



德砚电子

DE YAN DIAN ZI

# 一体成型功率电感

## *Data Sheet*

**RoHS**



**ISO 9001**  
质量管理体系认证



**ISO 14001**  
环境管理体系认证

Shenzhen Deyan Electronics Co., Ltd

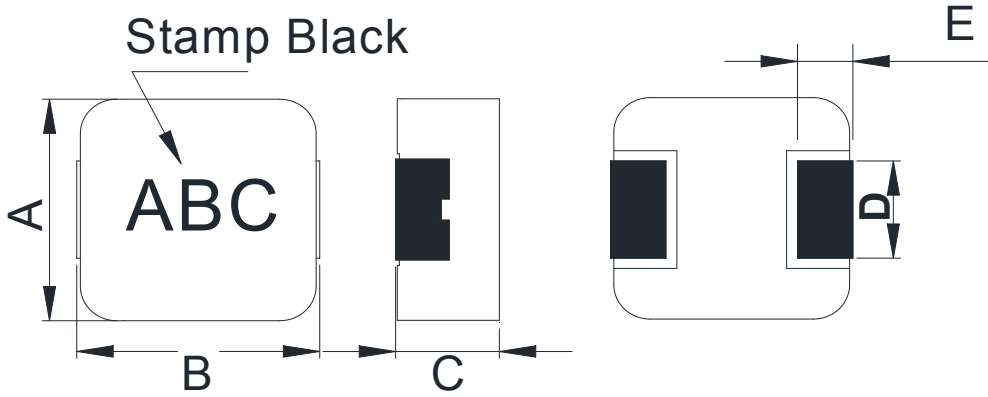
# \*SPECIFICATION\*

			<b>AMENDMENT RECORD</b>			
SYMBOL	DATE	PAGE	CONTENTS	DWN. BY	CHK. BY	APP. BY
				叶枫	李林	谢东

# \*SPECIFICATION\*

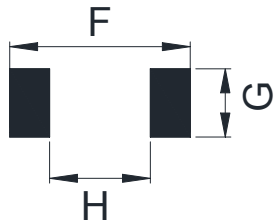
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## 1. DIMENSIONS (UNIT : mm)



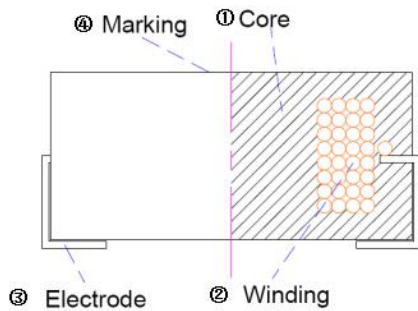
A	B	C	D	E
4.1±0.25	4.6±0.2.	2.0 Max.	1.5±0.30	1.0±0.50

## 2. RECOMMENDED LAND PATTERN (UNIT: mm)



F	5.2 Ref.
G	2.5 Ref.
H	2.2 Ref.

## 3. STRUCTURE



No.	PARTS	MATERIAL
①	CORE	Alloy powder
②	WIRE	Self bonding polyamide-imide enameled Copper Wire
③	ELECTRODE	Cu
④	MARKING	INK

APPROVAL	CHECK	DESIGN	

# \*SPECIFICATION\*

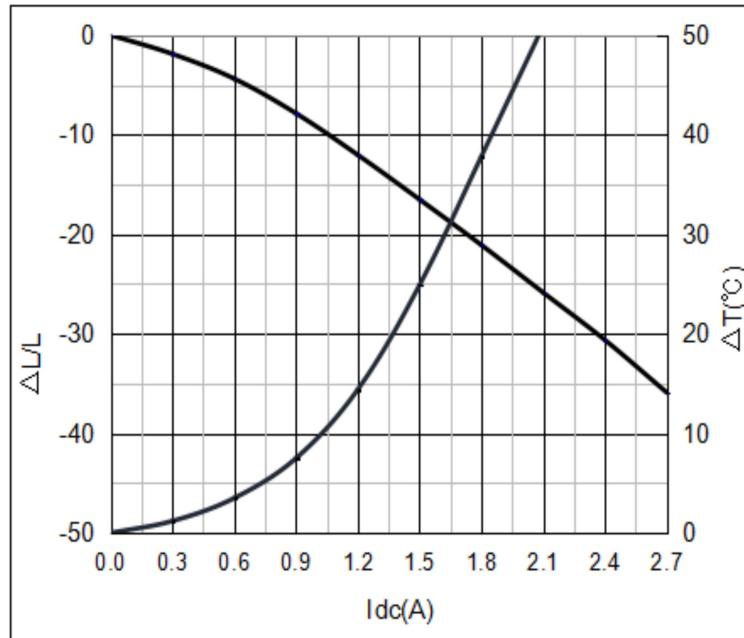
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## 4.CHARACTERISTICS

No.	P/N.	Inductance ( $\mu\text{H}$ )	Stamp	D.C.R. (m $\Omega$ ) Max.	Saturation Current (A)		Temperature rise current( $\Delta T \leq 40^\circ\text{C}$ ) (A).	
					Typ	MAX	Typ	MAX
01	D0420HP-100MT	10 $\pm$ 20%	100	258	2.0	1.7	1.6	1.35

- \* Testing instrument: Inductance HP 4284A or equivalent at 100KHz /1V..  
D.C.R : TH2512B or equivalent. (Ta= 25 $^\circ\text{C}$ )  
Saturation current: WK 3260B+3265B or equivalent.
- \* Saturation current: indicates the current when the inductance decrease to approximately 70% of initial value. (Ta=25 $^\circ\text{C}$ )
- \* The temperature rise current value is the DC current value having temperature increase up to approximately 40 $^\circ\text{C}$ (Ta=25 $^\circ\text{C}$ )
- \* Absolute maximum voltage 30VDC

100| DC Bias & Temperature Characteristics



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## 5. GENERAL CHARACTERISTICS

\* STANDARD TESTING CONDITIONS:

UNLESS OTHERWISE SPECIFIED, THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MEASUREMENTS AND TESTS ARE AS FOLLOWS: AMBIENT TEMPERATURE: 15°C~35°C.

RELATIVE HUMIDITY : 25% ~85%. AIR PRESSURE : 86kPa ~106kPa.

IF THERE IS ANY DOUBT ABOUT THE RESULTS, MEASUREMENT SHALL BE MADE WITHIN THE FOLLOWING LIMITS: AMBIENT TEMPERATURE: 20°C±1°C. RELATIVE HUMIDITY: 63% ~67%.

AIR PRESSURE : 86kPa ~106kPa.

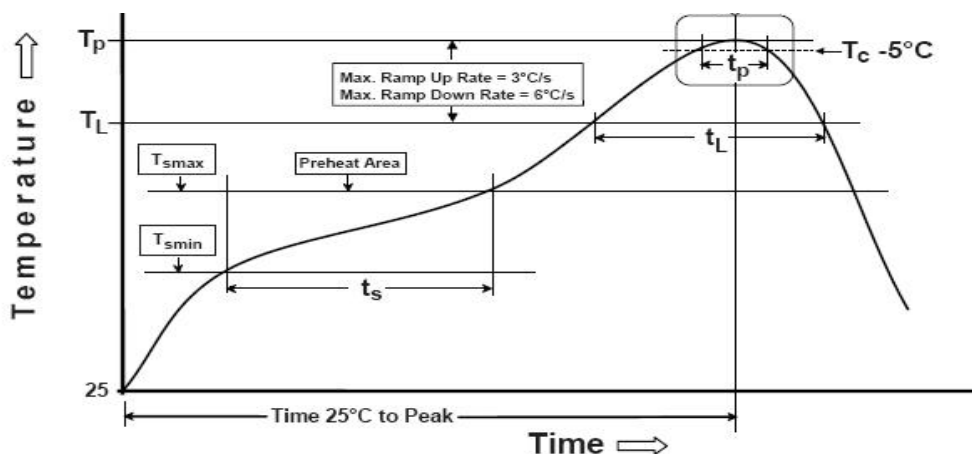
No.	ITEMS	CONDITIONS	SPECIFICATION
1	OPERATION TEMPERATURE  STORAGE TEMPERATURE		-40 ~ + 125°C (INCLUDING COIL TEMPERATURE RISE) -40 ~ + 125°C
2	TEMPERATURE COEFFICIENT	-30 ~ +105°C	0 ~ 2000 ppm/°C
3	FIXING STRENGTH	SAMPLE IS PUSHED IN THREE DIRECTIONS OF X, Y AND Z WITH FORCE OF 5. 0N FOR 10±5 SECONDS. AFTER SOLDERING BETWEEN COPPER PLATE AND ELECTRODES.	NO ELECTRODE DETACHMENT.
4	RESISTANCE TO SOLDERING HEAT TEST	REFER TO THE SPEC "STD-001NP".	NO MECHANICAL BREAKAGE. DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
5	SOLDERABILITY TEST	IMMERSE THE ELECTRODE IN FLUX FOR 5 SECONDS. THEN DIP THE ELECTRODE INTO A SOLDERING BATH OF 245±5°C FOR 2±0.5 SECONDS.	OVER 95% OF THE SURFACE BEING IMMersed SHALL BE COVERED WITH NEW SOLDER UNIFORMLY.
6	VIBRATION TEST	AMPLITUDE: 1.5mm P-P FREQUENCY:10~55~10Hz (1 MINUTE PER CYCLE) DURATION: 1 HOUR IN EACH OF X, Y, Z AXIS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
7	HUMIDITY TEST	TEMPERATURE: 40°C±2°C HUMIDITY: 90%~95%RH DURATION: 96±4 HOURS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
8	THERMAL SHOCK TEST	20 CYCLES OF +105°C FOR 30 MINUTES, -40°C FOR 30 MINUTES. CHARACTERISTICS ARE MEASURED AFTER THE AMBIENT AIR EXPOSURE OF 1 HOUR	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
9	HIGH TEMPERATURE STORAGE TEST	TEMPERATURE: 125°C±2°C DURATION: 96±4 HOURS	
10	LOW TEMPERATURE STORAGE TEST	TEMPERATURE: -40°C±3°C DURATION: 96±4 HOURS.	

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## 6. Reflow profile for SMT components



Reflow is referred to standard IPC/ JEDEC J-STD-020D

Profile Feature		Lead(Pb) Free solder
Preheat and soak	·temperature Min.(Tsmmin)	150°C
	·temperature Max.(Tsmmax)	200°C
	·time(Tsmmin to Tsmmax)(ts)	60-120 Seconds
Average ramp up rate Tsmmax to Tp		3°C/Second Max.
Liquidous temperature (TL)		217 °C
Time (TL) maintained above TL		60-150 seconds
Peak package body temperature (Tp)		<b>Table2</b>
Time (tp)* within 5 °C of the specified classification temperature (Tc)		30* seconds
Average Ramp-down rate (Tp to TL)		6 °C/second max
Time 25 °C to peak temperature		8 minutes max.

**Table2. Pb-Free Process - Classification Temperatures (Tc)**

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350~2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260°C	260°C	260°C
1.6mm- 2.5mm	260°C	250°C	245°C
>2.5 mm	250°C	245°C	245°C

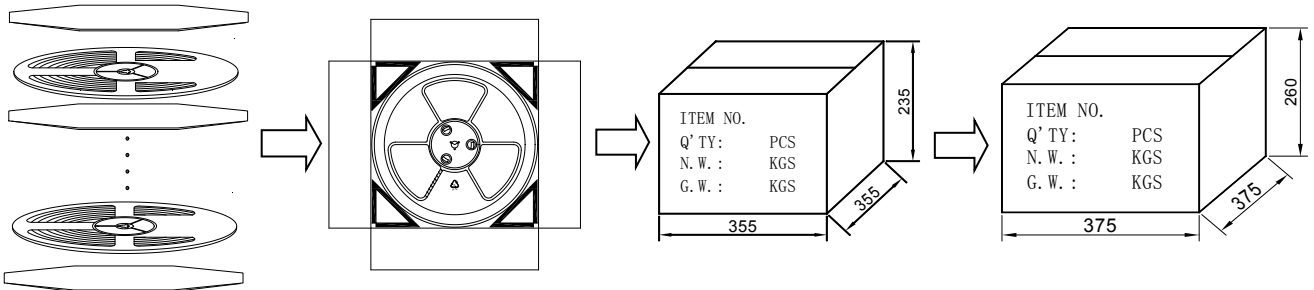
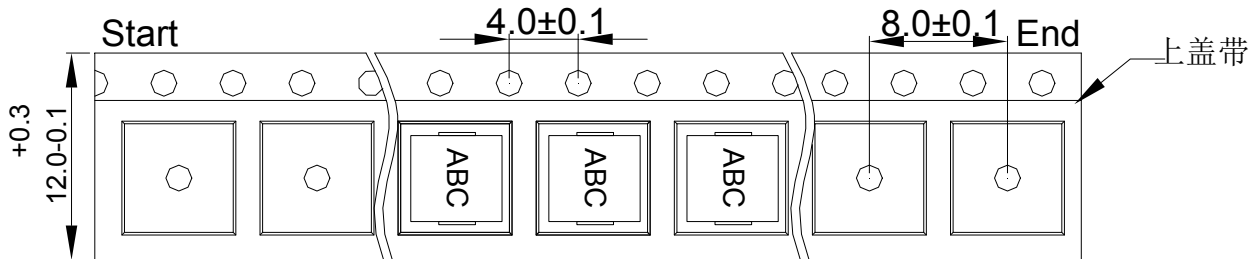
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## 7. PACKING

REFER TO STANDARD PACKING DRAWING. 3000PCS/R



REEL	3000PCS
BOX	30000PCS

## 8. NOTE

SOLDERING TIN PERIOD OF VALIDITY: SIX MONTHS  
 STORAGE TEMPERATURE:  $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$   
 COMPARATIVELY HUMIDITY: 35%--70%

APPROVAL	CHECK	DESIGN	