

Data Sheet

Customer:

Product: SMD Flat Wire Coils – SDB Series

Sizes.: 0420/0520/0530/0620/0625/0630/1040/1340/ 1350/1365

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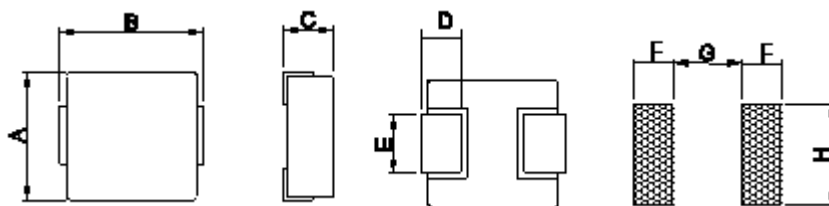
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SMD Flat Wire Coils



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

Characteristics

- Saturation Rated Current would cause inductance to drop approximately 25%(0402 drop approximately 30%)
- Temperature Rise Current would cause an approximately ΔT of 40°C
- All test data is referred to 25°C ambient

Dimensions

Unit: mm

Type	A	B	C max.	D	E	F	G	H
SDB0420	4.1±0.5	4.5±0.5	2.1	0.8±0.5	1.5±0.5	1.5	2.5	2.2
SDB0520	4.7±0.5	5.5±0.5	2.0	1.2±0.5	1.5±0.5	2.0	3.0	2.5
SDB0530	4.7±0.5	5.5±0.5	3.0	1.2±0.5	1.5±0.5	2.0	3.0	2.5
SDB0620	6.8 max	7.6 max	2.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
SDB0625	6.8 max	7.6 max	2.5	1.6±0.5	2.9±0.5	2.5	3.7	3.5
SDB0630	6.8 max	7.6 max	3.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
SDB0650	6.8 max	7.6 max	5.0	1.6±0.5	2.9±0.5	2.5	3.7	3.5
SDB1040	10.4 max	11.5 max	4.0	2.0±0.5	2.9±0.5	3.5	6.0	4.0
SDB1340	13.0 max	14.2 max	4.0	2.3±0.5	3.8±0.5	2.9	7.9	5.0
SDB1350	13.0 max	14.2 max	5.0	2.3±0.5	3.8±0.5	2.9	7.9	5.0
SDB1365	13.0 max	14.2 max	6.5	2.3±0.5	3.8±0.5	2.9	7.9	5.0

Inductance and rated current ranges

- SDB0420 0.10μH~3.3μH @Saturation Current: 22~4A
- SDB0520 0.10μH~4.7μH @Saturation Current: 45~5A
- SDB0530 0.10μH~4.7μH @Saturation Current: 27~8.2A
- SDB0620 0.10μH~4.7μH @Saturation Current: 40~8A
- SDB0625 0.10μH~10μH @Saturation Current: 50~7A
- SDB0630 0.10μH~10μH @Saturation Current: 60~7A
- SDB0650 0.56μH~10μH @Saturation Current: 12~4.5A
- SDB1040 0.19μH~10μH @Saturation Current: 90~12A
- SDB1340 0.10μH~10μH @Saturation Current: 84~14A
- SDB1350 0.10μH~10μH @Saturation Current: 118~16A
- SDB1365 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: -40°C~+125°C

Product Identification

SDB	0630	M	T	100
Product Type	Dimensions (AxC)	Inductor Tolerance	Packaging Style	Inductance
	0420: 4.1×2.1 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: 10.4×4.0 1340: 13.0×4.0 1350: 13.0×5.0 1365: 13.0×6.5	M: ±20%	T: Tape and Reel	R10: 0.10μH 1R0: 1.0μH 100: 10μH

Electrical Characteristics

SDB0420 Type

Codes	Inductance (μH)	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

SDB0520 Type

Codes	Inductance (μH)	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

■Electrical Characteristics

SDB0530 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

SDB0620 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	13.00	4.00
2R2	2.2	M	100KHz, 0.25V	46.0	11.50	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

SDB0625 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

■Electrical Characteristics

SDB0630 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
R56	0.56	M	100KHz, 0.25V	4.5	24.5	16.5
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

SDB0650 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

■Electrical Characteristics

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

SDB1340 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

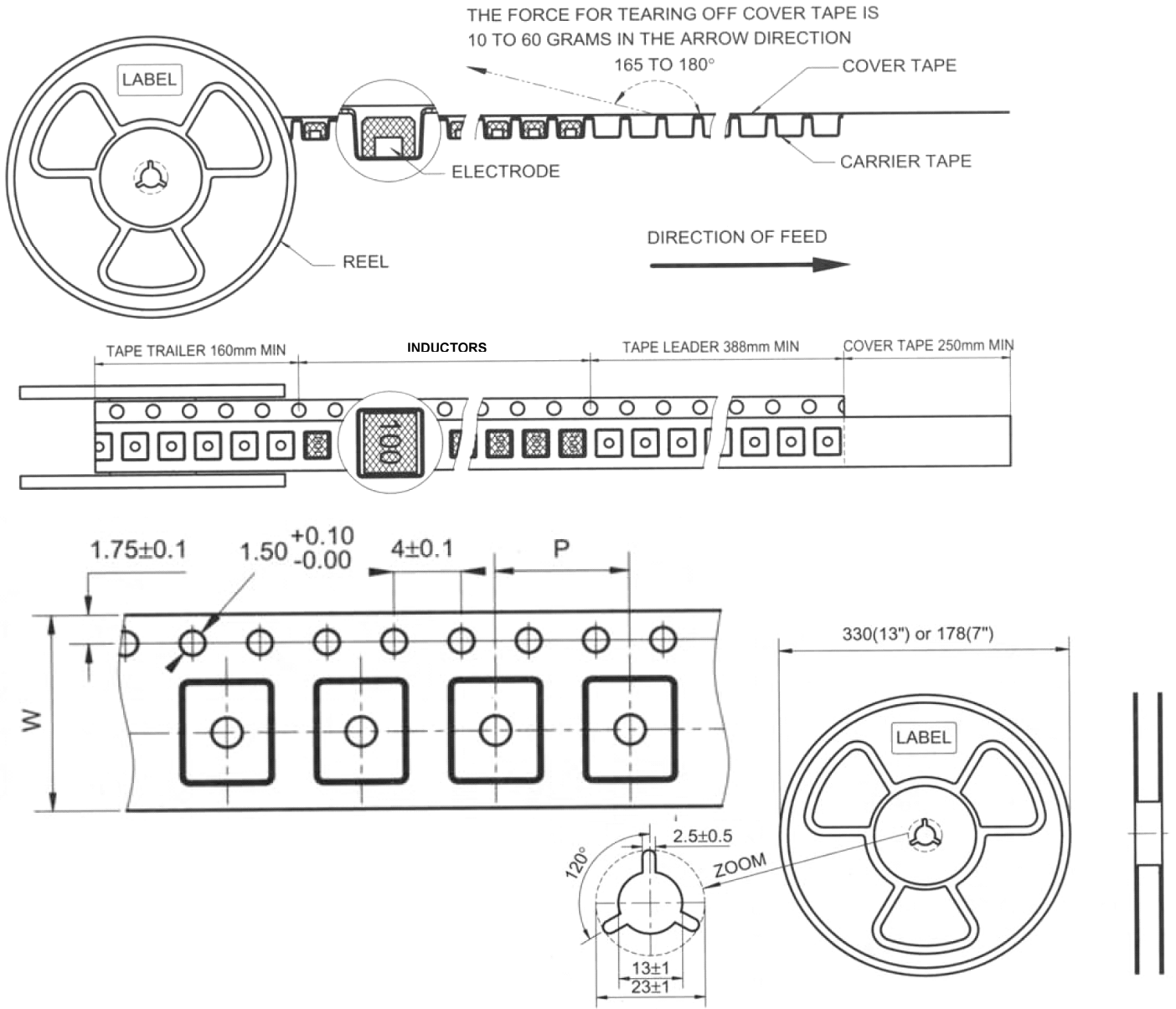
SDB1350 Type

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	0.6	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

SDB1365 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

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
SDB0420	12	8	3500
SDB0520	12	8	3000
SDB0530	12	8	2500
SDB0620	16	12	2000
SDB0625	16	12	2000
SDB0630	16	12	1500
SDB0650	16	12	800
SDB1040	24	16	1000
SDB1340	24	16	1000
SDB1350	24	16	500
SDB1365	24	16	500

General Characteristics

Item	Requirement	Test Method												
Solderability	More than 90% of the terminal electrode should be covered with solder	230±5°C for 4±1 seconds												
Solder Heat Resistance	Inductance within±20% of initial value No disconnection or short circuit The appearance shall not break	260±5°C for 10±1 seconds												
Heat Resistance		Temperature: 125±5°C Time: 500 hours Tested after 2 hour at room temperature												
Cold Resistance		Temperature: -40±5°C Time: 500 hours Tested after 2 hour at room temperature												
Thermal Shock		One cycle: <table border="1" data-bbox="794 680 1452 853"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <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> </tbody> </table>	Step	Temperature(°C)	Time (min.)	1	-40±5°C	30	2	Room temperature	3	3	125±5°C	30
Step		Temperature(°C)	Time (min.)											
1		-40±5°C	30											
2	Room temperature	3												
3	125±5°C	30												
Humidity Resistance	Temperature: 40±2°C, 90~95% relative humidity Time: 500 hours Tested after 2 hour at room temperature													
Vibration Test	Inductance within±5% of initial value The appearance shall not break	After vibration for 1hour, in each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P amplitudes												