

MHCC、MHCI Series



MHCC 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.

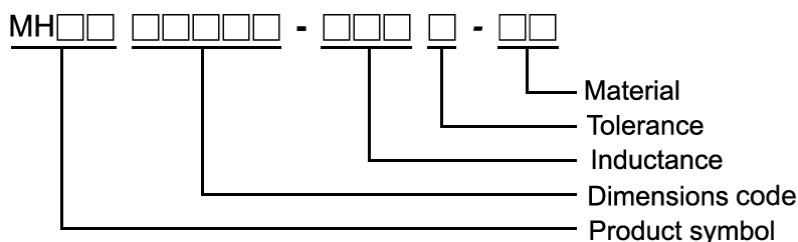
Features

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

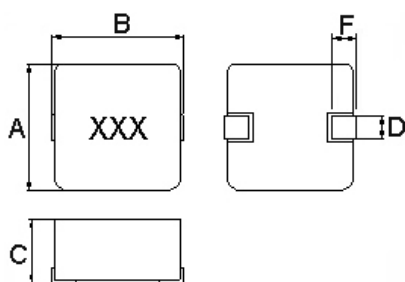
Applications

- High density DC/DC converters
- POL converters
- High current VRM/VRD for notebook / Server / desktop CPUs
- High speed charger
- For thickness less than 1.2mm, suitable for low profile applications e.g., for Ultra thin NB/Monitor/TV/Tablet

Product Identification



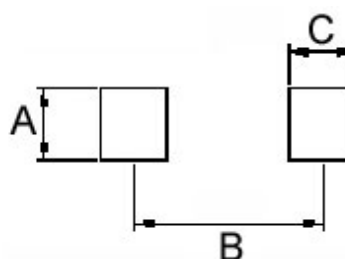
Shapes and Dimensions



Dimensions in mm

TYPE	A	B Max	C Max	D	F
04012	4.1±0.2	4.6±0.2	1.2	1.5±0.3	1.0±0.5
04015	4.1±0.2	4.6±0.2	1.5	1.5±0.3	1.0±0.5
04020	4.1±0.2	4.6±0.2	2.0	1.5±0.3	1.0±0.5
05015	5.4±0.35	5.7±0.2	1.5	2.0±0.3	1.5±0.3
05020	5.4±0.35	5.7±0.2	1.8±0.2	2.0±0.3	1.5±0.3
05030	5.4±0.35	5.7±0.2	3.0	2.0±0.3	1.5±0.3
06012	6.6±0.2	7.3	1.2±0.2	2.9	1.6±0.5
06015	6.6±0.2	7.3	1.3±0.2	2.9	1.6±0.5
06018	6.6±0.2	7.3	1.6±0.2	2.9	1.6±0.5

Recommended Pattern



Dimensions in mm

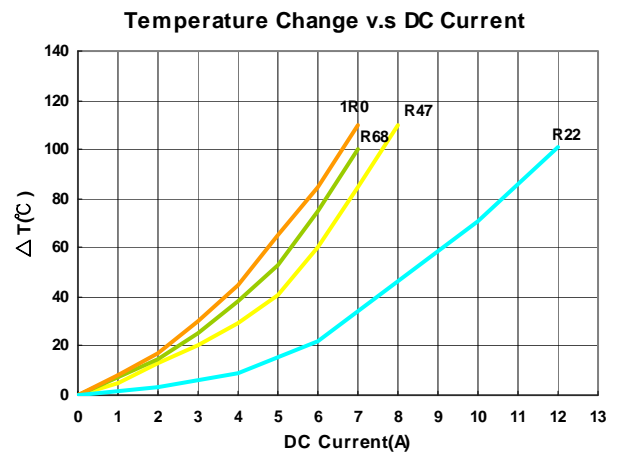
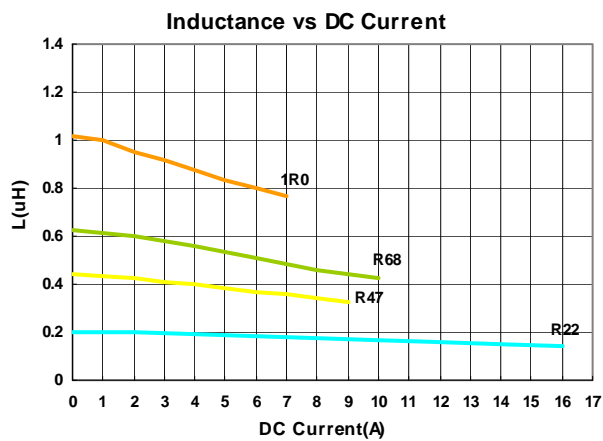
TYPE	A	B	C
04012	2.5	3.7	1.5
04015	2.5	3.7	1.5
04020	2.5	3.7	1.5
05015	2.5	4.1	1.9
05020	2.5	4.1	1.9
05030	2.5	4.1	
06012	3.5	6.05	2.35
06015	3.5	6.05	2.35
06018	3.5	6.05	2.35

Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCI04012-R22M-R8	0.22	20	100KHz,0.5V	8.5	11.5	12(11typ)
MHCI04012-R47M-R8	0.47	20	100KHz,0.5V	5.0	7.0	25(20typ)
MHCI04012-R68M-R8	0.68	20	100KHz,0.5V	4.0	6.0	37(34typ)
MHCI04012-1R0M-R8	1.0	20	100KHz,0.5V	4.0	5.2	46(38typ)

- **Irms** DC current (A) that will cause an approximate ΔT 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

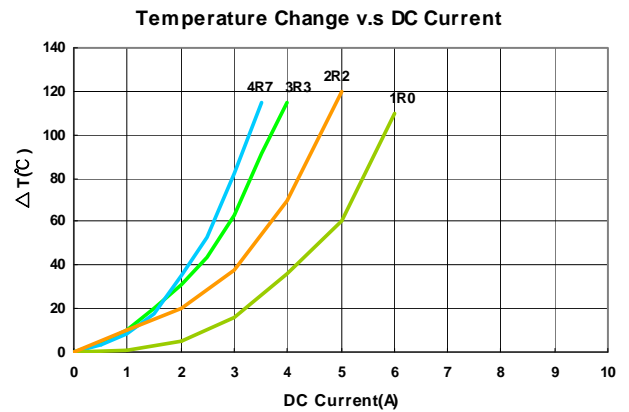
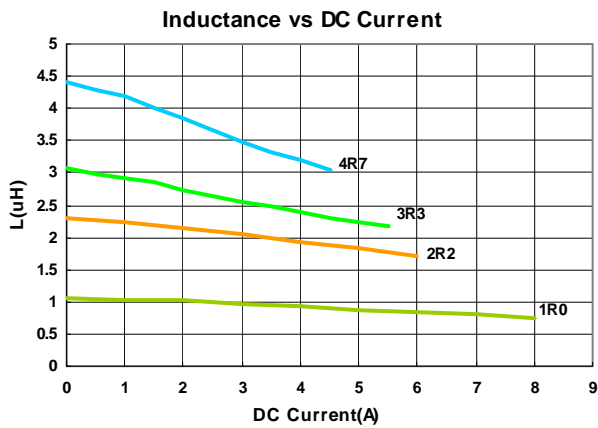


Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCI04015-1R0M-R8	1.0	20	100KHz,0.5V	4	7	46(38typ)
MHCI04015-2R2M-R8	2.2	20	100KHz,0.5V	3	5	86(72typ)
MHCI04015-3R3M-R8	3.3	20	100KHz,0.5V	2.3	4.5	138(115typ)
MHCI04015-4R7M-R8	4.7	20	100KHz,0.5V	2	4	146(112typ)

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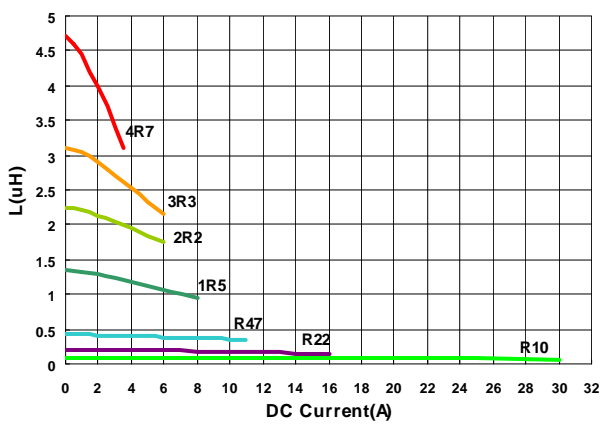
Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCI04020-R10M-R8	0.10	20	100KHz,0.5V	12.0	25	4(3.5typ)
MHCI04020-R22M-R8	0.22	20	100KHz,0.5V	9.0	12.5	6.6(6typ)
MHCI04020-R47M-R8	0.47	20	100KHz,0.5V	7.0	9.5	14(12.5typ)
MHCI04020-1R5M-R8	1.5	20	100KHz,0.5V	4.0	6.0	46(38typ)
MHCI04020-2R2M-R8	2.2	20	100KHz,0.5V	3.0	5.0	58(52typ)
MHCI04020-3R3M-R8	3.3	20	100KHz,0.5V	2.5	4.0	87(74typ)
MHCI04020-4R7M-R8	4.7	20	100KHz,0.5V	2.2	3.0	105(92typ)

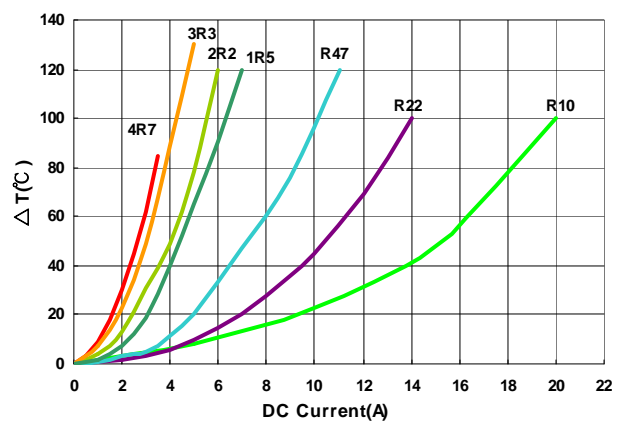
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Inductance vs DC Current



Temperature Change v.s DC Current

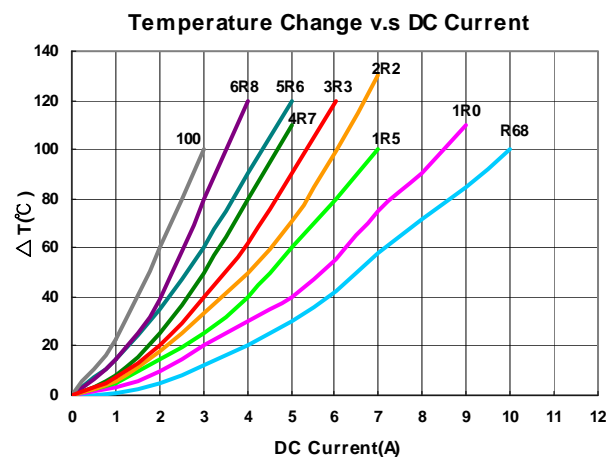
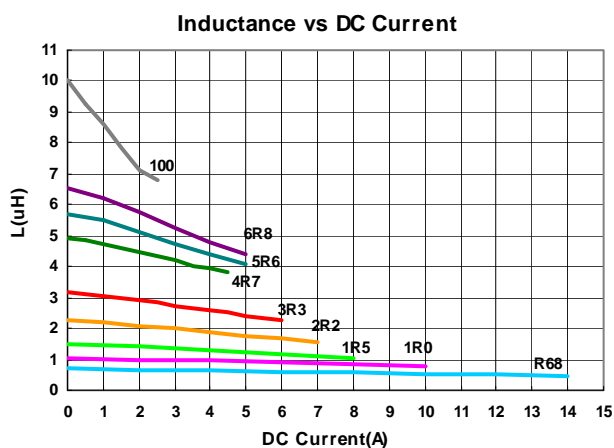


Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency	I _{rms}	I _{sat}	RDC
	(μ H)	($\pm\%$)	(KHz)	(A)Typ	(A)Typ	(m Ω)Max.
MHCI05015-R68M-R8	0.68	20	100KHz,0.5V	6.0	10	23(19typ)
MHCI05015-1R0M-R8	1.0	20	100KHz,0.5V	5.0	8.0	33(27typ)
MHCI05015-1R5M-R8	1.5	20	100KHz,0.5V	4.0	6.0	50(41typ)
MHCI05015-2R2M-R8	2.2	20	100KHz,0.5V	3.3	6.0	68(57typ)
MHCI05015-3R3M-R8	3.3	20	100KHz,0.5V	3.0	5.0	84(70typ)
MHCI05015-4R7M-R8	4.7	20	100KHz,0.5V	2.5	4.0	135(128typ)
MHCI05015-5R6M-R8	5.6	20	100KHz,0.5V	2.2	3.5	175(146typ)
MHCI05015-6R8M-R8	6.8	20	100KHz,0.5V	2.0	3.0	192(160typ)
MHCI05015-100M-R8	10	20	100KHz,0.5V	1.5	2.0	195(175typ)

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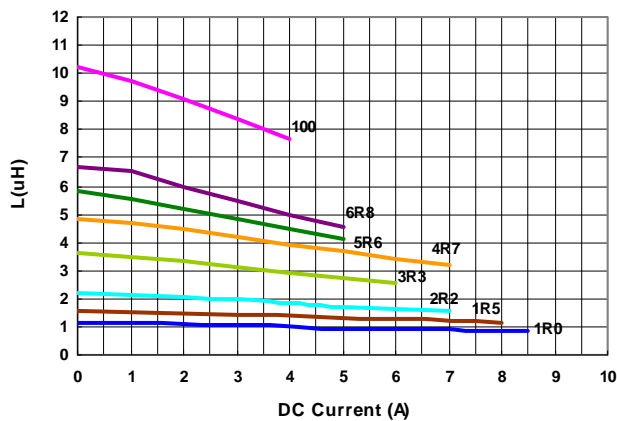
Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency	I _{rms}	I _{sat}	RDC
	(μ H)	($\pm\%$)	(KHz)	(A)Typ	(A)Typ	(m Ω)Max.
MHCI05020-1R0M-R8	1.0	20	100KHz,0.5V	6.0	7.0	30(27typ)
MHCI05020-1R5M-R8	1.5	20	100KHz,0.5V	5.5	6.5	35(30typ)
MHCI05020-2R2M-R8	2.2	20	100KHz,0.5V	4.0	6.0	45(40typ)
MHCI05020-3R3M-R8	3.3	20	100KHz,0.5V	3.5	5.5	60(55typ)
MHCI05020-4R7M-R8	4.7	20	100KHz,0.5V	3.0	5.0	90(75typ)
MHCI05020-5R6M-R8	5.6	20	100KHz,0.5V	2.8	4.5	120(100typ)
MHCI05020-6R8M-R8	6.8	20	100KHz,0.5V	2.8	4.5	125(115typ)
MHCI05020-100M-R8	10	20	100KHz,0.5V	2.3	4.0	180(163typ)

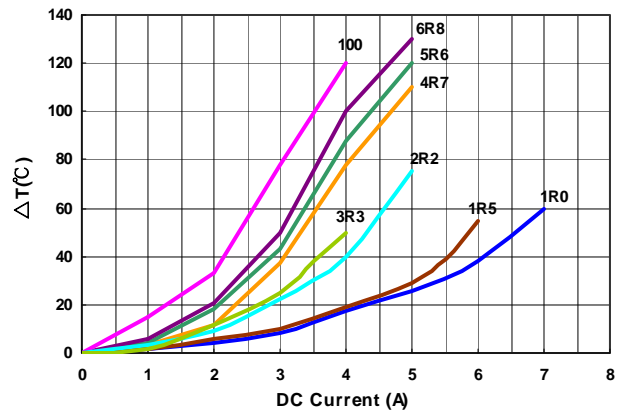
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Inductance v.s DC Current



Temperature Change v.s DC Current

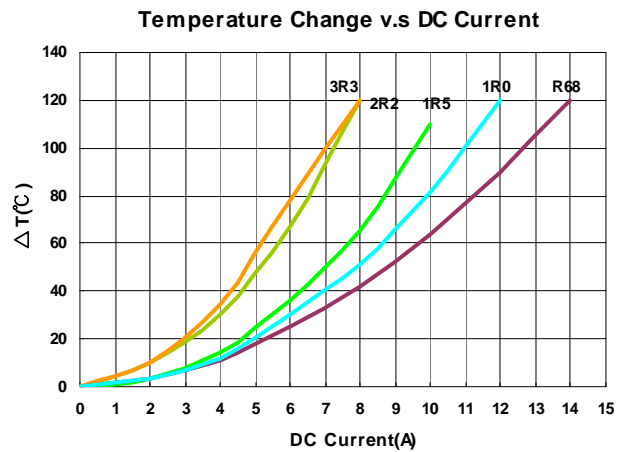
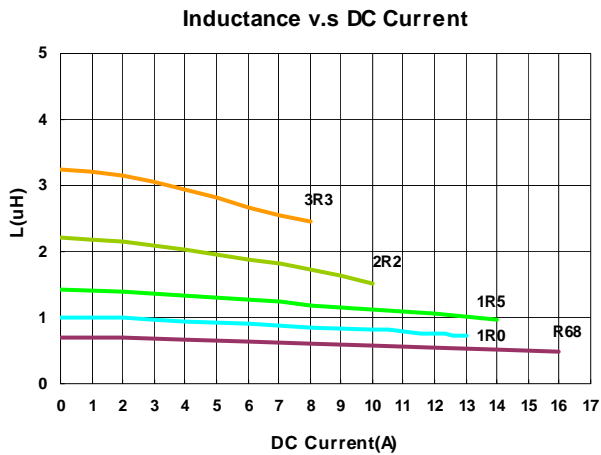


Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	I _{rms}	I _{sat}	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCI05030-R68M-R8	0.68	20	100KHz,0.5V	8.0	14	12(11typ)
MHCI05030-1R0M-R8	1.0	20	100KHz,0.5V	7.0	11	15(14typ)
MHCI05030-1R5M-R8	1.5	20	100KHz,0.5V	6.0	10	25(20typ)
MHCI05030-2R2M-R8	2.2	20	100KHz,0.5V	5.0	8	35(29typ)
MHCI05030-3R3M-R8	3.3	20	100KHz,0.5V	4.5	7	46(38typ)

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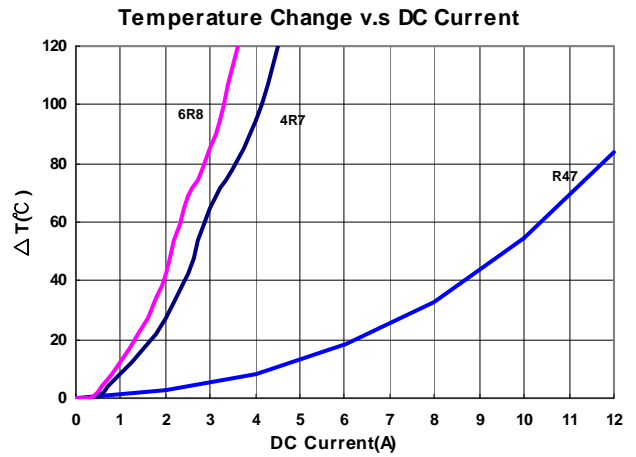
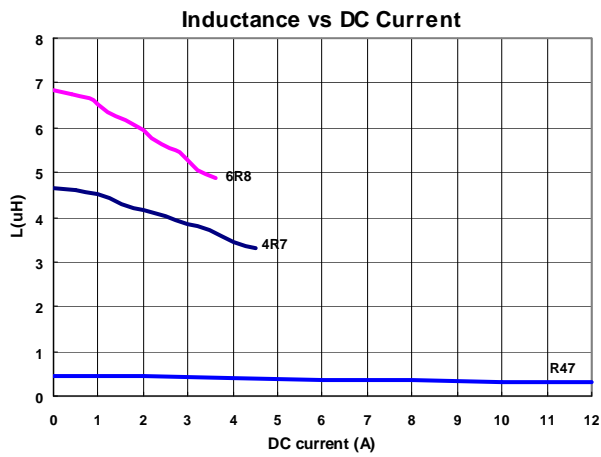


Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCC06012-R47M-R1	0.47	20	100KHz,0.5V	8	9	17(15typ)
MHCI06012-4R7M-R8	4.7	20	100KHz,0.5V	2.4	4	160(145typ)
MHCI06012-6R8M-R8	6.8	20	100KHz,0.5V	2.1	3	200(175typ)

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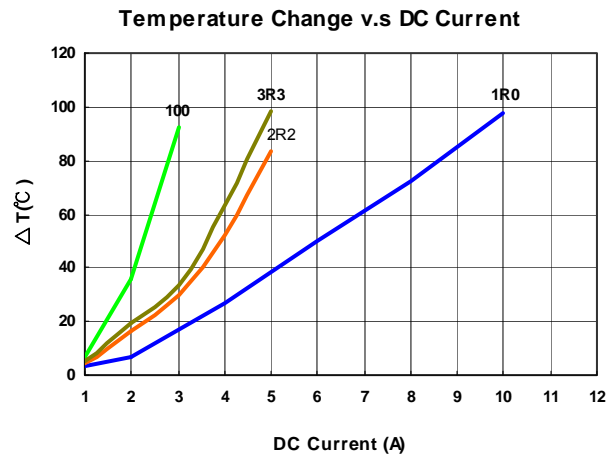
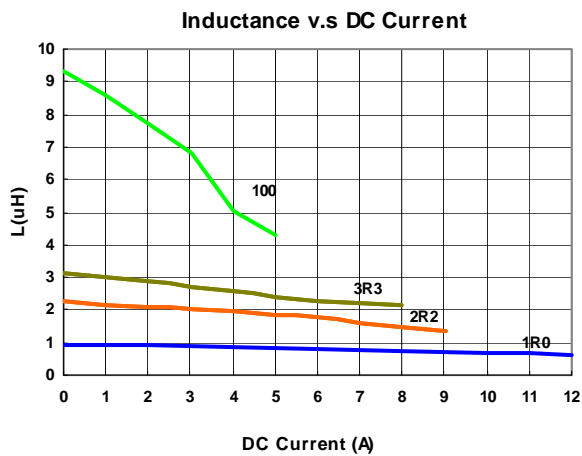


Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCC06015-1R0M-R7	1.0	20	100KHz,0.5V	9.0	10	23(20.2typ)
MHCC06015-100M-R1	10	20	100KHz,0.5V	2.0	3.0	155(145typ)
MHCI06015-2R2M-R8	2.2	20	100KHz,0.5V	3.5	6.0	54(46typ)
MHCI06015-3R3M-R8	3.3	20	100KHz,0.5V	3.3	5.5	63(54typ)

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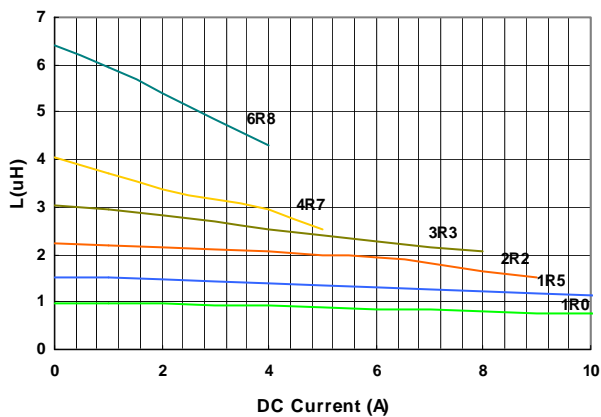
Electrical Characteristics

Part Number	Inductance	Tolerance	Test Frequency (KHz)	Irms	Isat	RDC
	(μ H)	($\pm\%$)		(A)Typ	(A)Typ	($m\Omega$)Max.
MHCI06018-1R0M-R8	1.0	20	100KHz,0.5V	7.0	12.0	18.5(17typ)
MHCI06018-1R5M-R8	1.5	20	100KHz,0.5V	5.0	10.5	28(24typ)
MHCI06018-2R2M-R8	2.2	20	100KHz,0.5V	5.0	8.0	35(31typ)
MHCI06018-3R3M-R8	3.3	20	100KHz,0.5V	3.5	8.0	60(56typ)
MHCI06018-4R7M-R8	4.7	20	100KHz,0.5V	3.5	5.0	72(65typ)
MHCI06018-6R8M-R8	6.8	20	100KHz,0.5V	2.8	3.5	110(98typ)

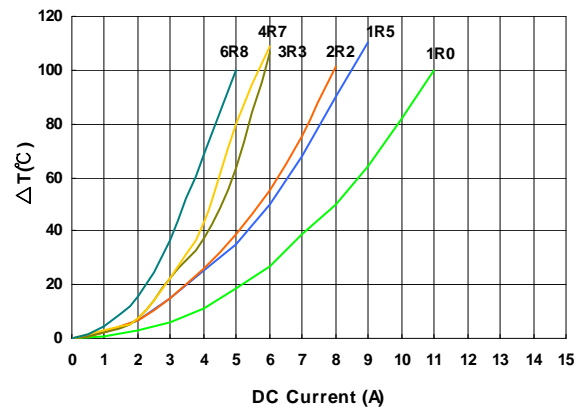
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Inductance v.s DC Current

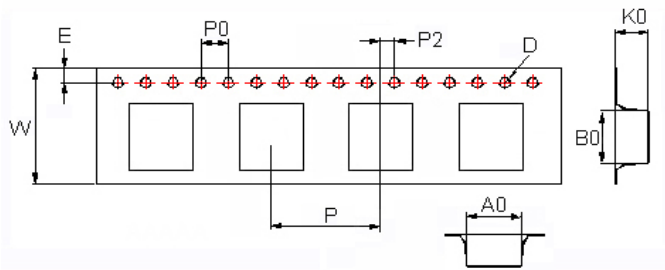


Temperature Change v.s DC Current

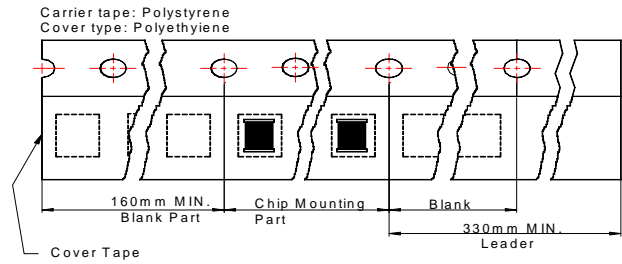


Packaging Specifications

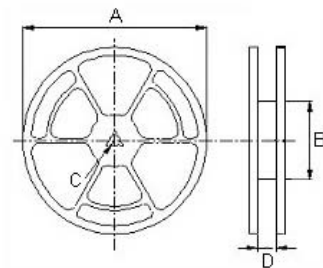
Tape Dimensions



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
04012	4.4	4.9	1.5	1.55	1.75	16	12	4	2	330	100	13	16.0	2000
04015	4.6	5.0	2.4	1.55	1.75	16	12	4	2	330	100	13	16.0	2000
04020	4.6	5.0	2.4	1.55	1.75	12	8	4	2	330	100	13	16.0	2000
05015	5.9	6.2	1.9	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
05020	5.9	6.2	2.4	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
05030	5.9	6.2	3.4	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
06012	6.9	7.6	1.6	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
06015	6.9	7.6	1.9	1.55	1.75	16	12	4	2	330	100	13	16.0	1000
06018	6.9	7.6	2.2	1.55	1.75	16	12	4	2	330	100	13	16.0	1000