High current VRM/VRD for notebook / Server / desktop CPUs
- High speed charger

### Product Identification



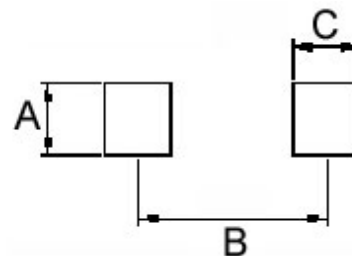
### Shapes and Dimensions



Dimensions in mm

TYPE	A	B Max	C Max	D	F
06024	6.6±0.2	7.3	2.4	2.4±0.3	1.6±0.5
06030	6.6±0.2	7.3	3.0	2.4	1.6±0.5
10040	10.1±0.3	11.6	4.0	3.0	2.5±0.5
12050	12.6±0.2	13.8	5.0	3.7	2.7±0.7

### Recommended Pattern



Dimensions in mm

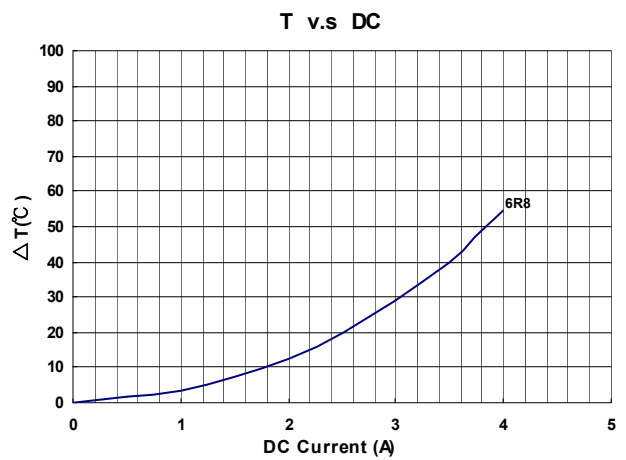
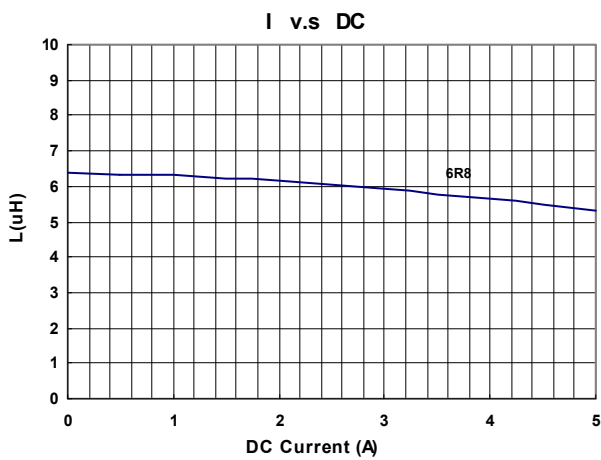
TYPE	A	B	C
06024	3.5	6.05	2.35
06030	3.5	6.05	2.35
10040	4.0	9.5	3.5
12050	5.0	10.5	4.0

## Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (MHz)	Irms	Isat	RDC
	(uH)Idc=0A	(±%)		(A)Typ	(A)Typ	(mΩ)Max.
MPI06024-6R8M	6.8	20	1MHz,1V	3.5	4	66(62.5typ)

- **Irms** DC current (A) that will cause an approximate  $\Delta T$  of 40°C.
- **Isat** DC current (A) that will cause L to drop approximately 30%
- Tolerance : M=  $\pm 20\%$
- L : WK 3260B
- Rdc : CHEN HWA502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

**Test Instruments** : WK3260B Impedance / Material Analyzer

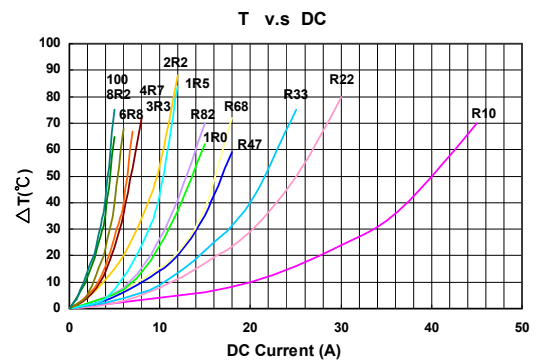
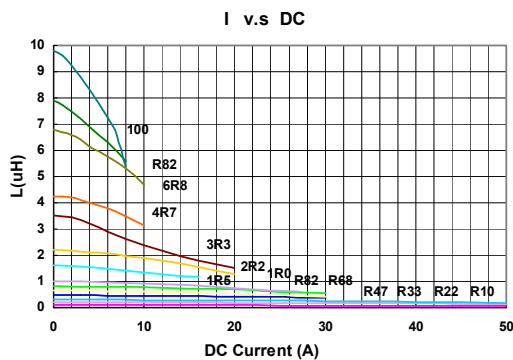


## Electrical Characteristics

Part Number	Inductance ( $\mu\text{H}$ )	Tolerance ( $\pm\%$ )	Test Frequency (KHz)	I <sub>rms</sub> (A)Typ	I <sub>sat</sub> (A)Typ	RDC ( $\text{m}\Omega$ )Max.
MPI06030-R10M-R8	0.10	20	100KHz,0.5V	37	45	1.5(1.3typ)
MPI06030-R22M-R8	0.22	20	100KHz,0.5V	23	40	2.8(2.5typ)
MPI06030-R33M-R8	0.33	20	100KHz,0.5V	20	33	4.2(4.0typ)
MPI06030-R47M-R8	0.47	20	100KHz,0.5V	16.5	27	5.5(5.0typ)
MPI06030-R68M-R8	0.68	20	100KHz,0.5V	15	24	6.3(5.7typ)
MPI06030-R82M-R8	0.82	20	100KHz,0.5V	13	23	8.0(7.5typ)
MPI06030-1R0M-R8	1.0	20	100KHz,0.5V	12	22	10(9.0typ)
MPI06030-1R5M-R8	1.5	20	100KHz,0.5V	9.5	18	15(13.5typ)
MPI06030-2R2M-R8	2.2	20	100KHz,0.5V	8.5	14	20(17.0typ)
MPI06030-3R3M-R8	3.3	20	100KHz,0.5V	6	12	35(32.0typ)
MPI06030-4R7M-R8	4.7	20	100KHz,0.5V	5.5	9	40(35.0typ)
MPI06030-6R8M-R8	6.8	20	100KHz,0.5V	4.5	8	60(54.0typ)
MPA06030-8R2M-R7	8.2	20	100KHz,0.5V	4.5	6	60(54.0typ)
MPA06030-100M-R7	10	20	100KHz,0.5V	4	5.5	68(62.0typ)

- I<sub>rms</sub> DC current (A) that will cause an approximate  $\Delta T$  of 40°C.
- I<sub>sat</sub> DC current (A) that will cause L to drop approximately 30%
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

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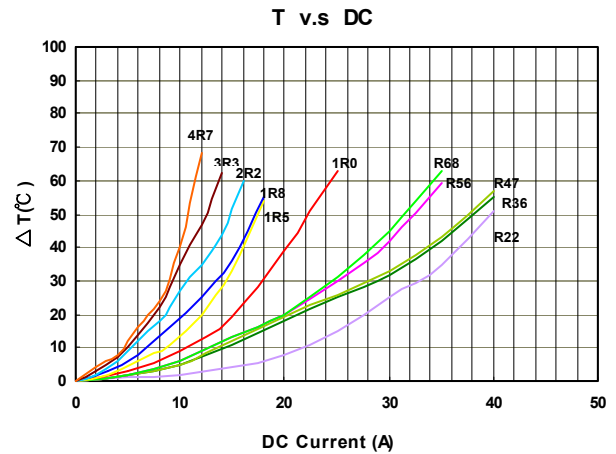
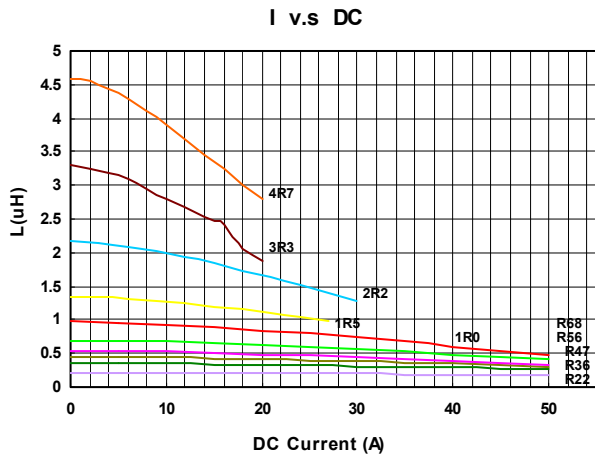


## Electrical Characteristics

Part Number	Inductance ( $\mu\text{H}$ )	Tolerance ( $\pm\%$ )	Test Frequency (KHz)	I <sub>rms</sub> (A)Typ	I <sub>sat</sub> (A)Typ	RDC (m $\Omega$ )Max.
MPA10040-R22M	0.22	20	100KHz,0.5V	35	45	0.6
MPA10040-R36M	0.36	20	100KHz,0.5V	34	42	1.2
MPA10040-R47M	0.47	20	100KHz,0.5V	33	38	1.2
MPA10040-R56M	0.56	20	100KHz,0.5V	27	32	1.55
MPA10040-R68M	0.68	20	100KHz,0.5V	27	30	1.55
MPA10040-1R0M	1.0	20	100KHz,0.5V	20	26	3.1
MPA10040-1R5M	1.5	20	100KHz,0.5V	16	22	4.2
MPA10040-1R8M	1.8	20	100KHz,0.5V	15.3	16	5
MPA10040-2R2M	2.2	20	100KHz,0.5V	14	16	7
MPA10040-3R3M	3.3	20	100KHz,0.5V	11	12	13.2
MPI10040-4R7M	4.7	20	100KHz,0.5V	10	13	16.5

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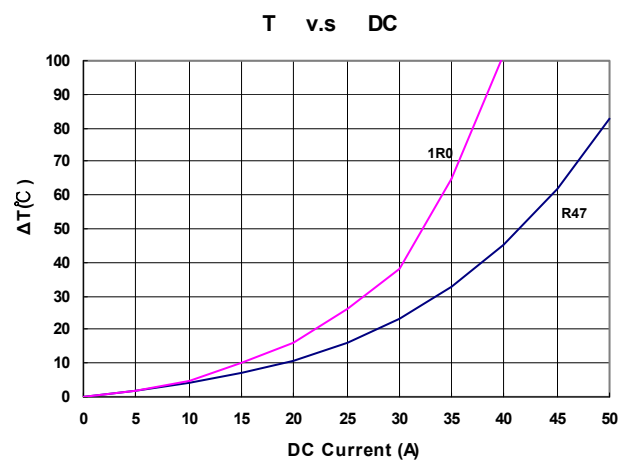
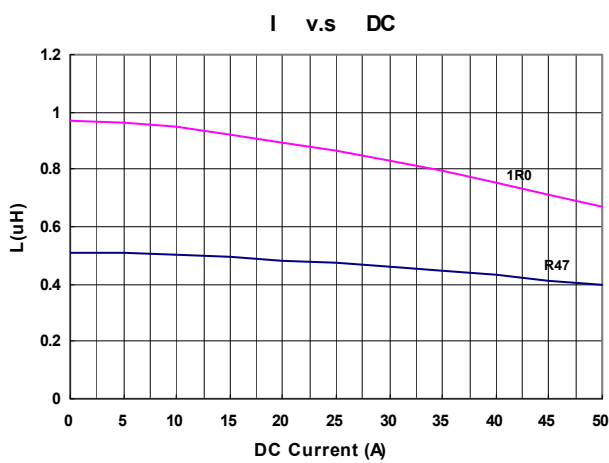


## Electrical Characteristics

Part Number	Inductance ( $\mu\text{H}$ )	Tolerance ( $\pm\%$ )	Test Frequency (KHz)	I <sub>rms</sub> (A)Typ	I <sub>sat</sub> (A)Typ	RDC ( $\text{m}\Omega$ )Max.
MPA12050-R47M-R7	0.47	20	100KHz,0.5V	37	46	1.2
MPA12050-1R0M-R7	1.0	20	100KHz,0.5V	29	37	2.5

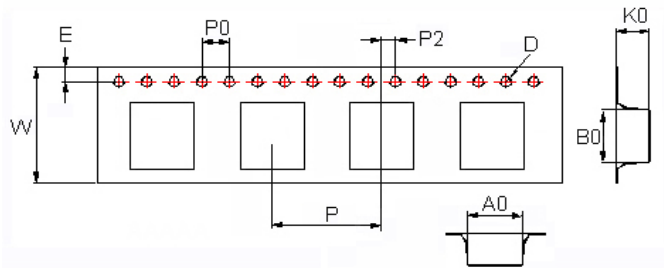
- I<sub>rms</sub> current (A) that will cause an approximate  $\Delta T$  of  $40^\circ\text{C}$ .
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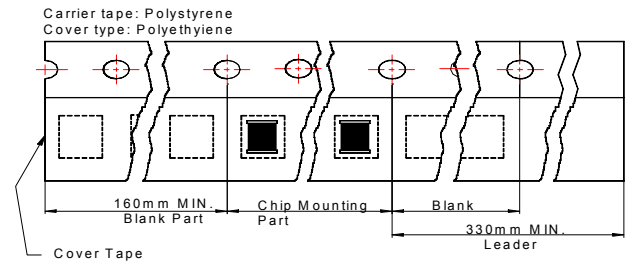


## Packaging Specifications

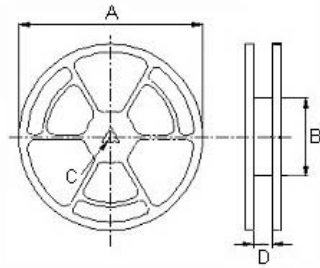
### Tape Dimensions



### Tape Material



### Reel Dimensions



### Dimensions in mm

TYPE	Tape Dimensions									Reel Dimensions				Quantity
	A0	B0	K0	D	E	W	P	P0	P2	A	B	C	D	PCS / REEL
MPI06024	6.9	7.6	2.9	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
MPA06030	6.9	7.6	3.4	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
MPA10040	10.4	12.2	4.25	1.55	1.75	24	16	4	2	330	100	13	24.4	500
MPA12050	13	14	5.25	1.55	1.75	24	16	4	2	330	100	13	24.4	500