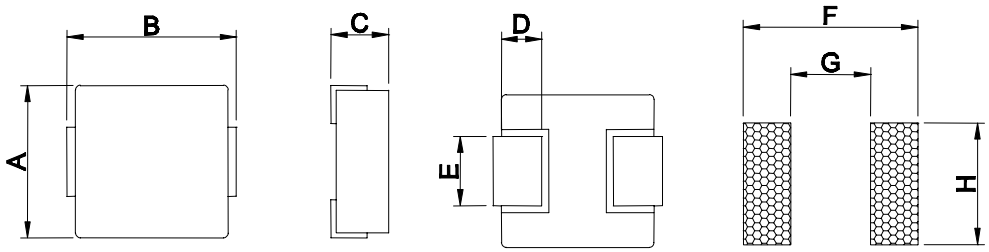
Cal-Chip Electronics Inc.



■Features

- —Large current adaptable
- —Footprint compatible with most standard
- —Lower temperature rise at large current
- —Low profile, low DCR
- —Available on tape and reel for auto surface mounting

■Applications

- —Laptop / Desktop / Notebook Computers
- —Terminals / Portable Servers / Workstation
- —DC/DC Converter in Distributed Power Systems or VRM Applications
- —Thin Type On-board Power Supply Module for Exchanger

■Dimensions

Unit: mm

Type	A	B	C max.	D	E	F	G	H
CDB0420	4.1±0.3	4.5±0.3	2.0	0.8±0.3	1.5±0.3	1.5	2.5	2.2
CDB0520	4.7±0.5	5.5±0.3	2.0	1.2±0.5	1.5±0.5	2.0	3.0	2.5
CDB0530	4.7±0.5	5.5±0.3	3.0	1.2±0.5	1.5±0.5	2.0	3.0	2.5
CDB0620	6.8 max	7.5 max	2.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
CDB0625	6.8 max	7.5 max	2.5	1.6±0.5	2.9±0.5	2.5	3.7	3.5
CDB0630	6.8 max	7.5 max	3.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
CDB0650	6.8 max	7.5 max	5.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
CDB1040	10.3 max	11.5 max	4.0	2.2±0.3	2.9±0.5	3.5	6.0	4.0
CDB1340	12.9 max	13.8 max	3.7	2.3±0.5	3.6±0.5	2.9	7.9	5.0
CDB1350	12.9 max	13.8 max	5.0	2.3±0.5	3.6±0.5	2.9	7.9	5.0
CDB1365	12.9 max	13.8 max	6.5	2.3±0.5	3.6±0.5	2.9	7.9	5.0

■Characteristics

- —Saturation Rated Current would cause inductance to drop approximately 25%(0420 drop approximately 30%)).
- —Temperature Rise Current would cause an approximately △T of 40°C
- —All test data is referred to 25°C ambient

■Inductance and rated current ranges

- —CDB0420 0.10μH～3.3μH @Saturation Current: 22～4A
- —CDB0520 0.10μH～4.7μH @Saturation Current: 45～5A
- —CDB0530 0.10μH～4.7μH @Saturation Current: 27～8.2A
- —CDB0620 0.10μH～4.7μH @Saturation Current: 40～8A
- —CDB0625 0.10μH～10μH @Saturation Current: 50～7A
- —CDB0630 0.10μH～10μH @Saturation Current: 60～7A
- —CDB0650 0.56μH～10μH @Saturation Current: 12～4.5A
- —CDB1040 0.19μH～10μH @Saturation Current: 90～12A
- —CDB1340 0.10μH～10μH @Saturation Current: 84～14A
- —CDB1350 0.10μH～10μH @Saturation Current: 118～16A
- —CDB1365 0.10μH～10μH @Saturation Current: 120～15.5A

- —Test equipment:
  L: HP4284A LCR meter
  DCR: Milli-ohm meter
- —Electrical specifications at 25°C
- —Operating temperature rang: -20°C～+125°C

■Product Identification

CDB	0630	M	100	T
Product Type	Dimensions (AxC)	Inductor Tolerance	Inductance	Packaging Style
	0420: 4.1×2.0 0520: 4.7×2.0 0530: 4.7×3.0 0620: 6.8×2.0 0625: 6.8×2.5 0630: 6.8×3.0 0650: 6.8×5.0 1040: 10.3×4.0 1340: 12.9×3.7 1350: 12.9×5.0 1365: 12.9×6.5	M: ±20%	R47: 0.47µH 1R0: 1.0µH 100: 10µH	T:Tape-n-reel

■Electrical Characteristics

CDB0420 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	4.0	22.0	12.0
R22	0.22	M	100KHz, 0.25V	6.6	12.5	9.0
R47	0.47	M	100KHz, 0.25V	14	9.5	7.0
R56	0.56	M	100KHz, 0.25V	16	8.5	6.5
1R0	1.0	M	100KHz, 0.25V	27	7.0	4.5
1R5	1.5	M	100KHz, 0.25V	46	6.0	4.0
2R2	2.2	M	100KHz, 0.25V	58	5.0	3.0
3R3	3.3	M	100KHz, 0.25V	87	4.0	2.5

CDB0520 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	3.9	45.0	17.0
R22	0.22	M	100KHz, 0.25V	5.2	22.0	15.0
R33	0.33	M	100KHz, 0.25V	8.2	25.0	12.0
R47	0.47	M	100KHz, 0.25V	9.4	21.0	11.5
R68	0.68	M	100KHz, 0.25V	12.4	15.0	10.0
1R0	1.0	M	100KHz, 0.25V	20.0	16.0	7.0
2R2	2.2	M	100KHz, 0.25V	50.1	12.5	4.2
3R3	3.3	M	100KHz, 0.25V	85.5	8.5	3.3
4R7	4.7	M	100KHz, 0.25V	116.6	5.0	2.8

CDB0530 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	3.16	27.0	23.0
R22	0.22	M	100KHz, 0.25V	4.52	21.0	15.5
R33	0.33	M	100KHz, 0.25V	5.56	19.0	13.7
R47	0.47	M	100KHz, 0.25V	7.04	16.0	12.2
R68	0.68	M	100KHz, 0.25V	8.96	13.5	10.2
R82	0.82	M	100KHz, 0.25V	11.9	13.0	9.3
1R0	1.0	M	100KHz, 0.25V	13.7	12.0	9.2
1R5	1.5	M	100KHz, 0.25V	20.7	11.0	7.2
2R2	2.2	M	100KHz, 0.25V	29.2	10.0	5.8
3R3	3.3	M	100KHz, 0.25V	54.7	8.5	5.0
4R7	4.7	M	100KHz, 0.25V	77.5	8.2	3.5

■Electrical Characteristics

CDB0620 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	3.5	40.00	18.00
R15	0.15	M	100KHz, 0.25V	5.2	38.00	15.00
R22	0.22	M	100KHz, 0.25V	5.7	26.00	14.00
R33	0.33	M	100KHz, 0.25V	7.0	18.00	12.00
R47	0.47	M	100KHz, 0.25V	9.3	18.00	11.00
R68	0.68	M	100KHz, 0.25V	13.9	17.00	9.00
R82	0.82	M	100KHz, 0.25V	15.9	17.00	8.00
1R0	1.0	M	100KHz, 0.25V	18.3	14.00	7.00
1R5	1.5	M	100KHz, 0.25V	34.0	11.50	4.00
2R2	2.2	M	100KHz, 0.25V	46.0	13.00	3.75
3R3	3.3	M	100KHz, 0.25V	60.1	10.00	3.25
4R7	4.7	M	100KHz, 0.25V	78.0	8.00	3.00

CDB0625 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	1.7	50.0	30.0
R22	0.22	M	100KHz, 0.25V	3.2	34.0	21.0
R33	0.33	M	100KHz, 0.25V	4.1	22.0	18.0
R47	0.47	M	100KHz, 0.25V	6.5	21.0	13.5
R68	0.68	M	100KHz, 0.25V	9.4	18.0	11.0
R82	0.82	M	100KHz, 0.25V	11.8	17.0	10.0
1R0	1.0	M	100KHz, 0.25V	14.2	16.0	9.0
1R5	1.5	M	100KHz, 0.25V	21.2	15.0	7.5
2R2	2.2	M	100KHz, 0.25V	34.0	14.0	6.5
3R3	3.3	M	100KHz, 0.25V	51.6	13.0	5.0
4R7	4.7	M	100KHz, 0.25V	63.0	10.0	4.5
6R8	6.8	M	100KHz, 0.25V	95.0	9.0	3.5
8R2	8.2	M	100KHz, 0.25V	106.0	8.0	3.0
100	10	M	100KHz, 0.25V	129.0	7.0	2.5

CDB0630 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	1.7	60.0	32.5
R22	0.22	M	100KHz, 0.25V	2.8	40.0	23.0
R33	0.33	M	100KHz, 0.25V	3.9	30.0	20.0
R47	0.47	M	100KHz, 0.25V	4.2	26.0	17.5
R68	0.68	M	100KHz, 0.25V	5.5	25.0	15.5
R82	0.82	M	100KHz, 0.25V	8.0	24.0	13.0
1R0	1.0	M	100KHz, 0.25V	10.0	22.0	11.0
1R5	1.5	M	100KHz, 0.25V	15.0	18.0	9.0
2R2	2.2	M	100KHz, 0.25V	20.0	14.0	8.0
3R3	3.3	M	100KHz, 0.25V	30.0	13.5	6.0
4R7	4.7	M	100KHz, 0.25V	40.0	10.0	5.5
6R8	6.8	M	100KHz, 0.25V	60.0	8.0	4.5
8R2	8.2	M	100KHz, 0.25V	68.0	7.5	4.0
100	10	M	100KHz, 0.25V	105.0	7.0	3.0

■Electrical Characteristics

CDB0650 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R56	0.56	M	100KHz, 0.25V	3.6	12.0	20.0
R68	0.68	M	100KHz, 0.25V	4.5	11.5	18.0
R82	0.82	M	100KHz, 0.25V	4.9	13.0	16.5
1R0	1.0	M	100KHz, 0.25V	6.5	15.0	13.0
1R5	1.5	M	100KHz, 0.25V	9.0	12.0	12.0
2R2	2.2	M	100KHz, 0.25V	13.6	10.0	10.0
3R3	3.3	M	100KHz, 0.25V	20.9	8.0	8.0
4R7	4.7	M	100KHz, 0.25V	30.3	7.0	6.5
5R6	5.6	M	100KHz, 0.25V	34.4	7.0	6.0
6R8	6.8	M	100KHz, 0.25V	44.6	5.5	5.5
8R2	8.2	M	100KHz, 0.25V	50.7	5.0	5.0
100	10	M	100KHz, 0.25V	71.3	4.5	4.5

SDB1040 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R19	0.19	M	100KHz, 0.25V	0.95	90.0	40.0
R36	0.36	M	100KHz, 0.25V	1.40	60.0	31.5
R47	0.47	M	100KHz, 0.25V	1.60	38.0	26.0
R56	0.56	M	100KHz, 0.25V	1.80	49.0	27.5
1R0	1.0	M	100KHz, 0.25V	4.10	36.0	17.5
1R5	1.5	M	100KHz, 0.25V	5.80	27.5	15.0
2R2	2.2	M	100KHz, 0.25V	9.00	25.6	12.0
3R3	3.3	M	100KHz, 0.25V	11.80	18.6	10.0
4R7	4.7	M	100KHz, 0.25V	16.50	17.0	9.5
5R6	5.6	M	100KHz, 0.25V	19.30	16.0	8.5
6R8	6.8	M	100KHz, 0.25V	23.30	13.5	8.0
100	10	M	100KHz, 0.25V	36.50	12.0	6.8

CDB1340 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	0.96	84.0	43.0
R15	0.15	M	100KHz, 0.25V	1.20	75.0	41.0
R22	0.22	M	100KHz, 0.25V	1.30	65.0	38.5
R33	0.33	M	100KHz, 0.25V	1.50	62.0	36.5
R47	0.47	M	100KHz, 0.25V	2.00	55.0	32.0
R60	0.60	M	100KHz, 0.25V	2.20	51.0	29.0
R68	0.68	M	100KHz, 0.25V	2.50	49.0	28.0
R82	0.82	M	100KHz, 0.25V	3.00	44.0	25.0
1R0	1.0	M	100KHz, 0.25V	3.50	40.0	24.0
1R5	1.5	M	100KHz, 0.25V	5.50	35.0	19.0
1R8	1.8	M	100KHz, 0.25V	7.00	30.0	16.5
2R2	2.2	M	100KHz, 0.25V	8.00	29.0	16.0
3R3	3.3	M	100KHz, 0.25V	12.00	27.0	12.0
4R7	4.7	M	100KHz, 0.25V	15.00	24.0	10.0
5R6	5.6	M	100KHz, 0.25V	19.00	19.0	9.5
6R8	6.8	M	100KHz, 0.25V	22.00	18.0	9.0
8R2	8.2	M	100KHz, 0.25V	28.00	16.0	8.5
100	10	M	100KHz, 0.25V	34.00	14.0	7.0

■Electrical Characteristics

CDB1350 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	6.0	118.0	55.0
R22	0.22	M	100KHz, 0.25V	0.8	110.0	51.0
R33	0.33	M	100KHz, 0.25V	1.1	80.0	42.0
R47	0.47	M	100KHz, 0.25V	1.3	65.0	38.0
R56	0.56	M	100KHz, 0.25V	1.5	55.0	36.0
R68	0.68	M	100KHz, 0.25V	1.7	54.0	34.0
R82	0.82	M	100KHz, 0.25V	2.3	53.0	31.0
1R0	1.0	M	100KHz, 0.25V	2.5	50.0	29.0
1R5	1.5	M	100KHz, 0.25V	4.1	48.0	23.0
1R8	1.8	M	100KHz, 0.25V	4.9	40.0	19.0
2R2	2.2	M	100KHz, 0.25V	5.5	32.0	20.0
3R3	3.3	M	100KHz, 0.25V	9.2	32.0	15.0
4R7	4.7	M	100KHz, 0.25V	15.0	27.0	12.0
5R6	5.6	M	100KHz, 0.25V	16.5	22.0	11.5
6R8	6.8	M	100KHz, 0.25V	18.5	21.0	11.0
7R8	7.8	M	100KHz, 0.25V	20.5	18.0	10.0
8R2	8.2	M	100KHz, 0.25V	22.5	18.0	9.5
100	10	M	100KHz, 0.25V	25.5	16.0	9.0

CDB1365 Type

Codes	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Max.	Temperature Rise Current (A) Max.
R10	0.10	M	100KHz, 0.25V	0.5	120.0	60.0
R15	0.15	M	100KHz, 0.25V	0.6	118.0	55.0
R22	0.22	M	100KHz, 0.25V	0.7	112.0	53.0
R30	0.30	M	100KHz, 0.25V	0.8	72.0	48.0
R33	0.33	M	100KHz, 0.25V	0.9	65.0	46.0
R40	0.40	M	100KHz, 0.25V	1.0	64.0	44.0
R47	0.47	M	100KHz, 0.25V	1.2	63.0	41.0
R56	0.56	M	100KHz, 0.25V	1.4	62.0	37.0
R68	0.68	M	100KHz, 0.25V	1.6	60.0	35.0
R82	0.82	M	100KHz, 0.25V	1.9	50.0	33.0
1R0	1.0	M	100KHz, 0.25V	2.0	49.0	32.0
1R2	1.2	M	100KHz, 0.25V	2.5	48.0	30.0
1R5	1.5	M	100KHz, 0.25V	3.0	45.0	27.0
1R8	1.8	M	100KHz, 0.25V	3.2	41.0	24.0
2R2	2.2	M	100KHz, 0.25V	4.2	40.0	22.0
3R3	3.3	M	100KHz, 0.25V	6.8	35.0	18.0
4R7	4.7	M	100KHz, 0.25V	8.7	32.0	13.5
5R6	5.6	M	100KHz, 0.25V	10.0	32.0	13.5
6R8	6.8	M	100KHz, 0.25V	14.0	16.5	11.5
8R2	8.2	M	100KHz, 0.25V	15.5	16.0	10.5
100	10	M	100KHz, 0.25V	17.2	15.5	10.0

■General Characteristics

<table>
<tr><th>Item</th><th>requirement</th><th>Test Method</th></tr>
<tr><td>Solderability</td><td>More than 90% of the terminal electrode should be covered with solder</td><td>230±5°C for 4±1 seconds</td></tr>
<tr><td>Solder Heat Resistance</td><td rowspan="5">Inductance within±20% of initial value
No disconnection or short circuit
The appearance shall not break</td><td>260±5°C for 10±1 seconds</td></tr>
<tr><td>Heat Resistance</td><td>Temperature: 125±5°C
Time: 500 hours
Tested after 2 hour at room temperature</td></tr>
<tr><td>Cold Resistance</td><td>Temperature: -40±5°C
Time: 500 hours
Tested after 2 hour at room temperature</td></tr>
<tr><td>Thermal Shock</td><td>One cycle:
<table>
<tr><th>Step</th><th>Temperature(°C)</th><th>Time (min.)</th></tr>
<tr><td>1</td><td>-40±5°C</td><td>30</td></tr>
<tr><td>2</td><td>Room temperature</td><td>3</td></tr>
<tr><td>3</td><td>125±5°C</td><td>30</td></tr>
<tr><td>4</td><td>Room temperature</td><td>3</td></tr>
</table></td></tr>
<tr><td>Humidity Resistance</td><td>Temperature: 40±2°C, 90~95% relative humidity
Time: 500 hours
Tested after 2 hour at room temperature</td></tr>
<tr><td>Vibration Test</td><td>Inductance within±5% of initial value
The appearance shall not break</td><td>After vibration for 1hour, in each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P amplitudes</td></tr>
</table>