

HCM 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.

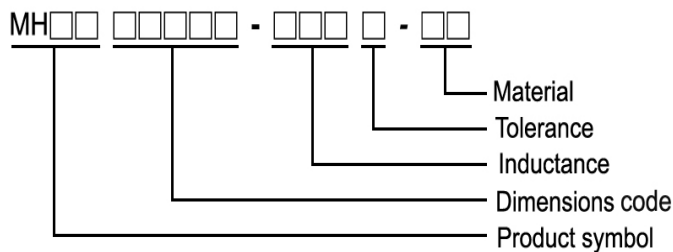
Features

- RoHS compliant
- Low profile type
- Shielded construction
- Ultra low buzz noise due to molding construction

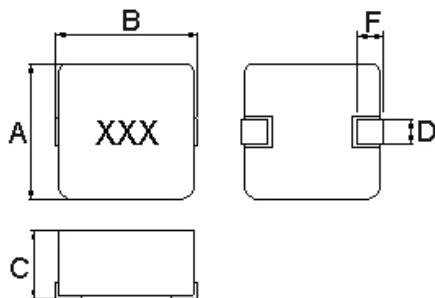
Applications

- 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., Ultra thin NB/Monitor/TV/Tablet

Product Identification



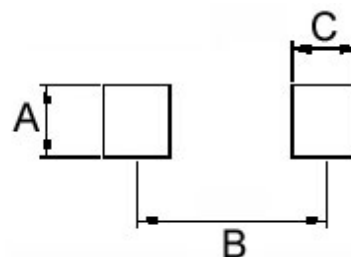
Shape and Dimensions



Dimensions in mm

TYPE	A	B Max	C Max	D	F
0412	4.1±0.2	4.6±0.2	1.2	1.5±0.3	1.0±0.5
0415	4.1±0.2	4.6±0.2	1.5	1.5±0.3	1.0±0.5
0420	4.1±0.2	4.6±0.2	2.0	1.5±0.3	1.0±0.5
0512	5.4±0.35	5.7±0.2	1.2	2.0±0.3	1.5±0.3
0515	5.4±0.35	5.7±0.2	1.5	2.0±0.3	1.5±0.3
0518	5.4±0.35	5.7±0.2	1.8	2.0±0.3	1.5±0.3
0520	5.4±0.35	5.7±0.2	1.8±0.2	2.0±0.3	1.5±0.3
0530	5.4±0.35	5.7±0.2	3.0	2.0±0.3	1.5±0.3
0612	6.6±0.2	7.3	1.2±0.2	2.9	1.6±0.5
0615	6.6±0.2	7.3	1.3±0.2	2.9	1.6±0.5
0618	6.6±0.2	7.3	1.6±0.2	2.9	1.6±0.5
0624	6.6±0.2	7.3	2.4	2.9	1.6±0.5
0630	6.6±0.2	7.3	3.0	2.9	1.6±0.5
1030	10.1±0.3	11.6	3.0	3.0	2.5±0.5
1040	10.1±0.3	11.6	4.0	3.0	2.5±0.5
12035	12.6±0.2	13.8	3.5	3.7	2.7±0.7
1250	12.6±0.2	13.8	5.0	3.7	2.7±0.7
1270	12.6±0.2	13.8	6.0	3.7	2.7±0.7

Recommended Pattern



Dimensions in mm

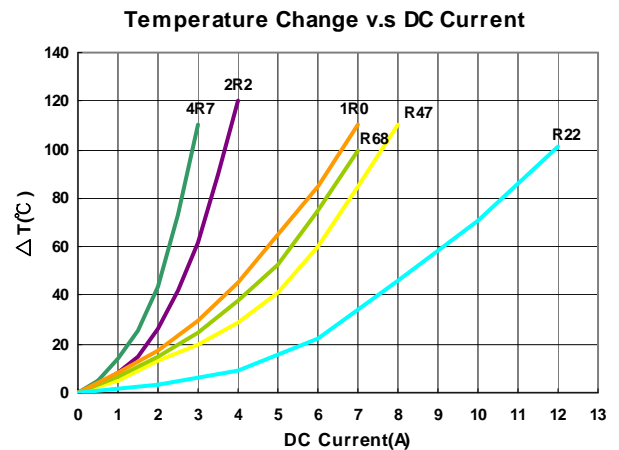
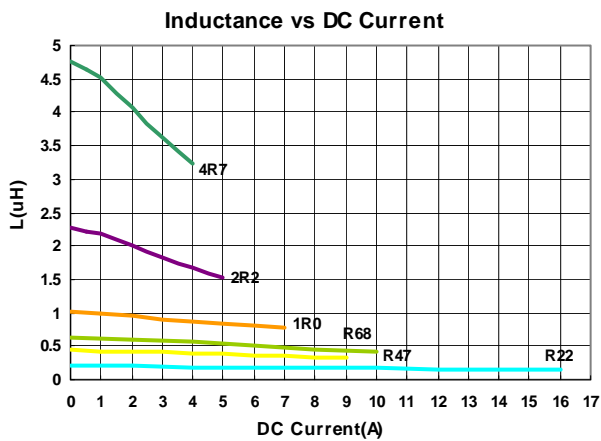
TYPE	A	B	C
0412	2.5	3.7	1.5
0415	2.5	3.7	1.5
0420	2.5	3.7	1.5
0512	2.5	4.1	1.9
0515	2.5	4.1	1.9
0518	2.5	4.1	1.9
0520	2.5	4.1	1.9
0530	2.5	4.1	1.9
0612	3.5	6.05	2.35
0615	3.5	6.05	2.35
0618	3.5	6.05	2.35
0624	3.5	6.05	2.35
0630	3.5	6.05	2.35
1030	4.0	9.5	3.5
1040	4.0	9.5	3.5
12035	5.0	10.5	4.0
1250	5.0	10.5	4.0
1270	5.0	10.5	4.0

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (mΩ)Max
HCM0412-R22M	0.22	20	100	8.5	11.5	12
HCM0412-R47M	0.47	20	100	5.0	7.0	25
HCM0412-R68M	0.68	20	100	4.5	6.0	36
HCM0412-1R0M	1.0	20	100	4.2	5.2	47
HCM0412-2R2M	2.2	20	100	2.75	3.5	83.5
HCM0412-4R7M	4.7	20	100	1.8	2.8	195

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= ±20%
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

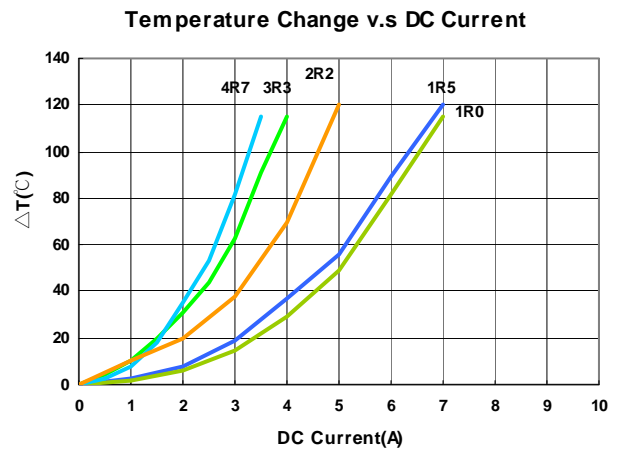
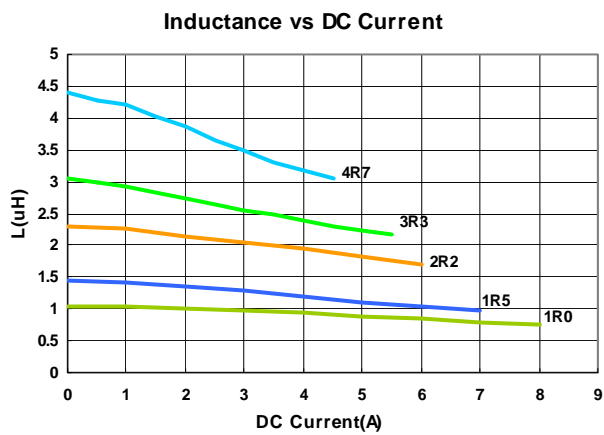


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0415-1R0M	1.0	20	100	4	7	42
HCM0415-1R5M	1.5	20	100	3.5	6	50
HCM0415-2R2M	2.2	20	100	3	5	79
HCM0415-3R3M	3.3	20	100	2.3	4.5	132
HCM0415-4R7M	4.7	20	100	2	4	146

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
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- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

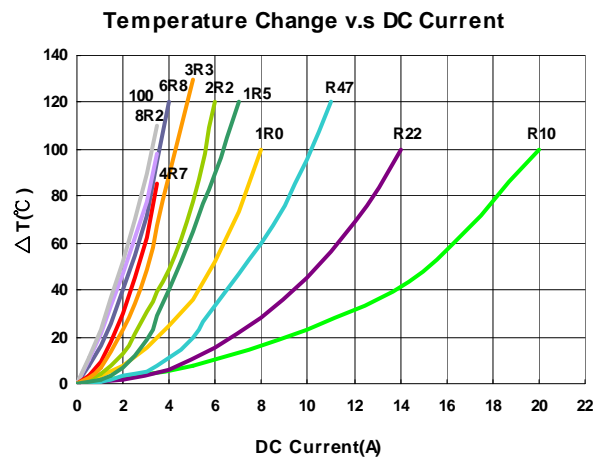
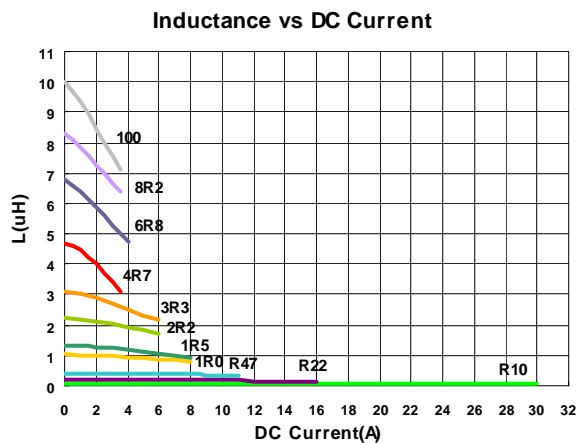


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0420-R10M	0.10	20	100	12.0	25	4
HCM0420-R22M	0.22	20	100	9.0	12.5	6.6
HCM0420-R47M	0.47	20	100	7.0	9.5	14
HCM0420-1R0M	1.0	20	100	4.5	7.0	27
HCM0420-1R5M	1.5	20	100	4.0	6.0	46
HCM0420-2R2M	2.2	20	100	3.0	5.0	58
HCM0420-3R3M	3.3	20	100	2.5	4.0	87
HCM0420-4R7M	4.7	20	100	2.2	3.0	105
HCM0420-6R8M	6.8	20	100	2.0	2.5	135
HCM0420-8R2M	8.2	20	100	2.0	2.5	216
HCM0420-100M	10	20	100	1.6	2.0	258

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

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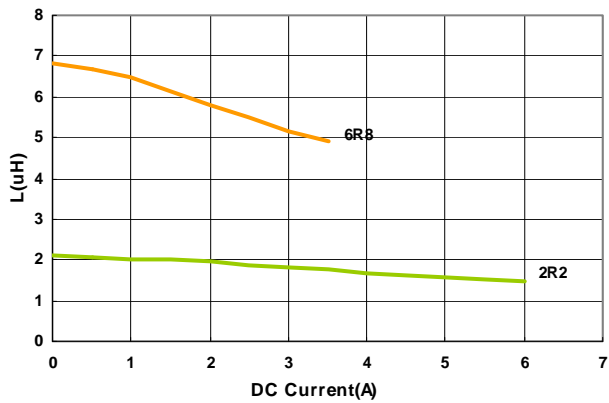
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0512-2R2M	2.2	20	100	3.5	4	76
HCM0512-6R8M	6.8	20	100	2.0	2.3	250

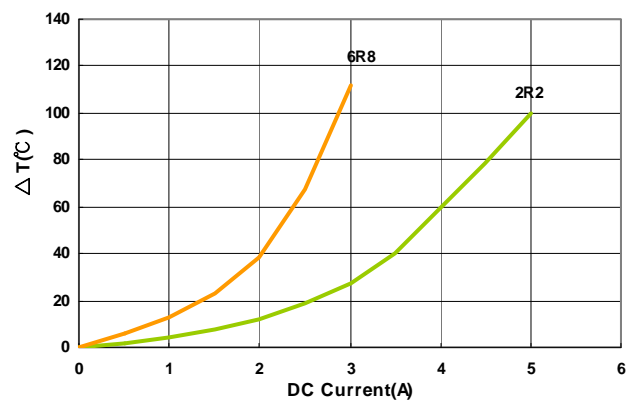
- I_{rms} current (A) that will cause an approximate ΔT of 40°C
- I_{sat} current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance vs DC Current



Temperature Change v.s DC Current

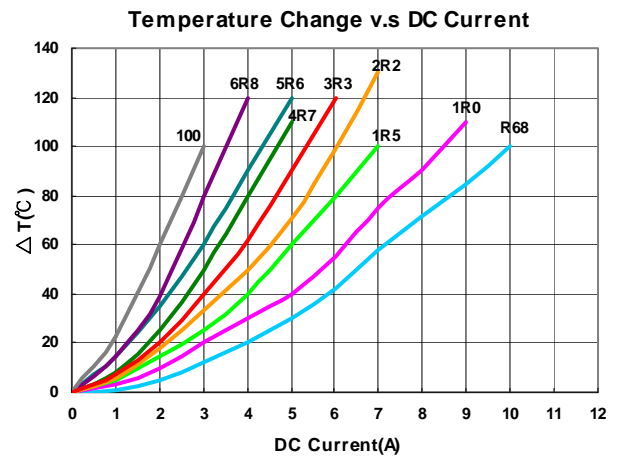
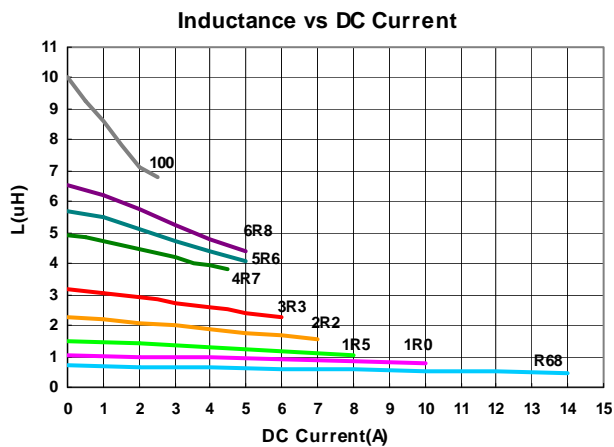


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0515-R68M	0.68	20	100	6.0	10	23
HCM0515-1R0M	1.0	20	100	5.0	8.0	33
HCM0515-1R5M	1.5	20	100	4.0	6.0	50
HCM0515-2R2M	2.2	20	100	3.3	6.0	68
HCM0515-3R3M	3.3	20	100	3.0	5.0	84
HCM0515-4R7M	4.7	20	100	2.5	4.0	135
HCM0515-5R6M	5.6	20	100	2.2	3.5	175
HCM0515-6R8M	6.8	20	100	2.0	3.0	192
HCM0515-100M	10	20	100	1.5	2.0	195

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

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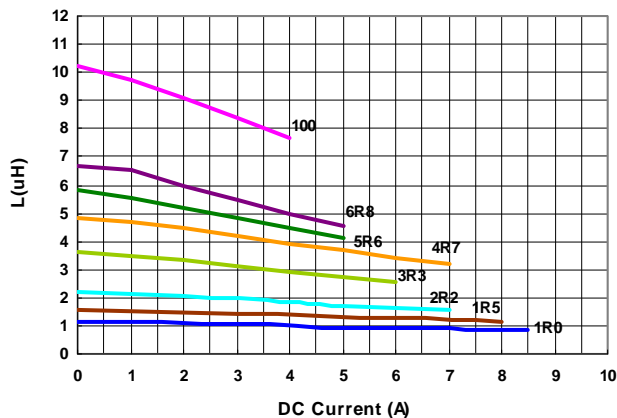
Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (mΩ)Max
HCM0520-1R0M	1.0	20	100	6.0	7.0	30
HCM0520-1R5M	1.5	20	100	5.5	6.5	35
HCM0520-2R2M	2.2	20	100	4.0	6.0	45
HCM0520-3R3M	3.3	20	100	3.5	5.5	60
HCM0520-4R7M	4.7	20	100	3.0	5.0	90
HCM0520-5R6M	5.6	20	100	2.8	4.5	120
HCM0520-6R8M	6.8	20	100	2.8	4.5	125
HCM0520-100M	10	20	100	2.3	4.0	180

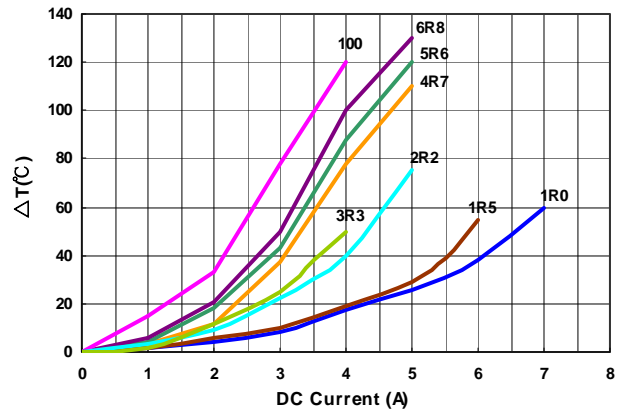
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= ±20%
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C . (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current

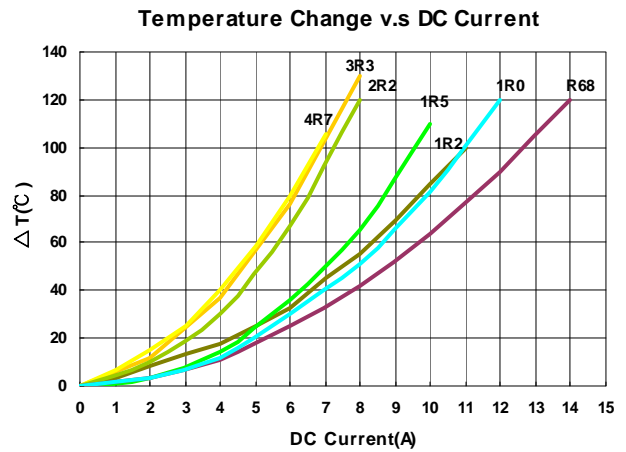
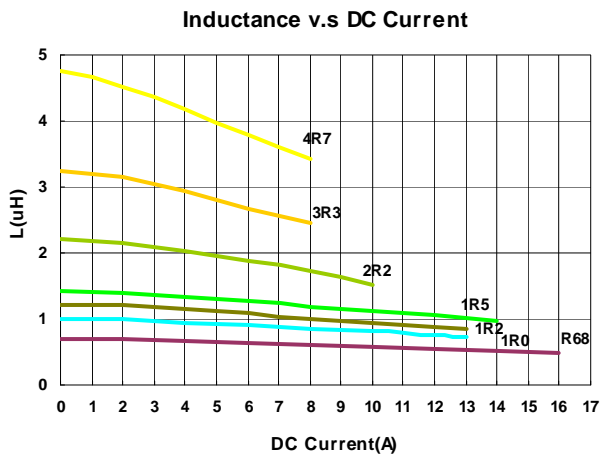


Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (mΩ)Max
HCM0530-R68M	0.68	20	100	8.0	14	12
HCM0530-1R0M	1.0	20	100	7.0	11	15
HCM0530-1R2M	1.2	20	100	6.5	11	15
HCM0530-1R5M	1.5	20	100	6.0	10	25
HCM0530-2R2M	2.2	20	100	5.0	8	35
HCM0530-3R3M	3.3	20	100	4.5	7	46
HCM0530-4R7M	4.7	20	100	4.0	6	60

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= ±20%
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer



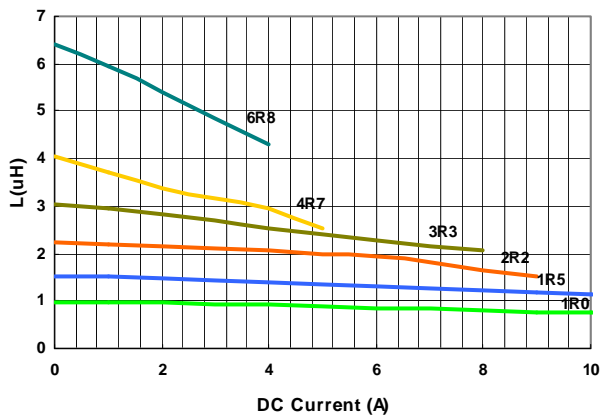
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0618-1R0M	1.0	20	100	7.0	10.0	17
HCM0618-1R5M	1.5	20	100	5.0	10.5	28
HCM0618-2R2M	2.2	20	100	5.0	8.0	35
HCM0618-3R3M	3.3	20	100	3.5	8.0	60
HCM0618-4R7M	4.7	20	100	3.5	5.0	72
HCM0618-6R8M	6.8	20	100	2.8	3.5	110

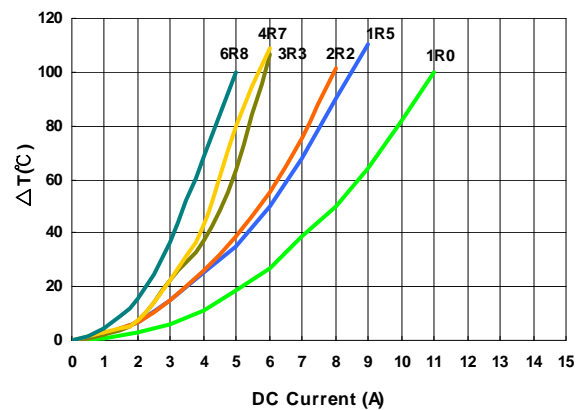
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- Rdc : CHEN HWA 502
- Operating temperature range from -55°C to 125°C . (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current



Molding Power Choke – HCM Series

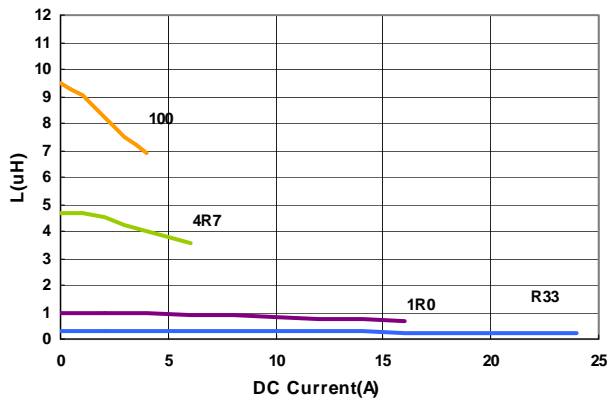
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM0618-R33M	0.33	20	100	12	22	6.8
HCM0618-1R0M	1.0	20	100	7.0	14	17
HCM0618-4R7M	4.7	20	100	3.5	5	70
HCM0618-100M	10	20	100	2.3	2.5	155

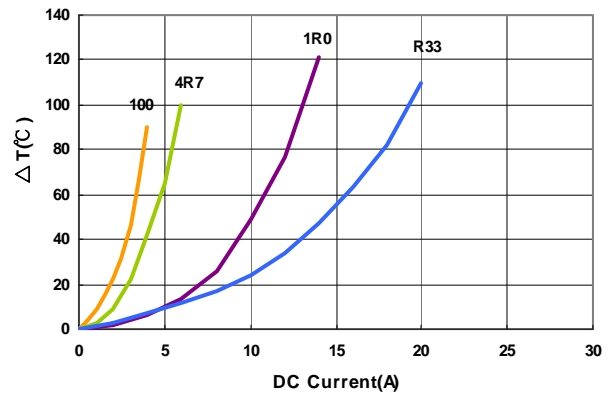
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C . (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance vs DC Current



Temperature Change v.s DC Current

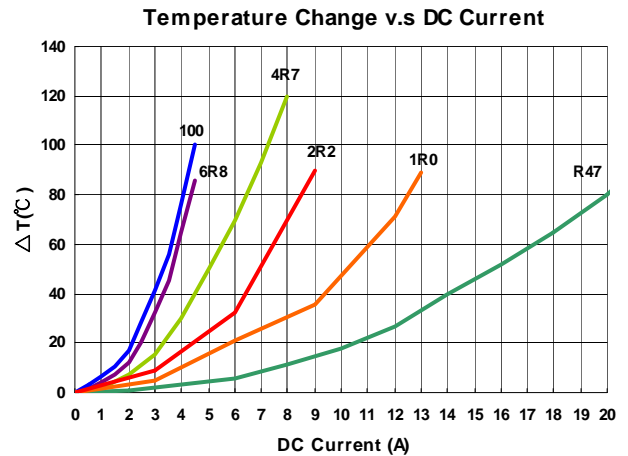
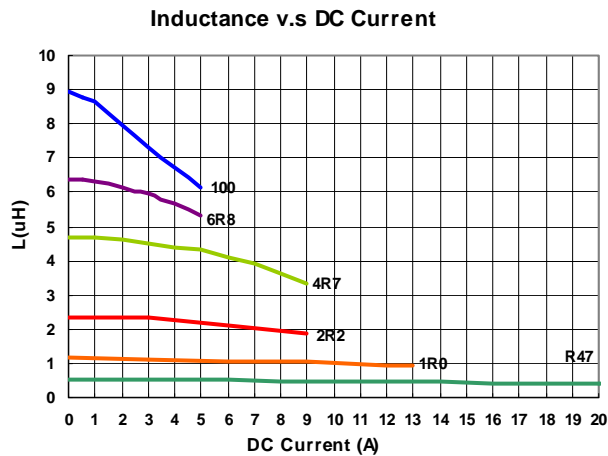


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (MHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (m Ω)Max
HCM0624-R47M	0.47	20	100	13.5	21	6.5
HCM0624-1R0M	1.0	20	100	9.0	16	13.5
HCM0624-2R2M	2.2	20	100	6.0	12	28
HCM0624-4R7M	4.7	20	100	4.5	8	50
HCM0624-6R8M	6.8	20	100	3.5	4	66
HCM0624-100M	10	20	100	3.1	4	101

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer



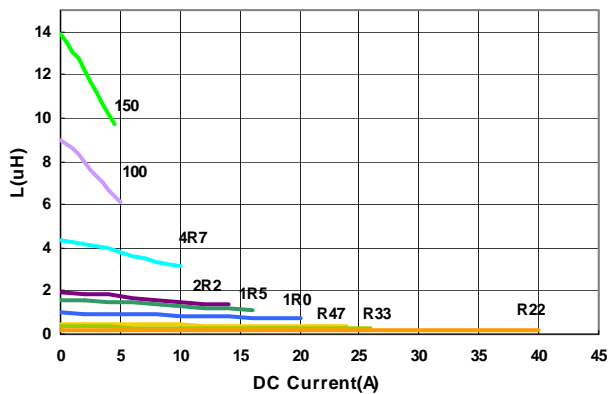
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (MHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (m Ω)Max
HCM0624-R22M	0.22	20	100	21	34	3.2
HCM0624-R33M	0.33	20	100	18	24.5	4.1
HCM0624-R47M	0.47	20	100	15	22	5.1
HCM0624-1R0M	1.0	20	100	9	16	13.5
HCM0624-1R5M	1.5	20	100	9	15	20
HCM0624-2R2M	2.2	20	100	7	14	28
HCM0624-4R7M	4.7	20	100	5	10	50
HCM0624-100M	10	20	100	3.1	4.0	101
HCM0624-150M	15	20	100	2.5	3.3	160

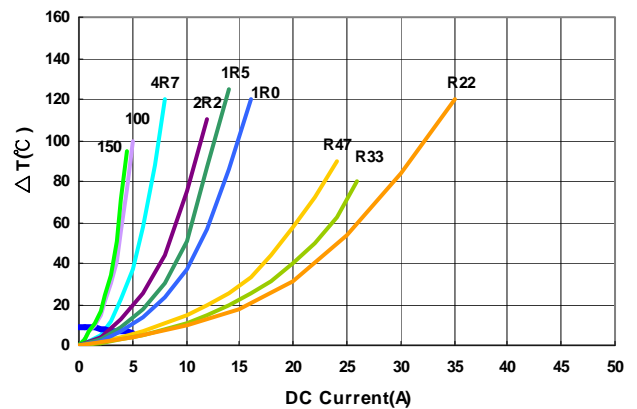
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance vs DC Current



Temperature Change v.s DC Current



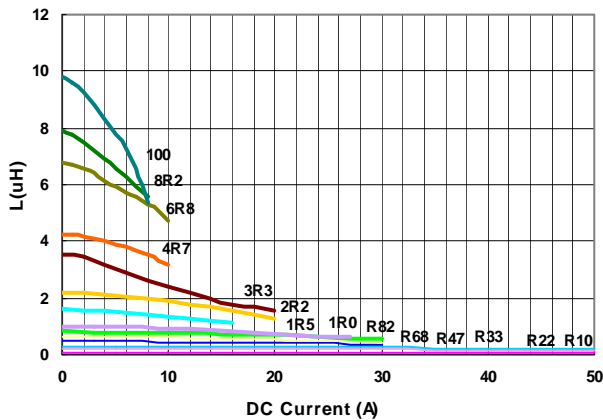
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC (m Ω)Max
HCM0630-R10M	0.10	20	100	37	45	1.5
HCM0630-R22M	0.22	20	100	23	40	2.8
HCM0630-R33M	0.33	20	100	20	33	4.2
HCM0630-R47M	0.47	20	100	16.5	27	5.5
HCM0630-R68M	0.68	20	100	15	24	6.3
HCM0630-R82M	0.82	20	100	13	23	8.0
HCM0630-1R0M	1.0	20	100	12	22	10
HCM0630-1R5M	1.5	20	100	9.5	18	15
HCM0630-2R2M	2.2	20	100	8.5	14	20
HCM0630-3R3M	3.3	20	100	6.0	12	35
HCM0630-4R7M	4.7	20	100	5.5	9	40
HCM0630-6R8M	6.8	20	100	4.5	8	60
HCM0630-8R2M	8.2	20	100	4.5	6	60
HCM0630-100M	10	20	100	4.0	5.5	68

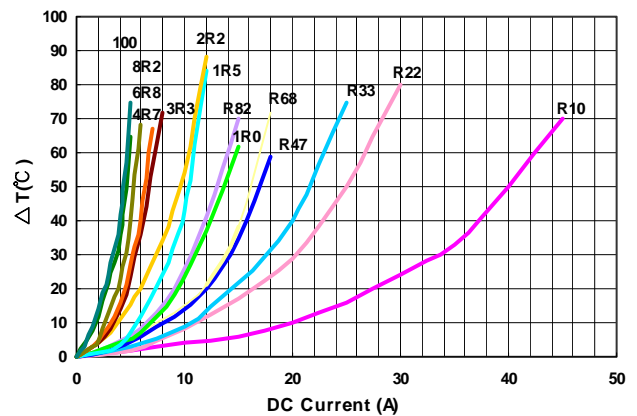
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- Rdc : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current

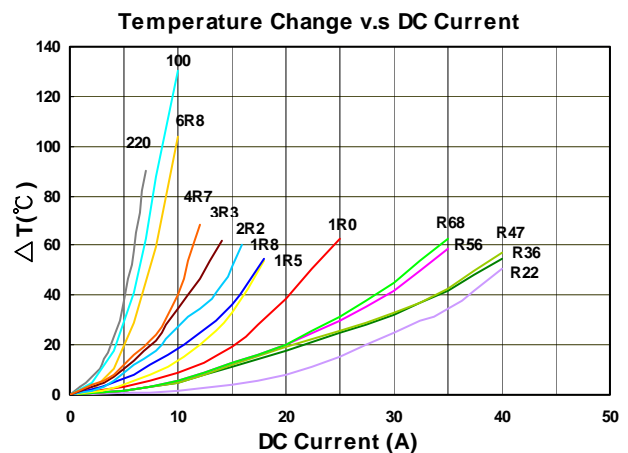
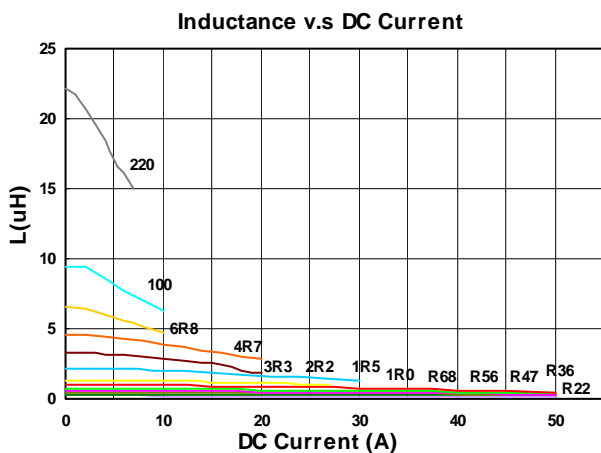


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM1040-R22M	0.22	20	100	35	45	0.6
HCM1040-R36M	0.36	20	100	34	42	1.2
HCM1040-R47M	0.47	20	100	33	38	1.2
HCM1040-R56M	0.56	20	100	27	32	1.55
HCM1040-R68M	0.68	20	100	27	30	1.55
HCM1040-1R0M	1.0	20	100	20	26	3.1
HCM1040-1R5M	1.5	20	100	16	22	4.2
HCM1040-1R8M	1.8	20	100	15.3	16	5
HCM1040-2R2M	2.2	20	100	14	16	7
HCM1040-3R3M	3.3	20	100	11	12	13.2
HCM1040-4R7M	4.7	20	100	10	13	16.5
HCM1040-6R8M	6.8	20	100	6	10	25
HCM1040-8R2M	8.2	20	100	6	9	30
HCM1040-100M	10	20	100	6.5	7	30
HCM1040-150M	15	20	100	5	6	53
HCM1040-220M	22	20	100	4.5	4.5	64

- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer



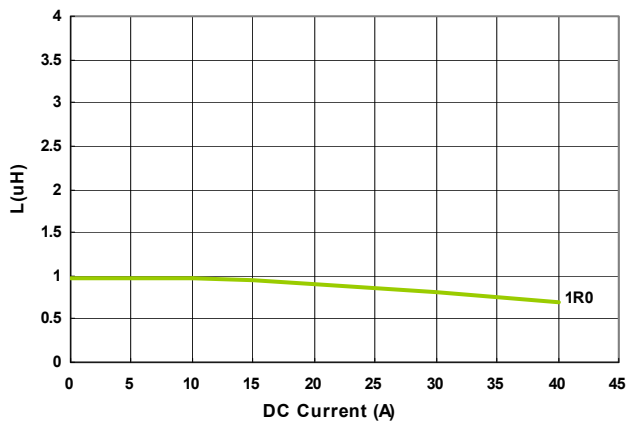
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM1235-1R0M	1.0	20	100	27	28	2.5

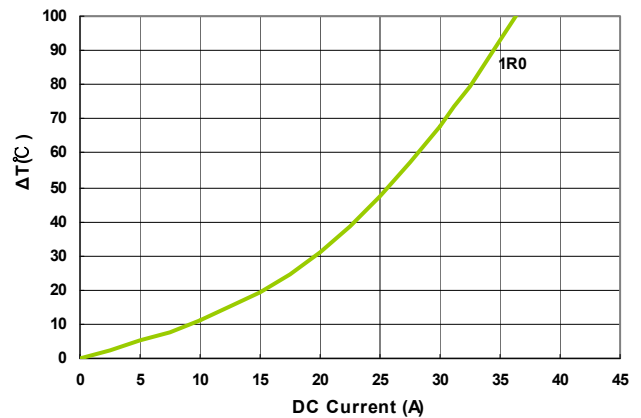
- I_{rms} DC current (A) that will cause an approximate ΔT of 40°C
- I_{sat} DC current (A) that will cause L to drop approximately 20%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C . (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance v.s DC Current



Temperature Change v.s DC Current

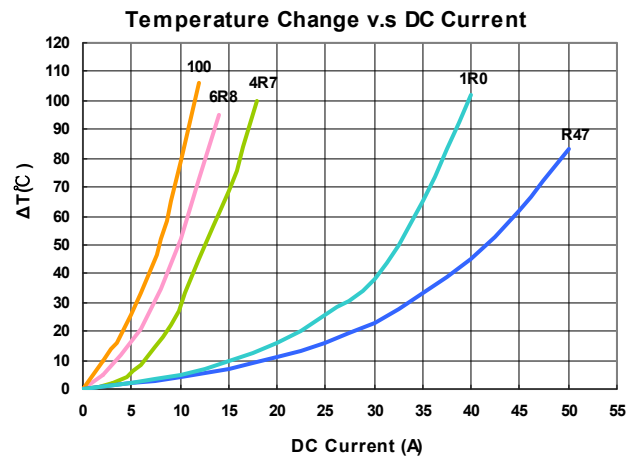
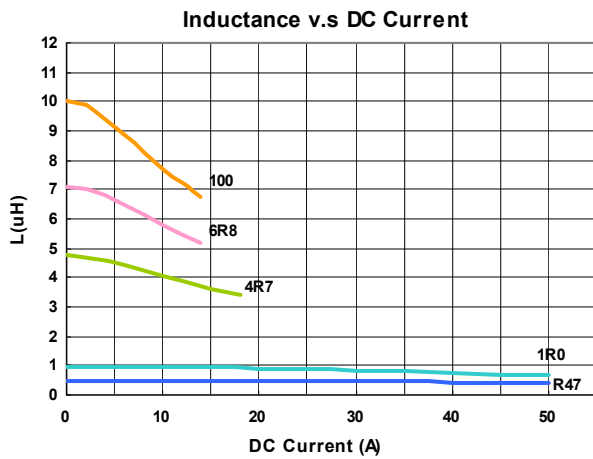


Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM1250-R47M	0.47	20	100	37	46	1.2
HCM1250-1R0M	1.0	20	100	29	37	2.5
HCM1250-4R7M	4.7	20	100	11	16	11.5
HCM1250-6R8M	6.8	20	100	9	14	22
HCM1250-100M	10	20	100	7	13	35

- I_{rms} current (A) that will cause an approximate ΔT of 40°C
- I_{sat} current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- Rdc : CHEN HWA 502
- Operating temperature range from -55°C to 125°C. (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer



Molding Power Choke – HCM Series

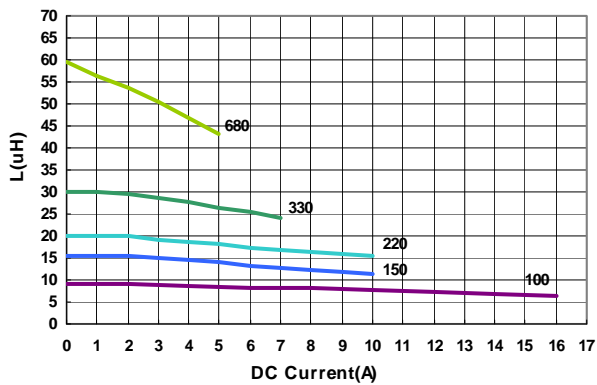
Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (KHz)	I _{rms} (A)Typ.	I _{sat} (A)Typ.	RDC ($\text{m}\Omega$)Max
HCM1270-100M	10	20	100	10	12.5	20.7
HCM1270-150M	15	20	100	6.0	9.0	29.0
HCM1270-220M	22	20	100	5.0	7.5	39.5
HCM1270-330M	33	20	100	4.0	6.0	75
<u>HCM1270-680M</u>	68	20	100	3.0	4.5	140

- I_{rms} current (A) that will cause an approximate ΔT of 40°C
- I_{sat} current (A) that will cause L to drop approximately 30%
- Tolerance : M= $\pm 20\%$
- L : WK 3260B, 100KHz 0.5V
- R_{dc} : CHEN HWA 502
- Operating temperature range from -55°C to 125°C . (Including self - temperature rise)

Test Instruments : WK3260B Impedance / Material Analyzer

Inductance vs DC Current



Temperature Change v.s DC Current

