

承認書

SPECIFICATION FOR APPROVAL

Customer Name: 2144

Description Part No.:

Customer Part No.:

Sample No.:

DDY Part No.: DSE322520-系列

DRAWING		
MADE	CHECKED	APPROVED
黃春笑	趙萬虎	肖中華
DATE: 2024年3月16日		

CUSTOMER APPROVE



惠州市德立电子有限公司

HUI ZHOU DE LI ELECTRONICS CO., LTD

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1. Scope

This specification applies to the DSE322520 Series of wire wound SMD power inductor.

2.PRODUCT IDENTIFICATION

DSE 322520 - 1R5 □ - □
(1) (2) (3) (4) (5)

(1) .Series name (产品品名)

(2) .Dimensions (产品尺寸)

(3) .Inductance value (电感值)

(4) .Tolerance (误差值)

1R5: 1.5 μ H 221: 220 μ H

K:±10%; M: ±20%; N: ±30%

(5).Environmental status (环保状态)

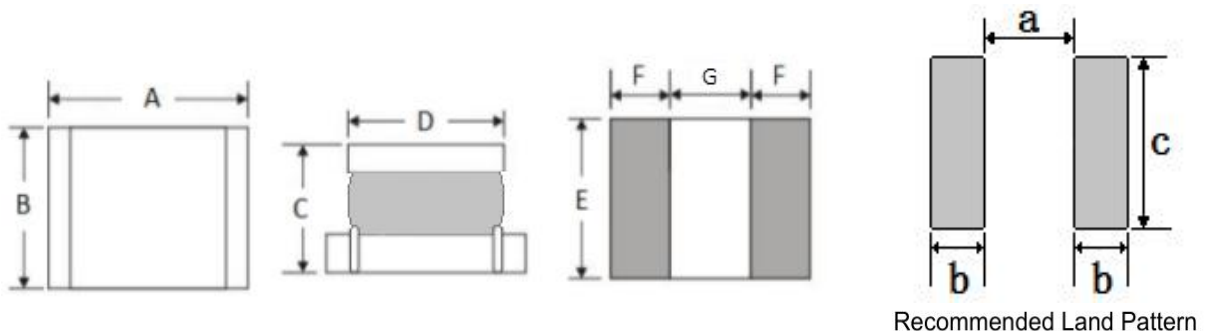
LF- Lead free; HF-Halogen free; FP-Free red phosphor.

3. Electrical Characteristics

Please refer to Item 5.

- 1). Operating temperature range (individual chip without packing): -40℃ ~ +125℃ .
- 2). Storage temperature range (packaging conditions): -40℃ ~ +85℃ and RH 70% (Max.).
- 3). Rating DC current: Temperature rise(ΔT) is 40℃ approximately at Irms.
- 4). Saturation DC current: Inductance drop approximately 10% of L_0 at Isat.

4. Shape and Dimensions (Unit:mm)



Series	A	B	C	D	E	F	G	a Typ.	b Typ.	c Typ.
DSE322520	3.2±0.2	2.5±0.2	2.0±0.2	2.5±0.2	2.5±0.2	1.15±0.3	0.9±0.3	0.85	1.3	2.80

[illegible]



5. Electrical Characteristics

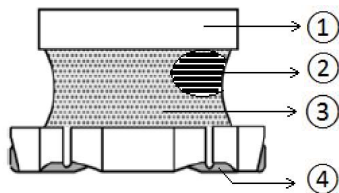
NO.	DDY CODE	Part Number	Inductance	SRF	DC Resistance	Isat(A)	Irms(A)	Marking
			1MHz/1.0V		Max.	Max.	Typ.	
		Units	(uH)	MHz Min.	Ω	A	A	
1		☐ DSE322520-R68N-HF	0.68±30%	100	0.042	3.00	3.00	N/A
2		☐ DSE322520-1R0N-HF	1.0±30%	100	0.054	2.40	2.40	N/A
3		☐ DSE322520-1R5N-HF	1.5±30%	75	0.073	1.85	2.00	N/A
4		☐ DSE322520-2R2N-HF	2.2±20%	65	0.108	1.70	2.00	N/A
5		☐ DSE322520-3R3N-HF	3.3±20%	50	0.141	1.50	1.60	N/A
6		☐ DSE322520-4R7M-HF	4.7±20%	45	0.165	1.35	1.50	N/A
7		☐ DSE322520-5R6M-HF	5.6±20%	40	0.213	1.20	1.30	N/A
8		☐ DSE322520-6R8M-HF	6.8±20%	30	0.288	1.00	1.20	N/A
9		☐ DSE322520-100M-HF	10.0±20%	25	0.343	0.80	1.00	N/A
10		☐ DSE322520-150M-HF	15.0±20%	20	0.585	0.70	0.80	N/A
11		☐ DSE322520-220M-HF	22.0±20%	15	0.828	0.60	0.60	N/A
12		☐ DSE322520-330M-HF	33.0±20%	12	1.365	0.48	0.50	N/A
13		☐ DSE322520-470M-HF	47.0±20%	11	1.565	0.40	0.40	N/A
14		☐ DSE322520-560M-HF	56.0±20%	10	1.755	0.40	0.40	N/A
15		☐ DSE322520-680M-HF	68.0±20%	9	2.550	0.35	0.38	N/A
16		☐ DSE322520-101M-HF	100.0±20%	7	3.750	0.30	0.35	N/A



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6. Structure (The structure of product.)



NO	Components	Material
①	Core	Ni-Zn Ferrite
②	Wire	Polyurethane system enameled copper wire
③	Plating	AgNiSn or FeNiCu + Sn Alloy
④	Epoxy	Epoxy resin

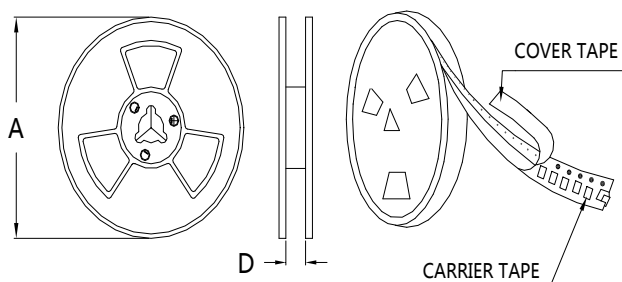
7. PACKAGING(unit: mm)

1.包装类型：编带装

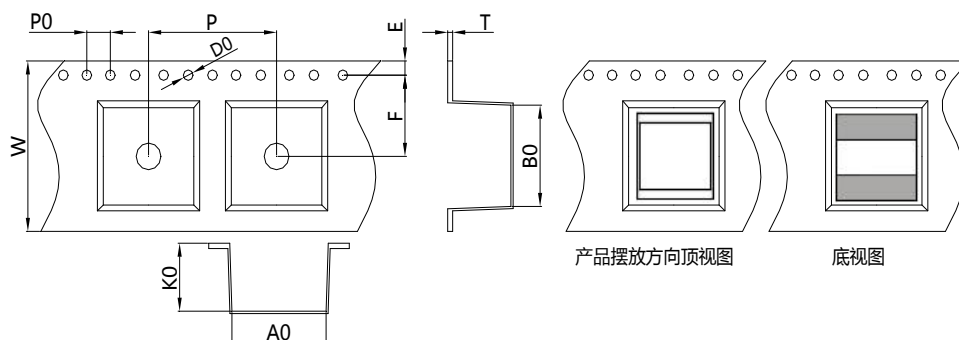
2.包装尺寸：

☐ 13" 盘

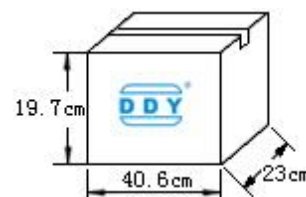
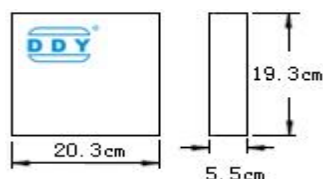
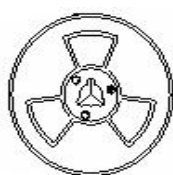
☒ 7" 盘



	13" 盘	7" 盘
A	$\Phi 330 \pm 2.0$	$\Phi 178 \pm 2.0$
D	12.5	



Item	W	A0	B0	K0	P	T	E	F	D0	P0
(mm)	12.0±0.3	2.9±0.2	3.6±0.2	2.0±0.2	4.0±0.1	0.2±0.1	1.75±0.1	5.50±0.1	1.50±0.1	4.00±0.2



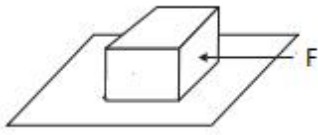
每卷	2000	Pcs
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每盒	4卷,共	8000	Pcs
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每箱	6盒,共	48000	Pcs
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8. RELIABILITY TEST

No.	TEST ITEM	SPECIFICATION	TEST CONDITION
1	High temperature Storage test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (N: Follow the product specification for the setting.) Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours
2	Low temperature Storage test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (M: Follow the product specification for the setting) Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours.
3	Humidity test	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	Temperature: $40 \pm 2^{\circ}\text{C}$, Humidity: $93 \pm 3\% \text{RH}$ Time : 96 ± 2 hours Place the samples for one hour at room temperature and test them within two hours
4	Solderability test	Terminals must have 95% minimum solder coverage	1. Dip pads in flux then dip in solder pot at $245 \pm 5^{\circ}\text{C}$ for 5 second. 2. Solder: lead free 3. Flux: rosin flux
5	Heat endurance of flow soldering	1. No significant defects in appearance. 2. $\Delta L/L \leq 10\%$ 3. $\Delta DCR/DCR \leq 10\%$	1. Refer to the above reflow curve and go through the reflow for twice. 2. The peak temperature : $260 + 0/-5^{\circ}\text{C}$
6	Vibration test	1. No significant defects in appearance. 2. No short and no open.	Apply frequency 10~55~10Hz and amplitude 1.5mm, 1 min/cycle in X Y and Z direction for 2 hours each. (total 6 hours)
7	Terminal strength push test	1. Applied force: 10N Duration: 10sec 2. Solder paste thickness: 0.12mm 3. Meet the above requirements without any loose termina	Solder the test samples to the PCB through 245°C reflow, apply a standard force on the side of the test samples for 10 seconds. 



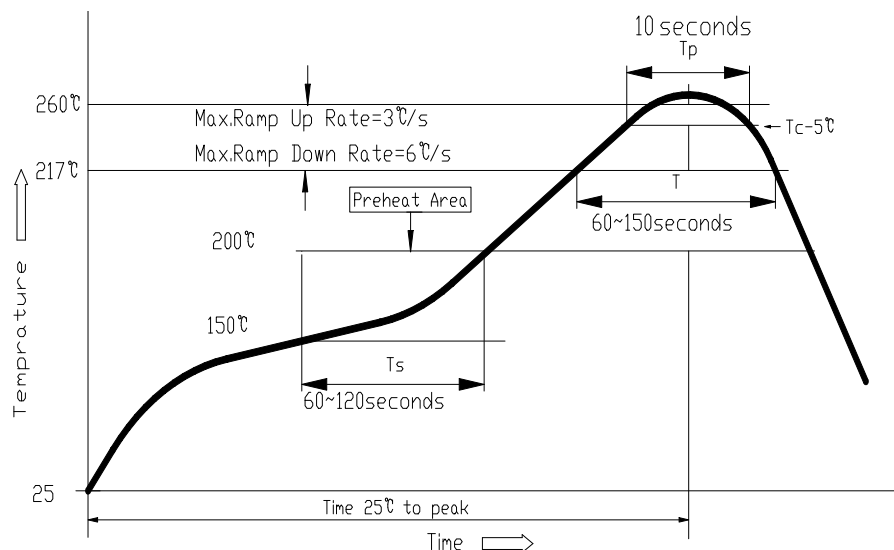
9. SOLDERING CONDITIONS

Applicable soldering process to the products is refl.

9.1 Soldering Materials

- (1) Solder: Sn-3.0Ag-0.5Cu
- (2) Flux: Use rosin-based flux, but not strongly acidic flux (with chlorine exceeding 0.2wt%). Do not use water-soluble flux.

9.2 Reflow Soldering Profile



9.3 Soldering Iron

Reworking with electric soldering iron must preheating at 150°C for 1 minute is required, and do not directly touch the core with the tip of the soldering iron. The reworking soldering conditions are as follows.

- ① Temperature of soldering iron tip: 350°C;
- ② Soldering iron power output: $\leq 30W$;
- ③ Diameter of soldering iron end: $\leq 1.0mm$;
- ④ Soldering time: $< 3s$



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