Data Sheet

Customer:	
Product:	**Shielded Molding SMD Power Inductor – SDN Series**
Sizes.:	**0412/0420/0518/0530/0618/0624/0630/1040**
Issued Date:	**03-Jul-25**
Edition:	**REV.A4**

RoHS Compliant

HONG KONG HELISTO INDUSTRIAL LIMITED
香港海利斯特实业有限公司

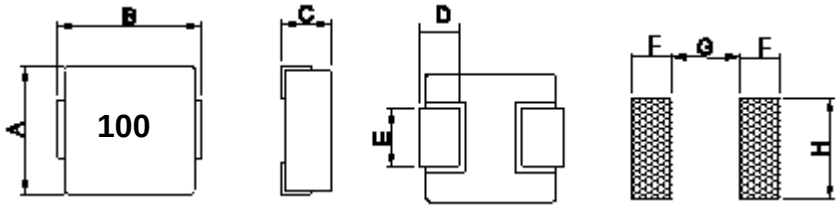
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03-Jul-25	03-Jul-25	03-Jul-25	03-Jul-25	
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Shielded Molding SMD Power Inductor





Features

- Halogen free
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Frequency range up to 5MHz
- RoHS compliant

Applications

- Voltage Regulator Module (VRM)
- Multi-phase Regulators
- Point-of-load Modules
- Smart Phone POL Modules
- SSD Modules
- Notebook Regulators
- Battery Power Systems
- Graphics Cards
- Data Networking And Storage Systems

Characteristics

- Saturation Rated Current would cause inductance to drop approximately 30%
- Temperature Rise Current would cause an approximately △T of 40°C
- All test data is referred to 25°C ambient
- 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.
- Storage Temperature: -10℃～40℃ ; Humidity: <75%
- Shelf life: 6 months max

Dimensions

Unit: mm

Type	A	B	C	D	E	F	G	H
SDN0412	4.2±0.25	4.4±0.35	1.0±0.2	0.8±0.3	2.0±0.3	1.5	2.2	2.5
SDN0420	4.2±0.25	4.4±0.35	1.8±0.2	0.8±0.3	2.0±0.3	1.5	2.2	2.5
SDN0518	5.2±0.20	5.4±0.30	1.6±0.2	1.2±0.2	2.2±0.3	1.9	2.2	2.5
SDN0530	5.2±0.20	5.4±0.3	2.8±0.2	1.2±0.2	2.2±0.3	1.9	2.2	2.5
SDN0618	6.6±0.20	7.0±0.3	1.6±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
SDN0624	6.6±0.20	7.0±0.3	2.2±0.2	2.0±0.1	3.0±0.3	2.35	3.7	3.5
SDN0630	6.6±0.20	7.0±0.3	2.8±0.2	1.6±0.3	3.0±0.3	2.35	3.7	3.5
SDN1040	10.0±0.30	11.5 Max	3.8±0.2	2.0±0.5	3.0±0.5	4.1	5.4	4.1

Inductance and rated current ranges

- SDN0412 0.47μH～4.7μH @Saturation Current: 6.8～2.8A
- SDN0420 0.22μH～10μH @Saturation Current: 12.5～2.2A
- SDN0518 0.47μH～10μH @Saturation Current: 15.5～3A
- SDN0530 0.20μH～10μH @Saturation Current: 14.5～3.5A
- SDN0618 0.68μH～22μH @Saturation Current: 17～2.3A
- SDN0624 0.33μH～10μH @Saturation Current: 24.5～4.0A
- SDN0630 0.22μH～33μH @Saturation Current: 34～2.5A
- SDN1040 0.15μH～33μH @Saturation Current: 75～5.0A
- Test equipment:
  L: HP4284A LCR meter
  DCR: Milli-ohm meter
- Electrical specifications at 25°C
- Operating temperature rang: -55°C～+125°C

Shielded Molding SMD Power Inductor

■Product Identification

SDN	0630	M	T	100
Product Type	Dimensions (AxC)	Inductor Tolerance	Packaging Style	Inductance
	0412: 4.2×1.0 0420: 4.2×1.8 0518: 5.2×1.6 0530: 5.2×2.8 0618: 6.6×1.6 0624: 6.6×2.2 0630: 6.6×2.8 1040: 10.0×3.8	M: ±20%	T: Tape and Reel	R10: 0.10μH 1R0: 1.0μH 100: 10μH

■Electrical Characteristics

SDN0412 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0412□TR47	0.47	M	100KHz, 0.25V	21.0	6.8	6.0
SDN0412□T1R0	1.0	M	100KHz, 0.25V	47.0	5.5	4.5
SDN0412□T2R2	2.2	M	100KHz, 0.25V	83.5	3.5	2.75
SDN0412□T4R7	4.7	M	100KHz, 0.25V	195.0	2.8	1.8

SDN0420 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0420□TR22	0.22	M	100KHz, 0.25V	6.6	12.5	9.5
SDN0420□TR47	0.47	M	100KHz, 0.25V	14.0	9.5	7.5
SDN0420□TR68	0.68	M	100KHz, 0.25V	18.0	9.0	7.0
SDN0420□T1R0	1.0	M	100KHz, 0.25V	27.0	7.0	6.0
SDN0420□T1R5	1.5	M	100KHz, 0.25V	46.0	6.0	5.0
SDN0420□T2R2	2.2	M	100KHz, 0.25V	58.0	5.0	4.5
SDN0420□T3R3	3.3	M	100KHz, 0.25V	87.0	4.0	3.3
SDN0420□T4R7	4.7	M	100KHz, 0.25V	105.0	3.0	2.8
SDN0420□T6R8	6.8	M	100KHz, 0.25V	175.0	2.5	2.4
SDN0420□T100	10	M	100KHz, 0.25V	282.0	2.2	1.6

SDN0518 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0518□TR47	0.47	M	100KHz, 0.25V	9.0	15.5	10.5
SDN0518□T1R0	1.0	M	100KHz, 0.25V	17.0	9.0	8.0
SDN0518□T1R5	1.5	M	100KHz, 0.25V	26.0	9.0	7.5
SDN0518□T2R2	2.2	M	100KHz, 0.25V	35.0	6.5	5.0
SDN0518□T3R3	3.3	M	100KHz, 0.25V	58.0	5.0	4.5
SDN0518□T4R7	4.7	M	100KHz, 0.25V	85.0	4.0	3.5
SDN0518□T6R8	6.8	M	100KHz, 0.25V	120.0	3.4	2.8
SDN0518□T100	10	M	100KHz, 0.25V	155.0	3.0	2.5

■Electrical Characteristics

SDN0530 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0530□TR20	0.20	M	100KHz, 0.25V	3.9	14.5	14.0
SDN0530□TR47	0.47	M	100KHz, 0.25V	8.5	12.0	11.0
SDN0530□TR68	0.68	M	100KHz, 0.25V	12.0	11.5	9.0
SDN0530□T1R0	1.0	M	100KHz, 0.25V	14.0	11.0	8.5
SDN0530□T1R5	1.5	M	100KHz, 0.25V	25.0	8.5	8.2
SDN0530□T2R2	2.2	M	100KHz, 0.25V	29.0	7.5	7.0
SDN0530□T3R3	3.3	M	100KHz, 0.25V	38.0	6.0	5.5
SDN0530□T4R7	4.7	M	100KHz, 0.25V	60.0	5.0	4.5
SDN0530□T6R8	6.8	M	100KHz, 0.25V	90.0	4.0	3.5
SDN0530□T100	10	M	100KHz, 0.25V	125.0	3.5	3.2

SDN0618 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0618□TR68	0.68	M	100KHz, 0.25V	12.0	17.0	9.5
SDN0618□T1R0	1.0	M	100KHz, 0.25V	16.0	14.0	8.5
SDN0618□T2R2	2.2	M	100KHz, 0.25V	35.0	8.0	7.0
SDN0618□T4R7	4.7	M	100KHz, 0.25V	62.0	5.0	4.0
SDN0618□T6R8	6.8	M	100KHz, 0.25V	110.0	4.5	3.0
SDN0618□T100	10	M	100KHz, 0.25V	155.0	2.5	2.3
SDN0618□T220	22	M	100KHz, 0.25V	350.0	2.3	1.8

SDN0624 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0624□TR33	0.33	M	100KHz, 0.25V	4.1	24.5	18.0
SDN0624□TR47	0.47	M	100KHz, 0.25V	5.1	22.0	15.0
SDN0624□TR56	0.56	M	100KHz, 0.25V	6.5	17.0	13.0
SDN0624□TR68	0.68	M	100KHz, 0.25V	7.0	16.0	12.0
SDN0624□T1R0	1.0	M	100KHz, 0.25V	13.5	16.0	9.0
SDN0624□T1R5	1.5	M	100KHz, 0.25V	20.0	15.0	9.0
SDN0624□T3R3	3.3	M	100KHz, 0.25V	39.0	10.0	5.5
SDN0624□T6R8	6.8	M	100KHz, 0.25V	70.0	6.0	4.0
SDN0624□T100	10	M	100KHz, 0.25V	101.0	4.0	3.1

■Electrical Characteristics

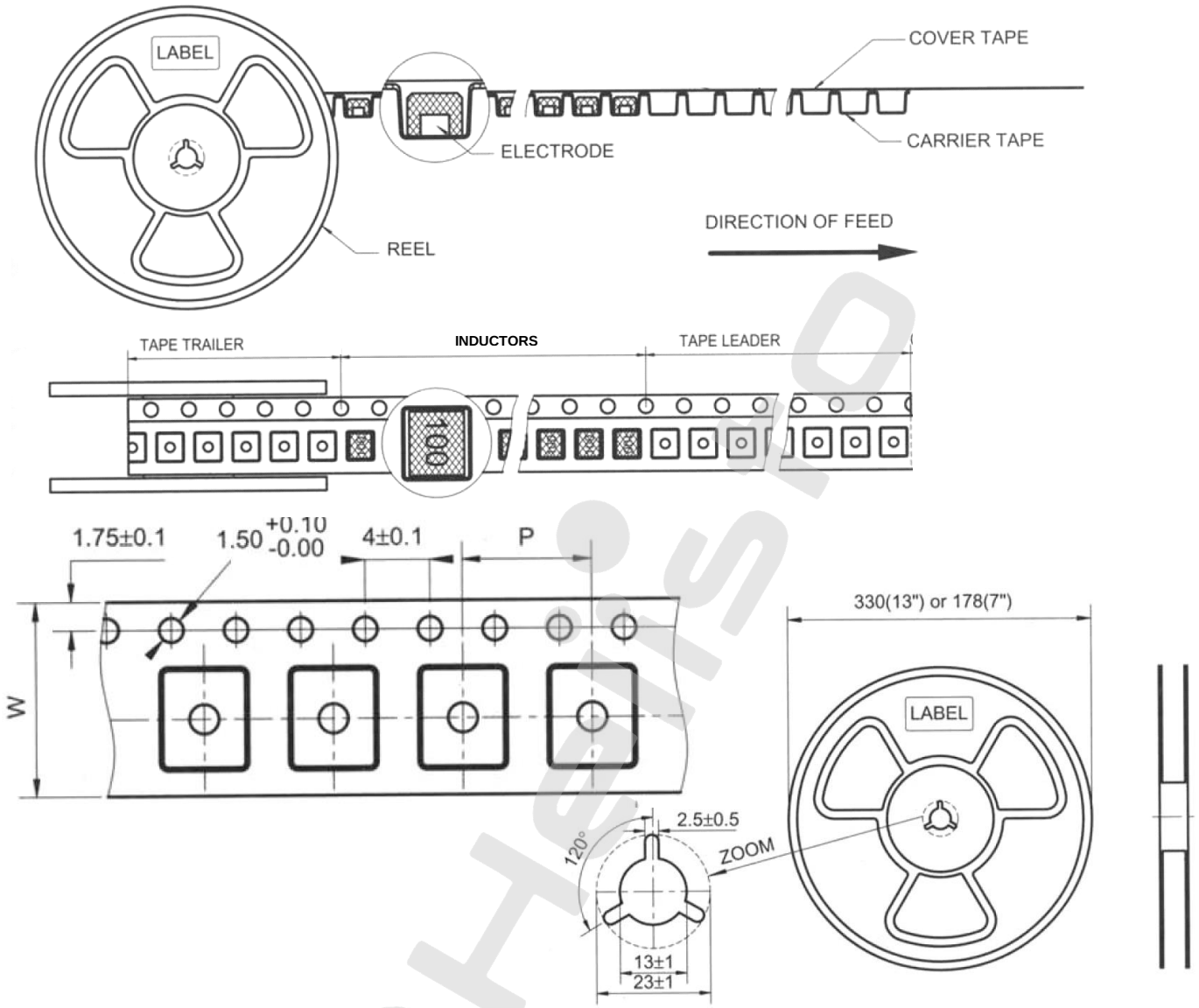
SDN0630 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN0630□TR22	0.22	M	100KHz, 0.25V	3.0	34.0	24.0
SDN0630□TR33	0.33	M	100KHz, 0.25V	3.5	25.0	21.0
SDN0630□TR47	0.47	M	100KHz, 0.25V	4.1	20.0	18.0
SDN0630□TR56	0.56	M	100KHz, 0.25V	4.5	18.0	16.5
SDN0630□TR68	0.68	M	100KHz, 0.25V	5.3	17.0	16.0
SDN0630□T1R0	1.0	M	100KHz, 0.25V	7.4	15.0	12.0
SDN0630□T1R5	1.5	M	100KHz, 0.25V	12.1	14.0	12.0
SDN0630□T2R2	2.2	M	100KHz, 0.25V	15.0	10.0	9.5
SDN0630□T3R3	3.3	M	100KHz, 0.25V	22.0	9.5	8.5
SDN0630□T4R7	4.7	M	100KHz, 0.25V	33.0	6.5	6.0
SDN0630□T6R8	6.8	M	100KHz, 0.25V	48.0	6.0	5.0
SDN0630□T100	10	M	100KHz, 0.25V	67.0	5.5	4.5
SDN0630□T150	15	M	100KHz, 0.25V	115.0	4.5	3.0
SDN0630□T220	22	M	100KHz, 0.25V	200.0	3.0	2.3
SDN0630□T330	33	M	100KHz, 0.25V	310.0	2.5	2.0

SDN1040 Type(□:Tolerance):

Part No.	Inductance (uH)	Tolerance	Test Condition	DCR (mΩ) Max.	Saturation Current (A) Typ.	Temperature Rise Current (A) Typ.
SDN1040□TR15	0.15	M	100KHz, 0.25V	0.65	75.0	45.0
SDN1040□TR22	0.22	M	100KHz, 0.25V	1.0	60.0	35.0
SDN1040□TR30	0.30	M	100KHz, 0.25V	1.1	50.0	35.0
SDN1040□TR36	0.36	M	100KHz, 0.25V	1.2	50.0	30.0
SDN1040□TR47	0.47	M	100KHz, 0.25V	1.7	40.0	30.0
SDN1040□TR56	0.56	M	100KHz, 0.25V	1.8	33.0	25.0
SDN1040□TR68	0.68	M	100KHz, 0.25V	2.4	30.0	23.0
SDN1040□TR80	0.80	M	100KHz, 0.25V	2.7	29.0	23.0
SDN1040□T1R0	1.0	M	100KHz, 0.25V	3.3	28.0	19.0
SDN1040□T1R5	1.5	M	100KHz, 0.25V	4.2	26.0	16.0
SDN1040□T2R2	2.2	M	100KHz, 0.25V	7.0	18.0	12.0
SDN1040□T3R3	3.3	M	100KHz, 0.25V	11.8	16.0	11.0
SDN1040□T4R7	4.7	M	100KHz, 0.25V	20.0	15.0	9.0
SDN1040□T6R8	6.8	M	100KHz, 0.25V	25.0	12.0	8.5
SDN1040□T8R2	8.2	M	100KHz, 0.25V	27.0	9.0	8.0
SDN1040□T100	10	M	100KHz, 0.25V	30.0	8.5	7.8
SDN1040□T150	15	M	100KHz, 0.25V	45.0	7.0	6.5
SDN1040□T220	22	M	100KHz, 0.25V	66.0	5.5	5.0
SDN1040□T330	33	M	100KHz, 0.25V	92.0	5.0	4.4

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
SDN0412	12	8	3000
SDN0420	12	8	3000
SDN0518	12	8	2000
SDN0530	12	8	2000
SDN0618	16	12	1500
SDN0624	16	12	1500
SDN0630	16	12	1500
SDN1040	24	16	500

■General Characteristics

<table>
<tr><th>Item</th><th>Requirement</th><th>Test Method</th></tr>
<tr><td>Solderability</td><td rowspan="8">Inductance within±10% of initial value
No disconnection or short circuit
The appearance shall not break</td><td>Solder heat proof:
Preheating: 160±10℃
Retention time: 245±5℃ for 2±0.5 seconds</td></tr>
<tr><td>Solder Heat Resistance</td><td>260±5°C for 10±1 seconds</td></tr>
<tr><td>High Temperature Resistance</td><td>Temperature: 85±2°C
Applied Current: Rated current
Time: 1000+4/-0 hours</td></tr>
<tr><td>Low Temperature Store</td><td>-55±2°C for 1000+4/-0 hours</td></tr>
<tr><td>High Temperature Store</td><td>125±2°C for 1000+4/-0 hours</td></tr>
<tr><td>Thermal Shock</td><td>Repeat 100 cycles as follow:
<table>
<tr><th>Step</th><th>Temperature(°C)</th><th>Time (min.)</th></tr>
<tr><td>1</td><td>-55±2°C</td><td>30±3</td></tr>
<tr><td>2</td><td>Room temperature</td><td>5</td></tr>
<tr><td>3</td><td>125±2°C</td><td>30±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>5</td></tr>
</table>
Recovery: 48 + 4 / -0 hours of recovery under the standard condition after the test.</td></tr>
<tr><td>Humidity Resistance</td><td>Temperature: 60±2°C, 90~95% relative humidity
Applied Current: Rated current
Time: 1000+4/-0 hours</td></tr>
<tr><td>Vibration Test</td><td rowspan="2">Inductance within±10% of initial value
The appearance shall not break</td><td>Vibration frequency:
(10 Hz to 55 Hz to 10Hz) in 60 seconds as a period
Vibration time:
Period cycled for 2 hours in each of 3 mutual perpendicular directions.
Amplitude: 1.5 mm max.</td></tr>
<tr><td>Shock</td><td>Peak value: 100 G
Duration of pulse: 11ms
times in each positive and negative direction of 3 mutual perpendicular directions</td></tr>
</table>

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A3	Apr 15 ,2025		-Add Storage conditions and Shelf life.
Version A4	Jul 03 ,2025		-Add the specifications of SDN0624MT1R0.