

## Data Sheet

**Customer:**

**Product:** SMD Power Inductor – SDIA Series

**Sizes.:** 0310/0312/0315/0410/0412/0415/0418/0420/0430/0520/  
0528/0540/0610/ 0612/0620/0628/0645/0840

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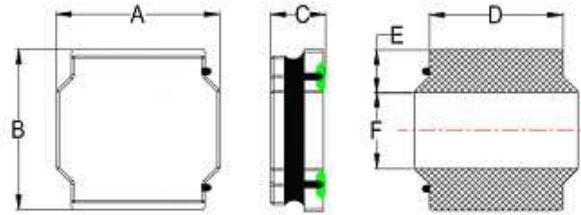
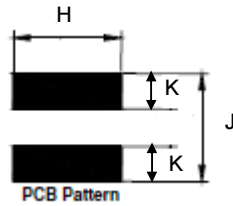
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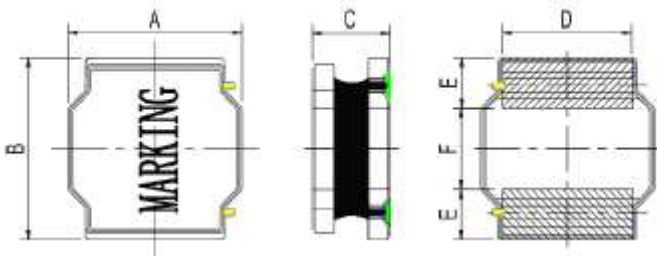
**SMD Power Inductor**



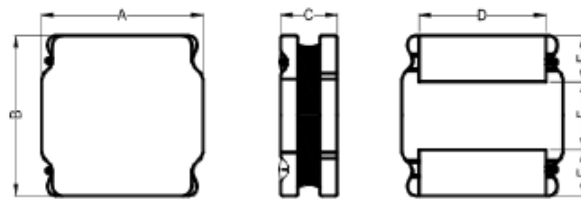
SDIA0310 / 0312



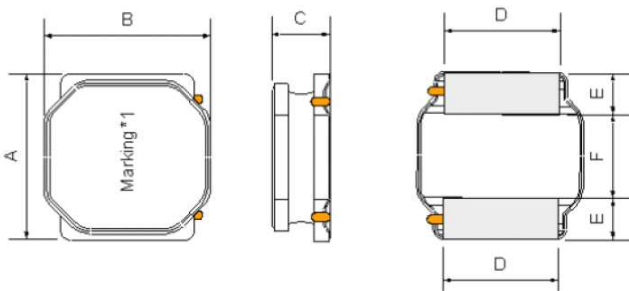
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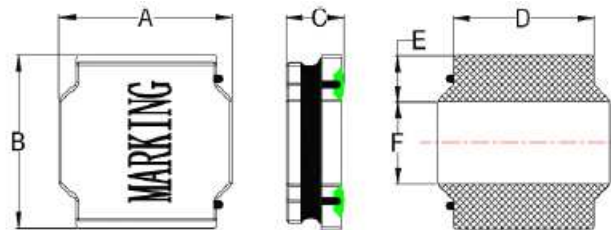
SDIA0315



SDIA0540 / 0645 / 0528



SDIA0410 / 0412/0415 / 0430 / 0610 / 0612 / 0620 / 0628 / 0840



**Dimensions**

Unit: mm

Type	A	B	C	D	E	F	H	J	K
SDIA0310	3.0±0.2	3.0±0.2	1.0 max	2.5±0.2	0.75±0.2	1.5±0.2	2.7	3.0	0.8
SDIA0312	3.0±0.2	3.0±0.2	1.2 max	2.5±0.2	0.75±0.2	1.5±0.2	2.7	3.0	0.8
SDIA0315	3.0±0.2	3.0±0.2	1.5 max	2.5±0.2	0.75±0.2	1.5±0.2	2.7	3.0	0.8
SDIA0410	4.0±0.2	4.0±0.2	1.0 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0412	4.0±0.2	4.0±0.2	1.2 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0415	4.0±0.2	4.0±0.2	1.65 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0418	4.0±0.2	4.0±0.2	1.85 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0420	4.0±0.2	4.0±0.2	2.0 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0430	4.0±0.2	4.0±0.2	3.0 max	3.3±0.2	0.95±0.2	2.1±0.2	3.7	4.0	1.2
SDIA0520	5.0±0.2	5.0±0.2	2.0 max	4.0±0.2	1.25±0.2	2.5±0.2	4.7	5.0	1.5
SDIA0528	5.0±0.2	5.0±0.2	2.8 max	4.0±0.2	1.25±0.2	2.5±0.2	4.7	5.0	1.5
SDIA0540	5.0±0.2	5.0±0.2	4.0 max	4.0±0.2	1.25±0.2	2.5±0.2	4.7	5.0	1.5
SDIA0610	6.0±0.3	6.0±0.3	1.0 max	4.9±0.2	1.55±0.3	2.9±0.3	5.7	6.3	1.6
SDIA0612	6.0±0.3	6.0±0.3	1.2 max	4.9±0.2	1.55±0.3	2.9±0.3	5.7	6.3	1.6
SDIA0620	6.0±0.3	6.0±0.3	2.0 max	4.9±0.2	1.55±0.3	2.9±0.3	5.7	6.3	1.6
SDIA0628	6.0±0.3	6.0±0.3	2.8 max	4.9±0.2	1.7±0.3	2.9±0.3	5.7	6.3	1.6
SDIA0645	6.0±0.3	6.0±0.3	4.5 max	4.9±0.2	1.55±0.2	2.9±0.3	5.7	6.3	1.6
SDIA0840	8.0±0.3	8.0±0.3	4.2 max	6.3±0.3	2.0±0.3	4.0±0.3	7.5	8.2	2.2

**SMD Power Inductor**

**■ Features**

- Small and Low profile inductor
- It corresponds to high current
- Shield structure magnetically
- Strong structure against a shock-proof

**■ Applications**

- LCD Display etc.
- For Small DC to DC Converters
- PDA.

**■ Characteristics**

- Rated DC Current : The current when the inductance becomes 30% lower than its initial value.
- Operating temperature range: -40~125°C

**■ Inductance and rated current ranges**

-SDIA0310	1.0~47μH	1.40~0.22A
-SDIA0312	1.5~47μH	1.87~0.27A
-SDIA0315	1.0~47μH	2.10~0.32A
-SDIA0410	1.0~22μH	2.00~0.45A
-SDIA0412	1.0~22μH	2.61~0.46A
-SDIA0415	1.0~22μH	2.50~0.68A
-SDIA0418	1.0~47μH	4.00~0.57A
-SDIA0420	1.0~47μH	4.78~0.74A
-SDIA0430	1.0~100μH	5.26~0.60A
-SDIA0520	1.0~47μH	4.33~0.81A
-SDIA0528	2.2~47μH	5.50~1.00A
-SDIA0540	1.0~100μH	7.35~0.75A
-SDIA0610	1.5~22μH	2.40~0.65A
-SDIA0612	3.3~22μH	1.80~0.76A
-SDIA0620	1.0~47μH	4.30~1.00A
-SDIA0628	1.0~100μH	6.70~0.65A
-SDIA0645	2.2~220μH	6.00~0.80A
-SDIA0840	2.2~680μH	7.10~0.30A

- Test equipment:  
L: HP4284A LCR meter  
DCR: Milli-ohm meter
- Electrical specifications at 25°C

**■ Product Identification**

SDIA	0312	M	T	470
Product Type	Dimensions (AxC)	Inductor Tolerance	Packaging Style	Inductance
	0310: 3.0x1.0 0312: 3.0x1.2 0315: 3.0x1.5 0410: 4.0x1.0 0412: 4.0x1.2 0415: 4.0x1.65 0418: 4.0x1.85 0420: 4.0x2.0 0430: 4.0x3.0 0520: 5.0x2.0 0528: 5.0x2.8 0540: 5.0x4.0 0610: 6.0x1.0 0612: 6.0x1.2 0620: 6.0x2.0 0628: 6.0x2.8 0645: 6.0x4.5 0840: 8.0x4.2	M: ±20% N: ±30%	T: Tape and Reel	1R0: 1.0μH 470: 47μH 101: 100μH

**SMD Power Inductor**

**■Electrical Characteristics**

SDIA0310 / 0312 / 0315 / 0410 Type

Codes	L ( $\mu$ H)	Tolerance			Test Condition	DCR ( $\Omega$ ) $\pm$ 30%.				IDC (A) max.			
		0310	0312 0315	0410		0310	0312	0315	0410	0310	0312	0315	0410
1R0	1.0	N	N	N	100KHz, 0.25V	0.065	0.040	0.037	0.056	1.40	1.87	2.10	2.00
1R5	1.5	N	N	N	100KHz, 0.25V	0.080	0.045	0.050	0.070	1.27	1.62	1.70	1.68
2R2	2.2	N	N	M, N	100KHz, 0.25V	0.110	0.075	0.060	0.085	1.15	1.20	1.60	1.20
3R3	3.3	N	M, N	M, N	100KHz, 0.25V	0.145	0.100	0.080	0.100	0.97	1.05	1.32	1.10
4R7	4.7	M, N	M, N	M, N	100KHz, 0.25V	0.225	0.120	0.125	0.140	0.75	0.90	1.10	0.95
6R8	6.8	M, N	M, N	M, N	100KHz, 0.25V	0.305	0.190	0.200	0.200	0.55	0.75	0.85	0.80
100	10	M, N	M, N	M, N	1KHz, 0.25V	0.400	0.265	0.250	0.300	0.55	0.60	0.72	0.62
150	15	M, N	M, N	-	1KHz, 0.25V	0.610	0.360	0.350	-	0.42	0.45	0.65	-
220	22	M, N	M, N	M, N	1KHz, 0.25V	0.930	0.645	0.460	0.570	0.35	0.42	0.52	0.45
330	33	M, N	M, N	-	1KHz, 0.25V	1.550	0.875	0.780	-	0.29	0.36	0.42	-
470	47	M, N	M, N	-	1KHz, 0.25V	1.950	1.450	1.200	-	0.22	0.27	0.32	-

SDIA0412 / 0415 / 0418 / 0420 Type

Codes	L ( $\mu$ H)	Tolerance			Test Condition	DCR ( $\Omega$ ) $\pm$ 30%.				IDC (A) max.			
		0412	0415 0420	0418		0412	0415	0418	0420	0412	0415	0418	0420
1R0	1.0	N	N	N	100KHz, 0.25V	0.050	0.035	0.023	0.029	2.61	2.50	4.00	4.78
1R5	1.5	N	N	N	100KHz, 0.25V	0.065	0.040	0.033	0.035	2.10	2.20	3.35	4.45
2R2	2.2	N	M, N	M, N	100KHz, 0.25V	0.080	0.053	0.044	0.040	1.76	2.00	2.70	3.40
3R3	3.3	N	M, N	M, N	100KHz, 0.25V	0.110	0.075	0.070	0.070	1.72	1.80	2.45	3.20
4R7	4.7	N	M, N	M, N	100KHz, 0.25V	0.125	0.100	0.090	0.075	1.15	1.35	1.70	2.35
5R6	5.6	-	-	M, N	100KHz, 0.25V	-	-	0.103	-	-	-	1.60	-
6R8	6.8	M, N	M, N	M, N	100KHz, 0.25V	0.198	0.135	0.124	0.125	0.85	1.20	1.45	2.20
100	10	M, N	M, N	M, N	1KHz, 0.25V	0.265	0.200	0.200	0.165	0.80	1.00	1.30	1.60
150	15	M, N	M, N	M, N	1KHz, 0.25V	0.340	0.300	0.268	0.230	0.56	0.85	0.94	1.35
220	22	M, N	M, N	M, N	1KHz, 0.25V	0.587	0.400	0.390	0.350	0.46	0.68	0.80	1.05
330	33	M, N	M, N	M, N	1KHz, 0.25V	-	-	0.560	0.550	-	-	0.65	0.85
470	47	M, N	M, N	M, N	1KHz, 0.25V	-	-	0.850	0.710	-	-	0.57	0.74

**SMD Power Inductor**

**■Electrical Characteristics**

SDIA0430 / 0520 / 0528 / 0540 Type

Codes	L ( $\mu$ H)	Tolerance			Test Condition	DCR ( $\Omega$ ) $\pm$ 30%.				IDC (A) max.			
		0430	0520 0540	0528		0430	0520	0528	0540	0430	0520	0528	0540
1R0	1.0	N	N	-	100KHz, 0.25V	0.014	0.020	-	0.012	5.26	4.33	-	7.35
1R5	1.5	N	N	-	100KHz, 0.25V	0.020	0.026	-	0.015	4.84	4.10	-	6.30
2R2	2.2	N	N	N	100KHz, 0.25V	0.030	0.038	0.035	0.019	4.50	3.85	5.50	4.90
3R3	3.3	N	N	N	100KHz, 0.25V	0.040	0.046	0.045	0.024	3.30	3.25	4.50	3.95
4R7	4.7	N	M, N	N	100KHz, 0.25V	0.060	0.065	0.030	0.030	2.90	2.40	3.80	3.50
6R8	6.8	M, N	M, N	M, N	100KHz, 0.25V	0.090	0.092	0.070	0.043	2.75	2.10	3.20	2.90
8R2	8.2	M, N	M, N	-	100KHz, 0.25V	-	0.100	-	-	-	1.90	-	-
100	10	M, N	M, N	M, N	1KHz, 0.25V	0.100	0.125	0.100	0.064	1.95	1.80	2.80	2.35
150	15	M, N	M, N	-	1KHz, 0.25V	0.190	0.180	-	-	1.65	1.44	-	-
220	22	M, N	M, N	M, N	1KHz, 0.25V	0.225	0.250	0.200	0.086	1.30	1.18	1.80	2.00
330	33	M, N	M, N	M, N	1KHz, 0.25V	0.330	0.370	0.300	0.188	1.10	0.97	1.40	1.30
470	47	M, N	M, N	M, N	1KHz, 0.25V	0.445	0.560	0.460	0.272	0.95	0.81	1.00	1.10
680	68	M, N	M, N		1KHz, 0.25V	0.868	-	-	0.400	0.72	-	-	0.90
820	82	M, N	-		1KHz, 0.25V	1.060	-	-	-	0.66	-	-	-
101	100	M, N	M, N		1KHz, 0.25V	1.150	-	-	0.560	0.60	-	-	0.75

SDIA 0610 / 0612 / 0620 / 0628 Type

Codes	L ( $\mu$ H)	Tolerance			Test Condition	DCR ( $\Omega$ ) $\pm$ 30%.				IDC (A) max.			
		0610 0612	0620	0628		0610	0612	0620	0628	0610	0612	0620	0628
1R0	1.0	N	N	N	100KHz, 0.25V	-	-	0.020	0.012	-	-	4.30	6.70
1R5	1.5	N	N	N	100KHz, 0.25V	0.090	-	0.025	0.016	2.40	-	4.25-	6.00
2R2	2.2	N	N	N	100KHz, 0.25V	0.110	-	0.035	0.020	1.90	-	3.75	5.10
3R3	3.3	N	N	N	100KHz, 0.25V	0.135	0.105	0.045	0.025	1.60	1.80	3.15	3.63
4R7	4.7	N	N	N	100KHz, 0.25V	0.165	0.125	0.058	0.033	1.30	1.60	3.00	3.00
5R6	5.6	-	M, N	-	100KHz, 0.25V	-	-	0.070	-	-	-	2.40	-
6R8	6.8	M, N	M, N	M, N	100KHz, 0.25V	0.220	0.165	0.085	0.056	1.20	1.30	2.20	2.60
100	10	M, N	M, N	M, N	1KHz, 0.25V	0.270	0.200	0.120	0.078	1.00	1.00	1.75	2.05
150	15	M, N	M, N	M, N	1KHz, 0.25V	-	0.295	0.160	0.125	-	0.80	1.50	1.75
180	18	-	-	M, N	1KHz, 0.25V	-	-	-	0.130	-	-	-	1.55
220	22	M, N	M, N	M, N	1KHz, 0.25V	0.580	0.469	0.240	0.140	0.65	0.76	1.25	1.45
270	27	-	-	M, N	1KHz, 0.25V	-	-	-	0.180				1.40
330	33	-	M, N	M, N	1KHz, 0.25V	-	-	0.400	0.220	-	-	1.10	1.36
470	47	-	M, N	M, N	1KHz, 0.25V	-	-	0.500	0.280	-	-	1.00	1.15
680	68	-	-	M, N	1KHz, 0.25V	-	-	-	0.450	-	-	-	0.95
820	82	-	-	M, N	1KHz, 0.25V	-	-	-	0.550				0.80
101	100	-	-	M, N	1KHz, 0.25V	-	-	-	0.670	-	-	-	0.65

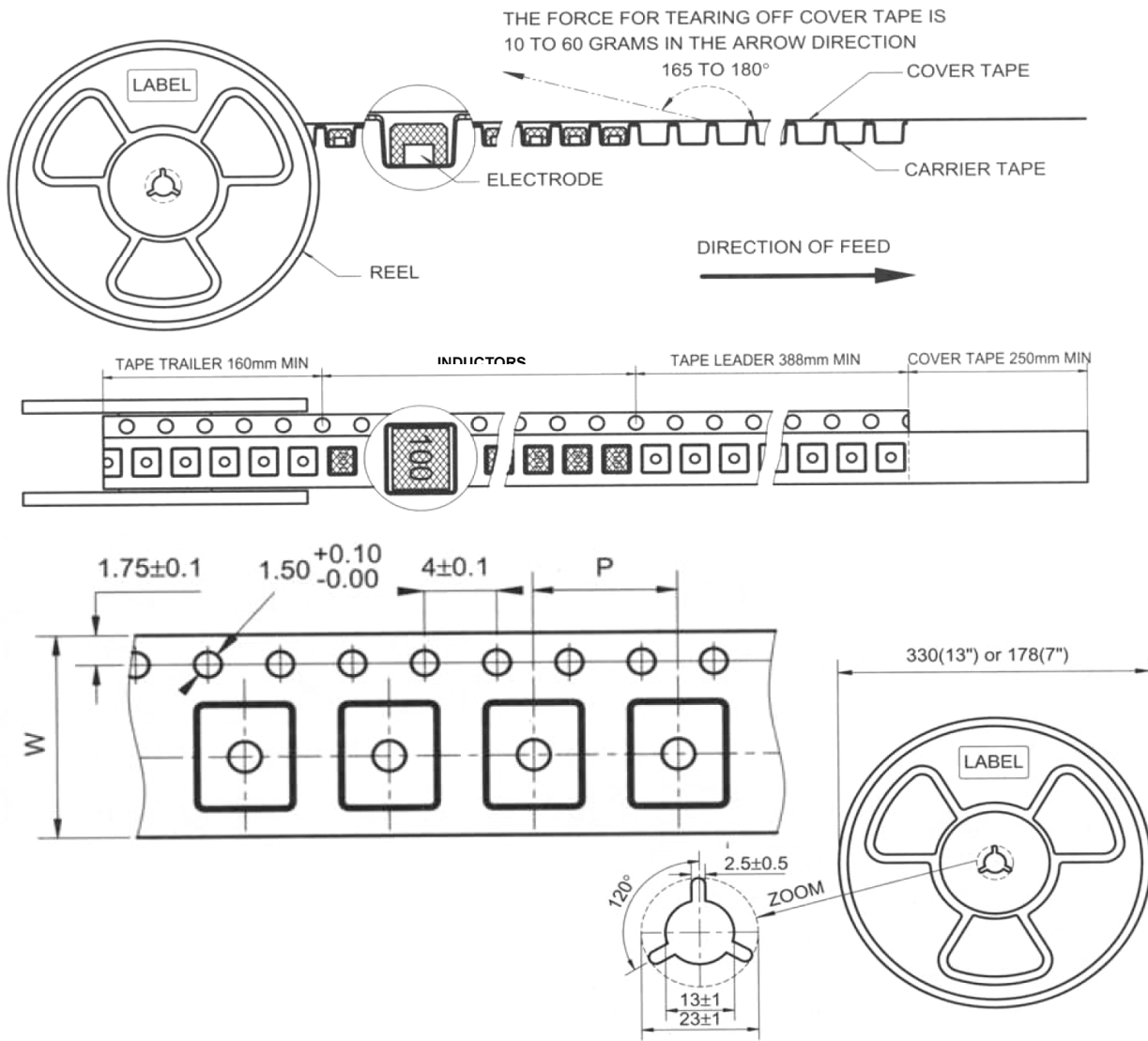
**■Electrical Characteristics**

SDIA0645 / 0840 Type

Codes	L ( $\mu$ H)	Tolerance		Test Condition	DCR ( $\Omega$ ) $\pm$ 30%.		IDC (A) max.	
		0645	0840		0645	0840	0645	0840
2R2	2.2	N	M, N	100KHz, 0.25V	0.021	0.012	6.00	7.10
3R3	3.3	N	M, N	100KHz, 0.25V	0.023	0.017	5.20	6.50
4R7	4.7	N	M, N	100KHz, 0.25V	0.025	0.020	4.00	5.90
5R6	5.6	-	M, N	100KHz, 0.25V	-	0.024	-	5.50
6R8	6.8	N	M, N	100KHz, 0.25V	0.040	0.028	3.80	4.55
100	10	M, N	M, N	1KHz, 0.25V	0.047	0.037	3.00	3.60
150	15	M, N	M, N	1KHz, 0.25V	0.077	0.056	2.30	2.95
220	22	M, N	M, N	1KHz, 0.25V	0.115	0.074	1.90	2.40
330	33	M, N	M, N	1KHz, 0.25V	0.145	0.100	1.50	2.05
390	39	-	M, N	1KHz, 0.25V	-	0.107	-	1.95
470	47	M, N	M, N	1KHz, 0.25V	0.220	0.158	1.30	1.75
560	56	M, N	M, N	1KHz, 0.25V	0.221	0.148	1.30	1.55
680	68	M, N	M, N	1KHz, 0.25V	0.330	0.196	1.00	1.45
101	100	M, N	M, N	1KHz, 0.25V	0.500	0.295	0.80	1.15
151	150	-	M, N	1KHz, 0.25V	-	0.470	-	1.10
221	220	M, N	M, N	1KHz, 0.25V	1.100	0.660	0.80	0.85
331	330	-	M, N	1KHz, 0.25V	-	0.970	-	0.68
471	470	-	M, N	1KHz, 0.25V	-	1.400	-	0.60
681	680	-	M, N	1KHz, 0.25V	-	2.200	-	0.30

**SMD Power Inductor**

**■Tape and Reel specifications**



Unit: mm

Type	Tape size		Parts Per Reel	
	W	P	7"	13"
SDIA0310	8	4	1000	-
SDIA0312	8	4	2000	-
SDIA0315	8	4	2000	-
SDIA0410	12	8	-	5000
SDIA0412	12	8	-	4500
SDIA0415	12	8	-	3000
SDIA0418	12	8	-	3000
SDIA0420	12	8	-	3000
SDIA0430	12	8	-	2500
SDIA0520	12	8	-	2500
SDIA0528	12	8	-	2000
SDIA0540	12	8	-	1500
SDIA0610	12	8	-	2500
SDIA0612	12	8	-	2000
SDIA0620	12	8	-	2000
SDIA0628	16	8	-	1500
SDIA0645	16	8	-	1000
SDIA0840	16	12	-	1000

**SMD Power Inductor**

**■ SMT Power Inductor Environmental Specifications**

General

Items	Specifications
Shelf Storage conditions	Temperature range: 15~28°C; Humidity: <80% relative humidity. Recommended product should be used within 12 months from the time of delivery.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature 85±2°C, Time: 48±2 hours, Tested after 1 hour at room temperature.
Low temperature Storage test		Temperature -25±2°C, Time: 48±2 hours, Tested after 1 hour at room temperature.
Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours Tested after 1 hour at room temperature.
Thermal shock test		First -25°C 30minutes then 25°C 10 minutes last 85°C 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at 245±5°C for 3 seconds.
Resistance to Soldering Heat	No case deformation or change in appearance.	Flux should cover the whole of the sample before heating, then be preheated for about 2 minutes over temperature of 130~150°C. Immersing to 260±5°C for 10 seconds.
Vibration test	No case deformation or change in appearance.	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance	$\Delta L/L \leq 10\%$	Drop down with 981m/s <sup>2</sup> (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

The condition of reflow (recommendation):

