

SMD ULTRA POWER INDUCTORS

Completely shielded with flat type of enameled

Series SP - B



FEATURES

- ◆ Shielded construction
- ◆ Low DC resistance.
- ◆ Handles high transient current spikes without saturation
- ◆ High frequency range up to 5.0 MHz
- ◆ Ultra low buzz noise, due to composite construction
- ◆ 100 % lead (Pb)-free and RoHS compliant

APPLICATION

- ◆ DC/DC converter for CPU in Notebook PC.
- ◆ Battery powered devices.

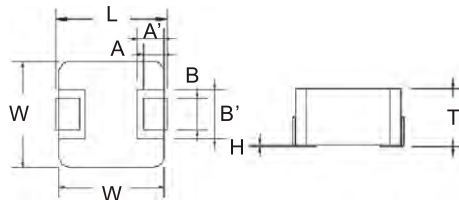
PRODUCT IDENTIFICATION

SP 07 B 03 J M 10U
a b c d e f g

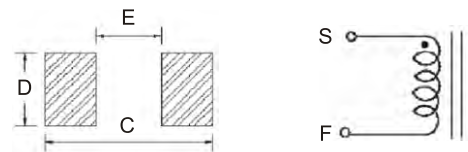
- a : Type of products - Supper Power Inductors
- b : Dimension(mm) - 03 : 3.3X3.0, 04 : 4.5X4.0, 05 : 5.1X4.7, 07 : 7.3X6.5, 10 : 11.5X10.0
- c : Design code - Material Code
- d : Thickness (mm) - 12 = 1.2 max, 20 = 2.0 max, 18 = 1.8 max, 03 = 3.0 max, 04 = 4.0 max
- e : Packing - PCS/REEL - 1 = 1000, Q = 700, J = 1,500, 2 = 2,000
- f : Tolerance - M : ±20%
- g : Inductance - 470N = 0.47uH, 10U = 10.0 uH

SHAPES & DIMENSIONS

Schematic Diagram

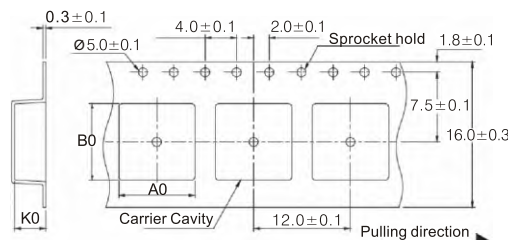


Recommend Pad Layout



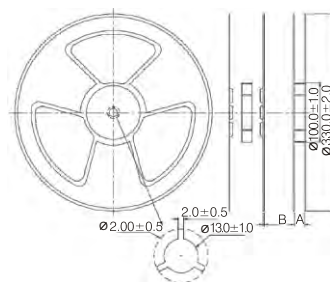
Part No	Unit : mm										
	A	A'	B	B'	L	W	H	T	C	D	E
SP04B20	0.8 ± 0.3	1.0 ± 0.1	0.8 ± 0.3	2.2 ± 0.2	4.5 max.	4.0 ± 0.2	0.0 ~ 0.20	2.0 max.	5.2	2.5	2.2
SP07B03	1.6 ± 0.3	2.0 ± 0.1	1.2 ± 0.3	3.5 ± 0.2	7.3 max.	6.5 ± 0.2	0.0 ~ 0.20	3.0 max.	7.4	3.5	3.7
SP10B04	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	4.6 ± 0.2	11.5 max.	10.0 ± 0.3	0.0 ~ 0.20	4.0 max.	11.5	4.0	4.5

TAPE PACKAGING DIMENSION



Part No	Unit : mm		
	A0	B0	K0
SP04B20	4.2 ± 0.1	4.5 ± 0.1	2.5 ± 0.15
SP07B03	7.2 ± 0.1	7.5 ± 0.1	3.6 ± 0.15
SP10B04	10.7 ± 0.1	11.0 ± 0.1	4.5 ± 0.15

REEL DIMENSIONS



Part No	Unit : mm	
	A	B
SP04B20	12.5 ± 0.5	2.0 ± 0.2
SP07B03	16.0 ± 0.5	2.0 ± 0.2
SP10B04	24.5 ± 0.5	2.0 ± 0.2

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ELECTRICAL SPECIFICATIONS

SP04B20

Part Number	L0 Inductance μ H	DCR m Ω @ 25°C typ.	DCR m Ω @ 25°C max.	Irms typ. (3)	Isat max (4)
SP04B202M560N	0.56	12.40	15.00	7	8
SP04B202M680N	0.68	13.50	16.00	6.3	7
SP04B202M820N	0.82	16.00	20.00	5.5	6.5
SP04B202M1U	1.00	18.00	22.00	5	6
SP04B202M1U2	1.20	19.00	23.00	4	5
SP04B202M1U5	1.50	25.40	28.00	5	4
SP04B202M2U2	2.20	41.40	50.00	3.4	3.5
SP04B202M4U3	4.30	85.00	100.00	2.6	3.8

SP07B03

Part Number	L0 Inductance μ H	DCR m Ω @ 25°C typ.	DCR m Ω @ 25°C max.	Irms typ. (3)	Isat max (4)
SP07B031M100N	0.10	1.50	1.70	32.5	60
SP07B031M150N	0.15	1.90	2.50	26	52
SP07B031M200N	0.20	2.40	3.00	24	41
SP07B031M220N	0.22	2.50	2.80	23	40
SP07B031M330N	0.33	3.50	3.90	20	30
SP07B031M470N	0.47	4.00	4.20	17.5	26
SP07B031M680N	0.68	5.00	5.50	15.5	25
SP07B031M820N	0.82	6.70	8.00	13	24
SP07B031M1U	1.00	9.00	10.00	11	22
SP07B031M1U2	1.20	10.00	12.00	10	20
SP07B031M1U5	1.50	14.00	15.00	9	18
SP07B031M2U2	2.20	18.00	20.00	8	14
SP07B031M2U5	2.50	20.00	22.00	7	14
SP07B031M3U3	3.30	28.00	30.00	6	13.5
SP07B031M4U7	4.70	37.00	40.00	5.5	10
SP07B031M6U8	6.80	54.00	60.00	4.5	8
SP07B031M8U2	8.20	64.00	68.00	4	7.5
SP07B031M10U	10.00	102.00	105.00	3	7

1. All test data is referenced to 25 °C ambient
2. Operating Temperature Range - 55 °C to + 125 °C
3. DC current (A) that will cause an approximate Δ T of 40 °C
4. DC current (A) that will cause Lo to drop approximately 20 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions
Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

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Series **SP-B** *Completely shielded with flat type of enameled*
ELECTRICAL SPECIFICATIONS

SP10B04

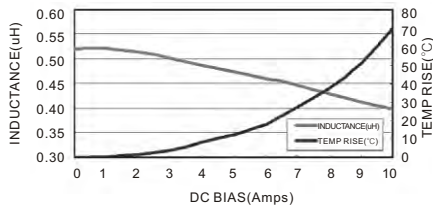
Part Number	L0 Inductance μ H	DCR m Ω @ 25 °C typ.	DCR m Ω @ 25°C max.	Irms typ. (3)	Isat max (4)
SP10B04QM150N	0.15	1.50	0.65	40	75
SP10B04QM190N	0.19	0.70	0.80	38	60
SP10B04QM220N	0.22	0.90	1.00	35	60
SP10B04QM240N	0.24	0.85	0.95	33	44
SP10B04QM360N	0.36	1.05	1.15	32	30
SP10B04QM390N	0.39	1.10	1.30	30	60
SP10B04QM470N	0.47	1.53	1.68	26	40
SP10B04QM560N	0.56	1.60	1.80	32	40
SP10B04QM680N	0.68	2.40	2.70	28	39
SP10B04QM780N	0.78	1.80	1.90	27	38
SP10B04QM880N	0.88	2.70	3.00	20	38
SP10B04QM1U	1.00	2.30	2.50	25	20
SP10B04QM1U8	1.80	4.50	5.00	17	16
SP10B04QM2U	2.00	5.20	5.80	16	14
SP10B04QM2U2	2.20	6.70	7.00	12	14
SP10B04QM4U7	4.70	12.90	14.20	9.5	7.6
SP10B04QM6U8	6.80	17.50	19.30	9	7.5
SP10B04QM10U	10.00	27.80	30.50	7.5	7.1
SP10B04QM15U	15.00	40.90	45.00	6.25	6
SP10B04QM22U	22.00	60.40	66.00	5	4.5
SP10B04QM47U	47.00	132.00	145.00	3.3	3
SP10B04QM100U	100.00	249.00	270.00	2.5	2.25

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 Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

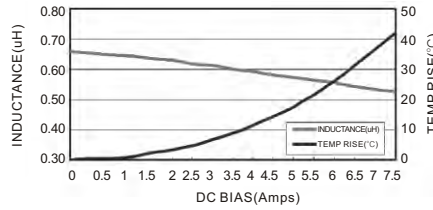
SMD ULTRA POWER INDUCTORS

Series SP-B Completely shielded with flat type of enameled
PERFORMANCE CHARACTERISTICS

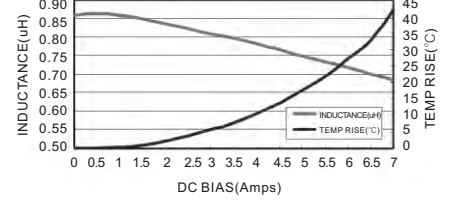
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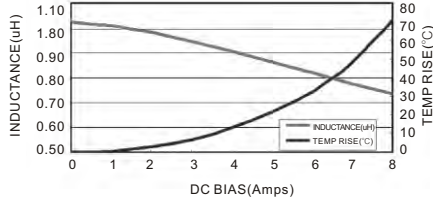
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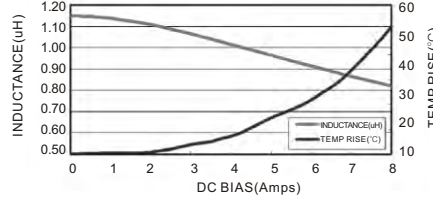
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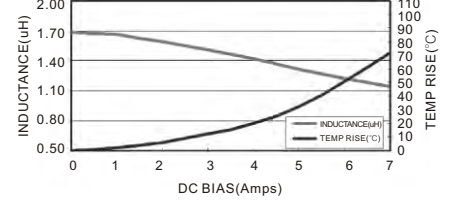
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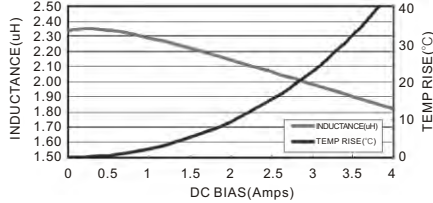
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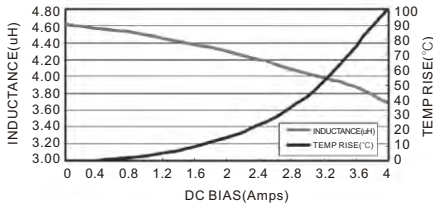
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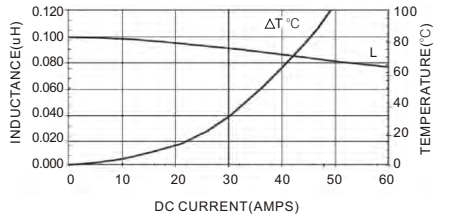
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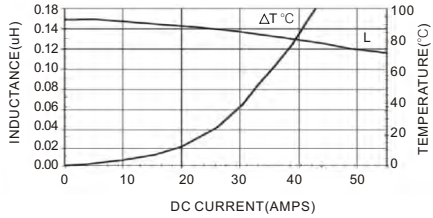
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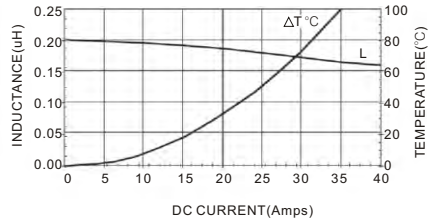
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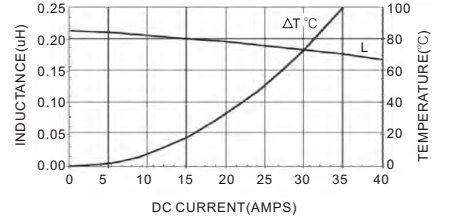
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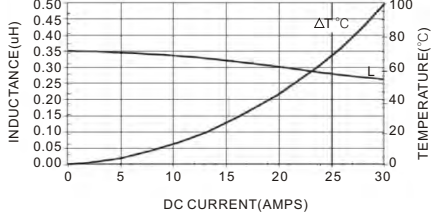
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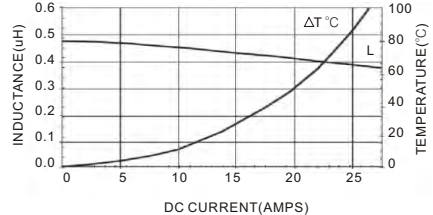
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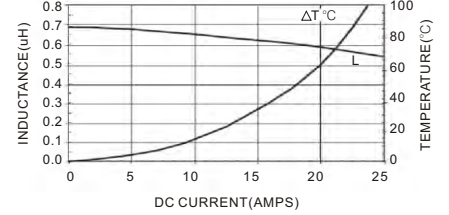
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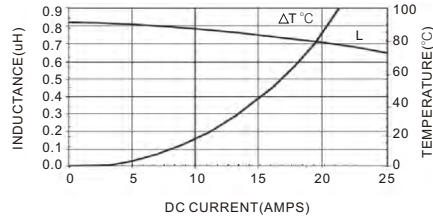
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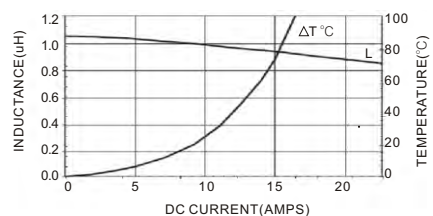
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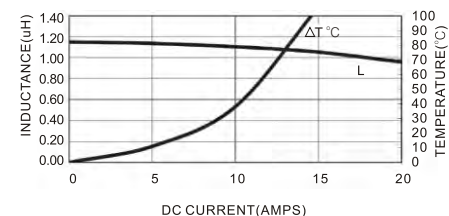
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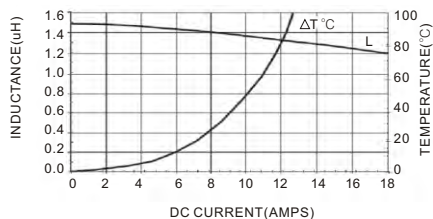
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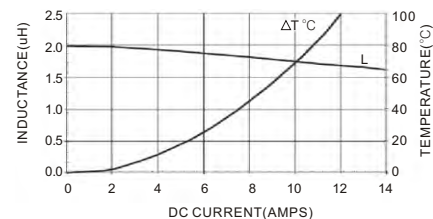
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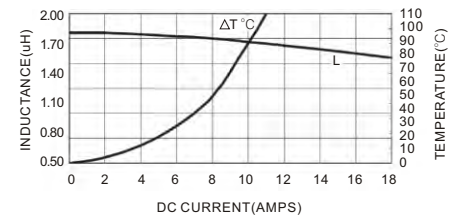
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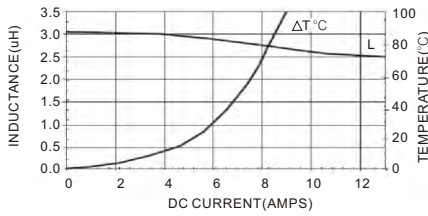
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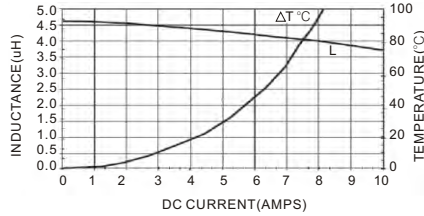
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PERFORMANCE CHARACTERISTICS

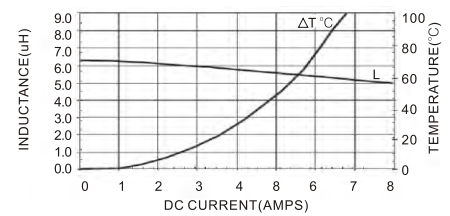
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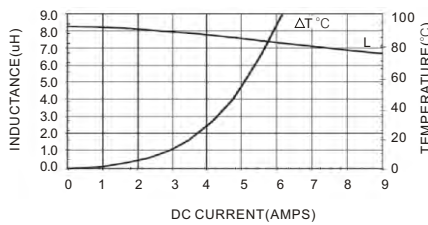
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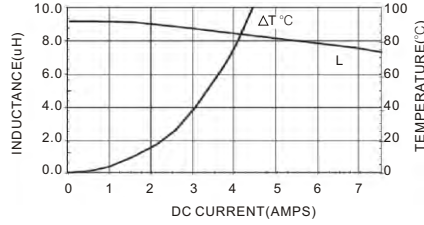
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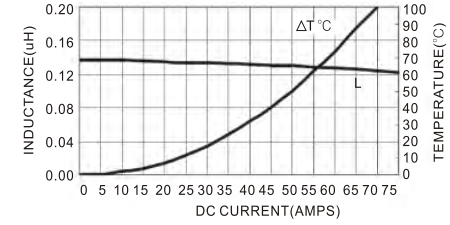
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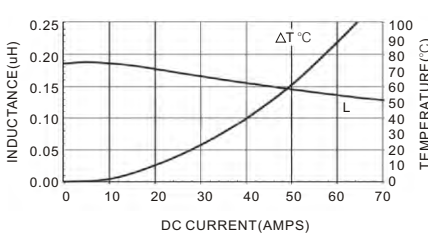
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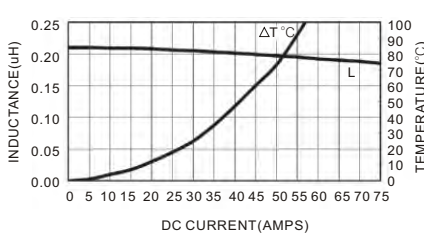
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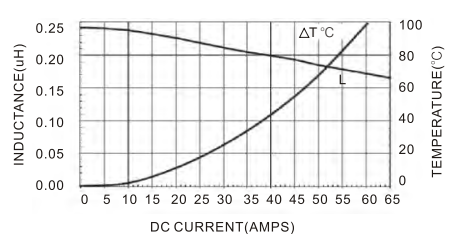
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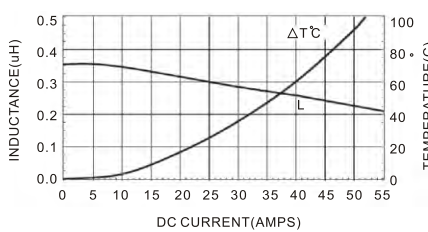
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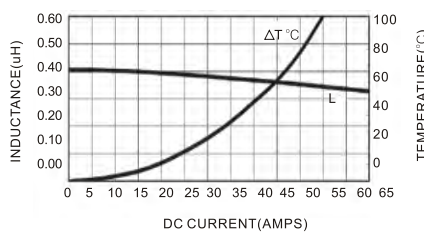
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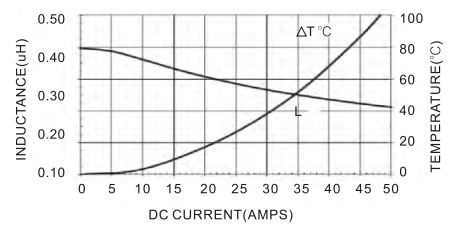
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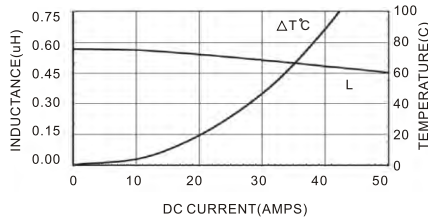
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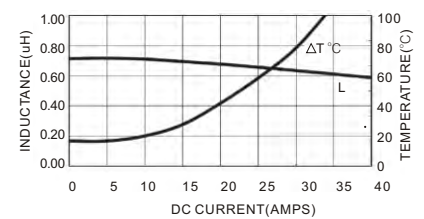
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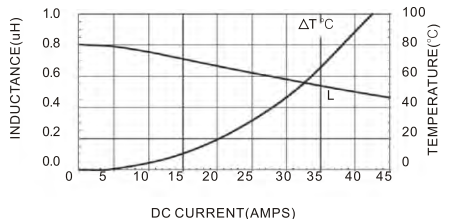
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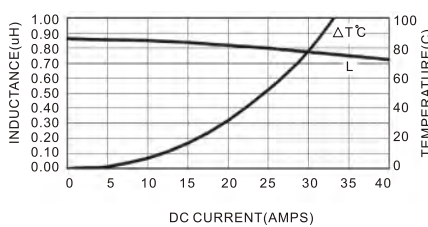
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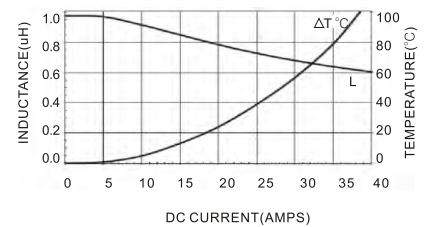
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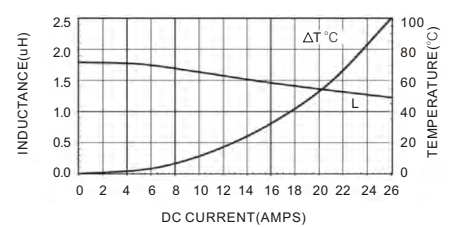
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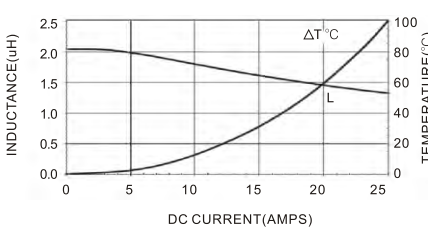
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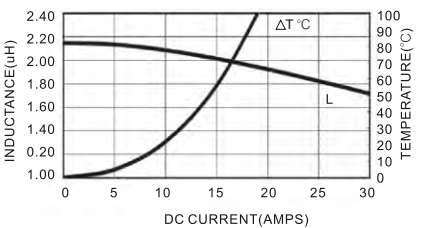
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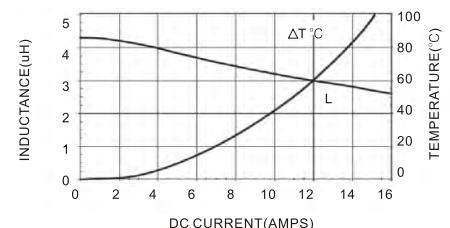
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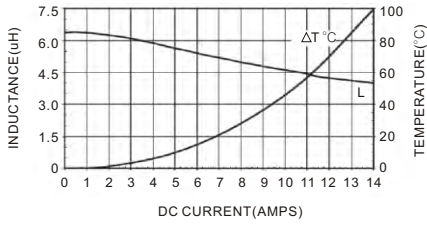
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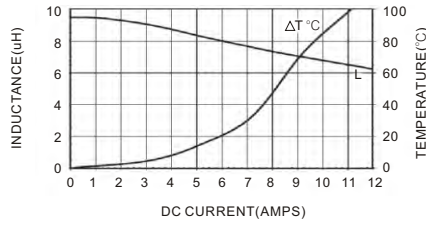
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PERFORMANCE CHARACTERISTICS

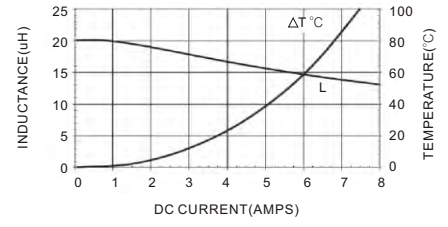
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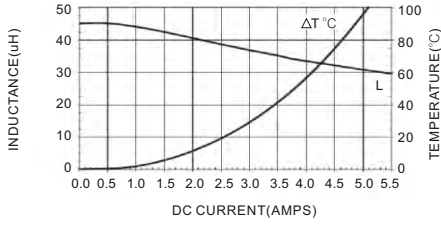
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