信 昌 電 子 陶 瓷 股 份 有 限 公 司
PROSPERITY DIELECTRICS CO., LTD.

SPECIFICATION FOR APPROVAL

CUSTOMER	益力嘉
CUST. PART NO.	
CUST. DOC. REV.	
DESCRIPTION	CHIP INDUCTORS (RoHS+H.F.)
SAMPLE LOT NO.	S201911-0195
PART NO.	0805F-4R7K-DLRH01
DOC. REV.	ORIG
DATE	2019/11/26

Once you approve this part, please sign and return this page to the following marked location.

Customer Signature:_____ **Date:**_____

☐This part currently development section.

☐Production line can produce this series of products.

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TESTED BY	CHECKED BY	APPROVED BY
Martin Wu	*Adam Lee*	*K.C. Tseng*

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CUSTOMER	CUSTOMER P/N	REV.	SPL. LOT NO.	
益力嘉		-	S201911-0195	
PART NAME	**PART NO.**	**REV.**	**DATE OF ISSUE**	**Q'TY**
CHIP INDUCTORS (RoHS+H.F.)	**0805F-4R7K-DLRH01**	**ORIG**	**2019/11/26**	**5 PCS**

ENGINEERING CHANGE NOTICE – RECORD

REVISION NO.	REVISION DESCRIPTION	AUTHOR	DATE	REMARK
ORIG		*Adam Lee*	2019/11/26	

SPECIFICATION FOR APPROVAL

※This is a RoHS and REACH compliant product whose related documents are available on request.
※Graphic is only for dimensionally application.

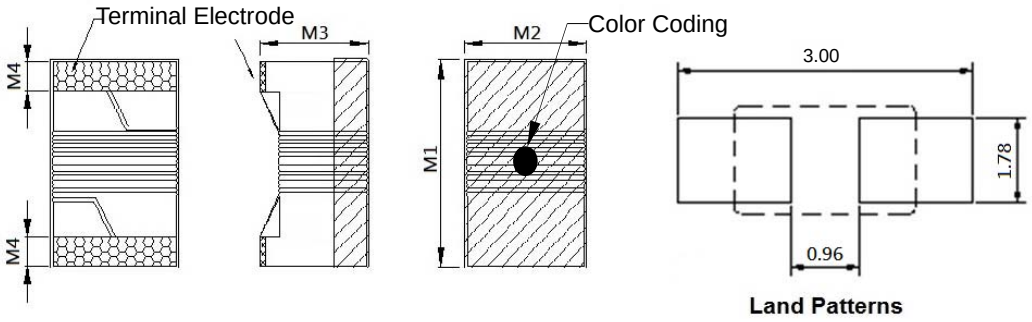
1. SCOPE: THIS SPECIFICATION APPLIES TO WIRE WOUND CHIP INDUCTORS.

2. PART NUMBERING IDENTIFICATION

0805 F - □□□ □ - D LRH 01

- **SERIAL NO.**
- **RoHS + H.F.**
- **SPECIAL CONTROL CODE**
- **TOLERANCE**
- **INDUCTANCE**
- **MATERIAL**
- **DIMENSIONS**

3. MECHANICAL DIMENSION



UNIT: mm

	DIM.	TOL.
M1	2.20	±0.2
M2	1.45	±0.2
M3	1.30	±0.1
M4	0.44	REF.

4. RATING TEMPERATURE

OPERATING TEMPERATURE RANGE: -40℃~+125℃ (Including self - temperature rise)
STORAGE TEMPERATURE RANGE: -40℃~+125℃ (on board)

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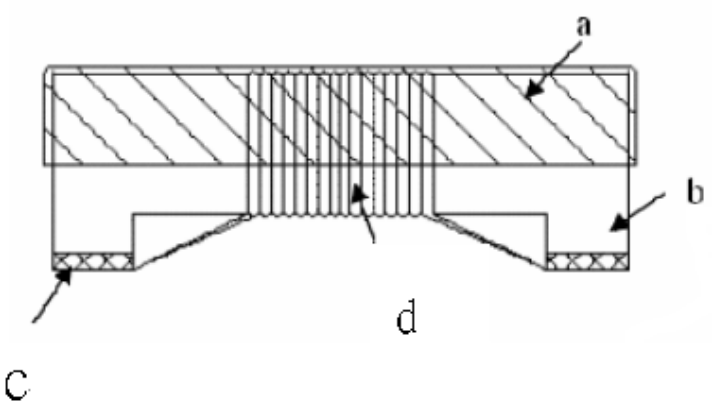
5. STRUCTURE



6. MATERIAL LIST

ITEM	MATERIAL CATEGORY	MATERIAL TYPE
a	Upper Plate	UV Glue
b	Core	Ferrite Core
c	Termination	Ag/Ni/Sn
d	Wire	Enameled Copper Wire

7. TEST INSTRUMENT

7-1. Inductance、Q: Agilent-4291, Agilent-4287, Agilent-E4991A, Agilent-4192, Agilent-4285

7-2. SRF: Agilent-4291, Agilent-E4991A, Agilent-4192

7-3. DC Resistance: Agilent-34420A

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8. ELECTRICAL SPECIFICATION

Part number	Inductance (μH)	Inductance Tolerance	Test Frequency (V/MHz)	Q TYP.	Test Frequency (MHz)	SRF (MHz) TYP.	DC Resistance (Ω) ±30%	Idc (mA) TYP.	Irms (mA) TYP.
0805F-4R7K-DLRH01	4.7	K	0.5/7.9	14	7.9	51	0.43	520	840

NOTE:

1. Tolerance: K:±10%

2. Idc: Applied the current to coils, the inductance change shall be less than 10% to initial value.

3. Heat Rated Current (Irms) will cause the coil temperature rise ΔT≦25℃ without core loss.

4. MSL: Level 1

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9. RELIABILITY PERFORMANCE

Item	Performance	Test Condition
Life Test	Appearance: No damage. Impedance: within ±15% of initial value Inductance: within ±10% of initial value Q: Shall not exceed the specification value. RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles) Temperature: 125±2℃ Applied current: rated current Duration: 1000±12hrs Measured at room temperature after placing for 24±2 hrs.
Load Humidity		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles) Humidity: 85±2% R.H. Temperature: 85℃±2℃ Duration: 1000hrs Min. with 100% rated current Measured at room temperature after placing for 24±2 hrs.
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles) 1. Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs. 3. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles) Condition for 1 cycle Step1: -40±2℃ 30±5min Step2: 25±2℃ ≦0.5min Step3: 125±2℃ 30±5min Number of cycles: 500 Measured at room fempraturc after placing for 24±2 hrs.
Vibration		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles) Oscillation Frequency: 10～2K～10Hz for 20 minutes Equipment: Vibration checker Total Amplitude: 1.52mm ±10% Testing Time: 12 hours (20 minutes, 12 cycles each of 3 orientations)

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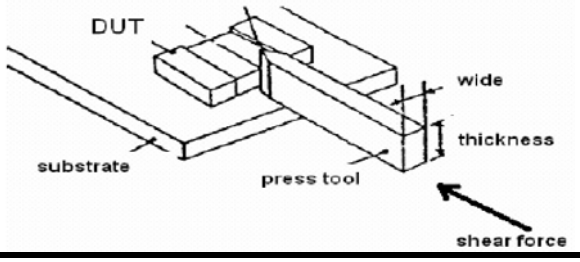
<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance: No damage.
Impedance: within ±15% of initial value
Inductance: within ±10% of initial value
Q: Shall not exceed the specification value
RDC: within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth: >=0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td>
<table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
</td></tr>
<tr><td>Solder ability</td><td>More than 95% of the terminal electrode should be covered with solder</td><td>Preheat: 150℃,60sec.
Solder: Sn96.5% Ag3% Cu0.5%
Temperature: 245±5℃
Flux for lead free: Rosin. 9.5%
Dip time: 4±1sec
Depth: completely cover the termination</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance: No damage.
Impedance: within ±15% of initial value
Inductance: within ±10% of initial value
Q: Shall not exceed the specification value
RDC: within ±15% of initial value and shall not exceed the specification value</td><td>Depth: completely cover the termination
<table>
<tr><th>Temperature (°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020DClassification Reflow Profiles)
With the component mounted on a PCB with the device to be tested, apply a force (>0805: 1kg, <=0805:0.5kg) to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.
 
</td></tr>
</table>

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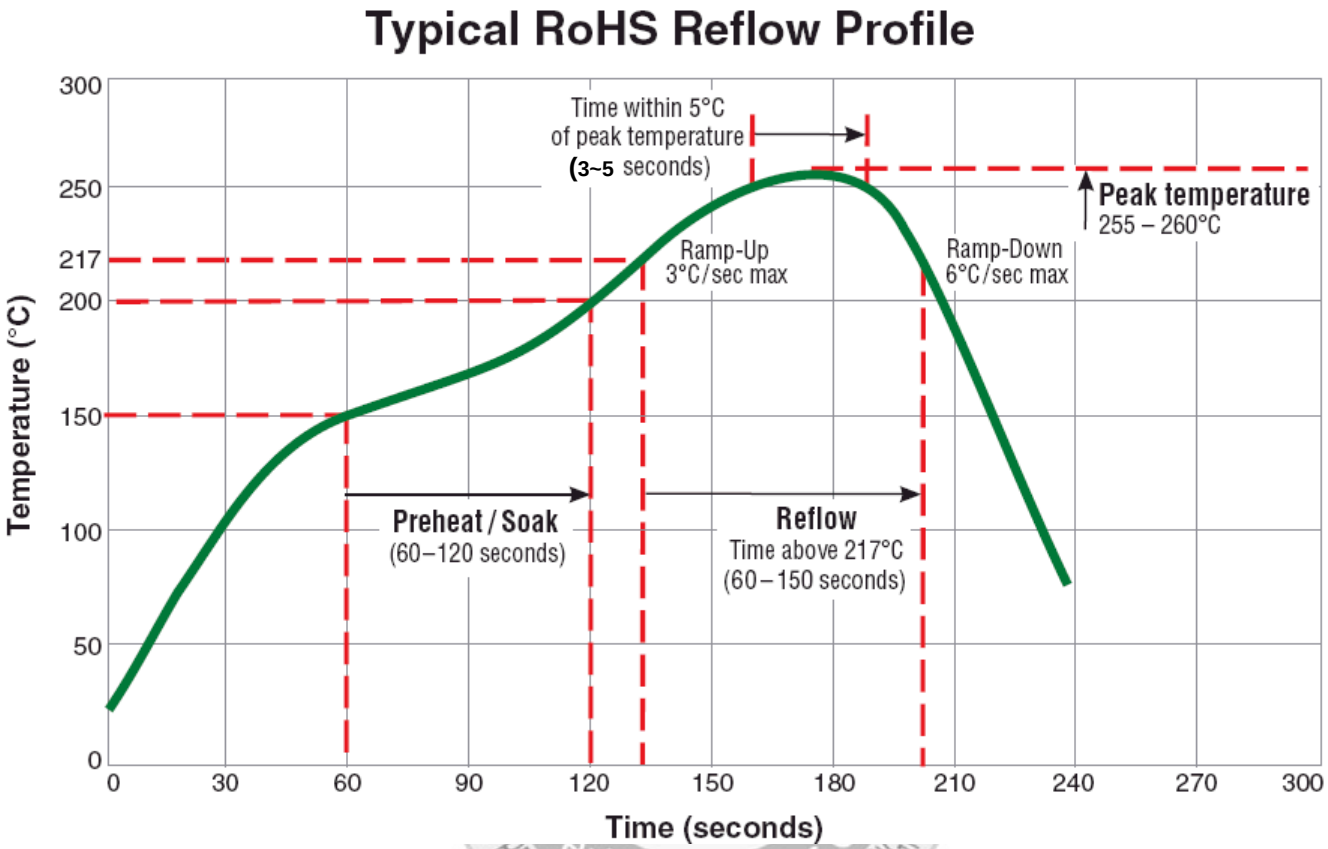
11. TYPICAL RoHS REFLOW PROFILE



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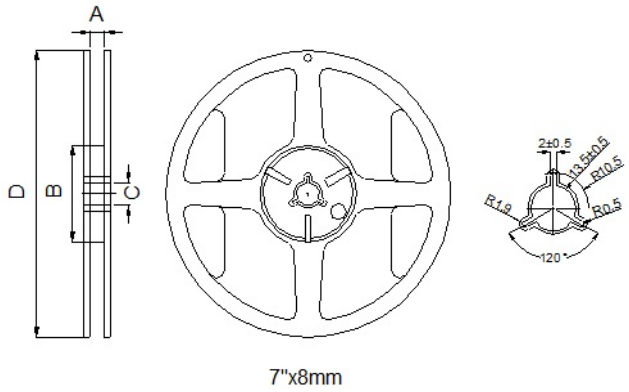
12. PACKING

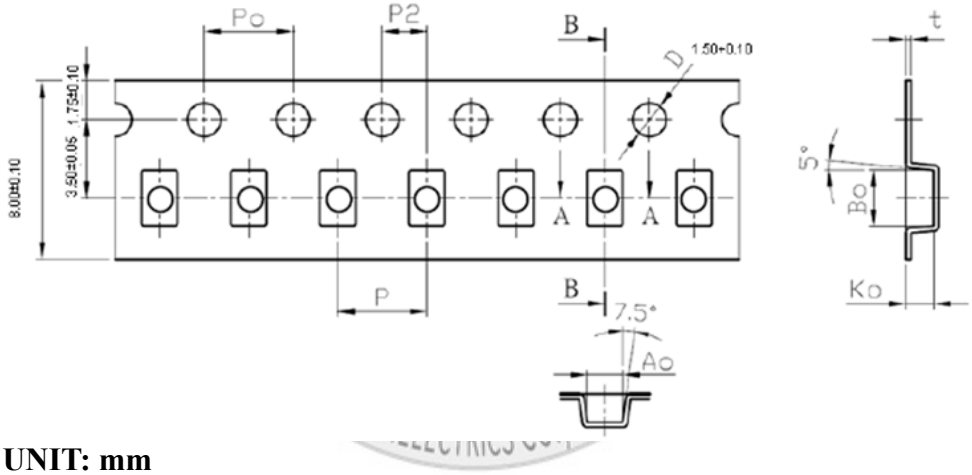
12-1 Reel Dimension



UNIT: mm

A	B	C	D
9.0±0.5	60±2	13.5±0.5	178±2

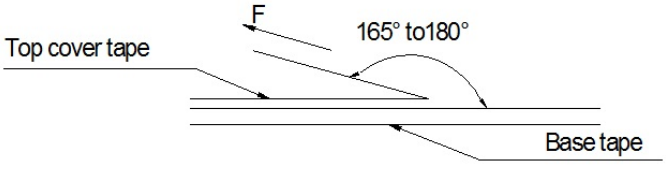
12-2 Tape Dimension



UNIT: mm

P	Po	P2	Bo	Ao	Ko	W	t
4.00±0.10	4.00±0.10	2.00±0.05	2.50±0.10	1.60±0.10	1.55±0.10	8.00±0.10	0.22±0.05

12-3 Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

12-4 Packaging Quantity: 2000 Chip/Reel