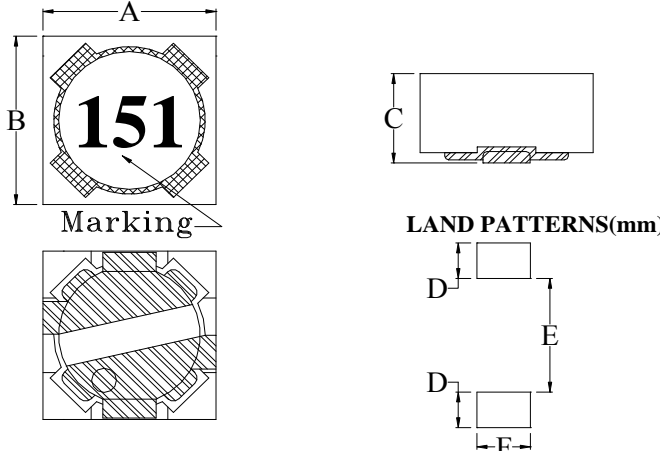




# SPECIFICATION FOR APPROVAL

COMMODITY	SMD POWER COIL	SPEC NO.	SP-060720042
ITEM	JPRH 0704-151M <span style="border: 1px solid black; padding: 2px;">Green</span>	版本：A	表單編號：QRRD-01-02

(1) DIMENSION: (UNIT: mm)		DIM.	TOL.
	A	7.3	±0.2
	B	7.3	±0.2
	C	4.5	Max.
	D	1.6	REF.
	E	4.8	REF.
	F	2.2	REF.
	G		
	H		
	I		
	J		




(2) ELECTRICAL CHARACTERISTIC	TEST INSTRUMENTS.
INDUCTANCE	150 ± 20%    μH
TEST FREQUENCY	1    KHz
TEST VOLT	0.25    V
RDC	0.88 (max)    mΩ
IDC	0.46 (max)    A
	<input checked="" type="checkbox"/> AGILENT 4294A Precision Impedance Analyzer. <input type="checkbox"/> AGILENT 4285A Precision L.C.R. Meter. <input type="checkbox"/> HP-4286A RF L.C.R. Meter. <input checked="" type="checkbox"/> ZENTECH 3302 Automatic Components Analyzer. <input type="checkbox"/> ZENTECH 101 L.C.R. Meter. <input type="checkbox"/> WAYNE KERR 6420 Precision Impedance Analyzer. <input checked="" type="checkbox"/> ZENTECH 1320 BIAS CURRENT. <input checked="" type="checkbox"/> ZENTECH 502AC Resistance Meter. <input type="checkbox"/> ADEX AX-1155B DC Low Ohm Meter.

**REMARK :**

1. Inductance drop = 25% typ at IDC.
2. ΔT = 40°C rise typ at IDC.

PURCHASER CONFIRMED	APPROVED	CHECKED	DRAWN
			

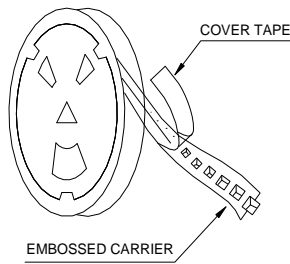
# SPECIFICATION FOR APPROVAL

COMMODITY	SMD POWER COIL	SPEC NO.	SP-060720042
ITEM	JPRH 0704-151M <span style="border: 1px solid black; padding: 2px;">Green</span>	版本：A	表單編號：QRRD-01-02
<b>(3) Material List</b>			
NO	ITEM	MATERIAL	NOTE
1	CORE	DR 5.3*3.6 & RI 7.3*3.5*5.7 Or other's equivalent	Black
2	BASE	C5191 other's equivalent	
3	WIRE	SFBW Or other's equivalent	155°C CLASS
4	SOLDER	100H Or other's equivalent	Silver
5	EPOXY	6020H-6-9(NH) / S-9001A-6B Or other's equivalent	Black
6	INK	SMD-48C Or other's equivalent	Black
7	Protective tape	MYLAR TAPE	Yellow
		Heat Shrinkable tube	Black
REMARK :			
PURCHASER CONFIRMED :		APPROVED	CHECKED
			
			

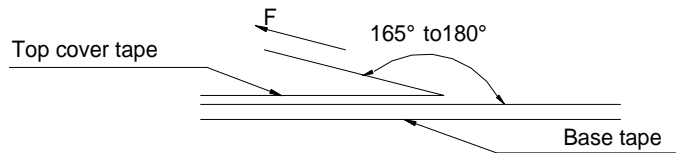


## Packaging Information

### • Tearing Off Force



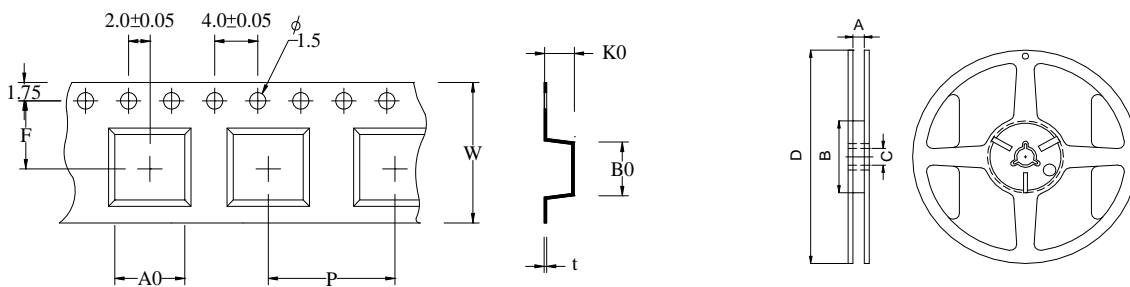
★The force for tearing off cover tape is 10 to 120 grams in the arrow direction under the following conditions.



### • DIMENSIONS & RECOMMENDED PATTERN

TYPE	DIMENSIONS / SIZE (mm)			PATTERN / SIZE (mm)		
	A	B	C	D	E	F
JPRH 0704	7.3 ± 0.2	7.3 ± 0.2	4.50 Max.	1.6	4.8	2.2

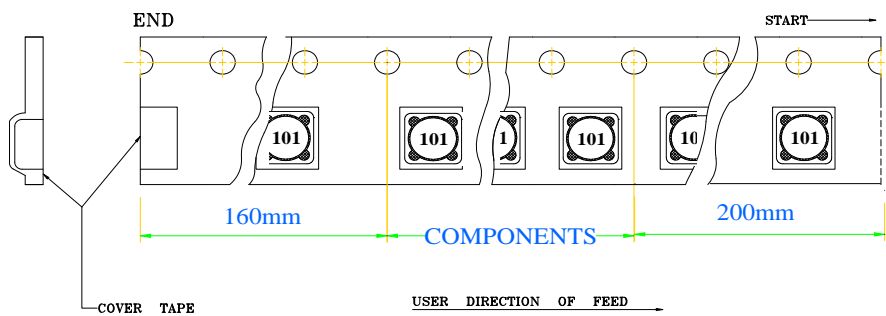
### • TAPE DIMENSION & REEL DIMENSION



REEL DIMENSION

TYPE	TAPE / SIZE (mm)							REEL 13"×16mm			
	Ao	Bo	Ko	P	F	W	t	A	B	C	D
0704	7.7 ± 0.1	7.7 ± 0.1	4.7 ± 0.1	12.0 ± 0.1	7.5 ± 0.1	16 ± 0.3	0.35 ± 0.05	16.5 ± 0.2	100 ± 0.5	13.2 ± 0.3	330 ± 1.0

### • PACKAGING QUANTITY

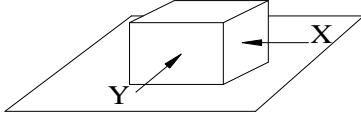
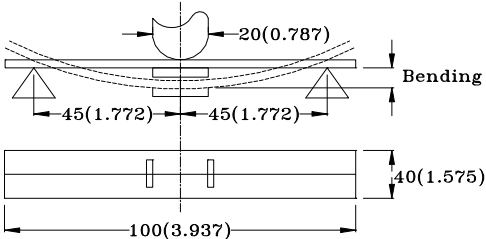


Type	JPRH 0704
Q'TY/Reel	1000

## Pb-FREE PRODUCTS 無鉛產品

No	Item [項目]	Test Method & Conditions [試驗方法、條件]	Specification After Test [試驗後規格]																																		
<b>A . Mechanical Characteristics 機械特性</b>																																					
1	<b>Operating Temperature</b> 工作溫度	- 40 °C ~ + 125 °C (Including self - temperature rise) 含自身發熱溫度																																			
2	<b>Storage temperature and Humidity range</b> 儲存溫度濕度	+ 5 ~ +40°C ; 60 to 70% RH	<ul style="list-style-type: none"> <li>· on Tape &amp; Reel</li> <li>· 在捲帶包裝</li> </ul>																																		
3	<b>Solder Heat Resistance</b> 抗焊錫熱特性	<ul style="list-style-type: none"> <li>· Solder : M705-GRN360-K2-V</li> <li>· Peak-temp.hold time : 4 sec</li> <li>· Pre-heat , Solder Temperature &amp; Dip</li> <li>Reflow soldering time as follow :</li> </ul>	<ul style="list-style-type: none"> <li>· No Damage and No Abnormal on Surface</li> <li>· Inductance : Within ±10% of Initial Value</li> <li>· More than 75% of the terminal electrode should be covered and uniformity with solder</li> <li>· 產品表面不能被破壞及不正常的情形</li> <li>· 電感值：初始值的±10%以內</li> <li>· 端子吃錫需均勻，吃錫面積75%以上</li> </ul>																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Item</th> <th rowspan="2">mark</th> <th colspan="2">products</th> </tr> <tr> <th>size ≥ 350mm<sup>3</sup> or thickness ≥ 2.5mm</th> <th>size &lt; 350mm<sup>3</sup> or thickness &lt; 2.5mm</th> </tr> </thead> <tbody> <tr> <td>Temperature rise gradient</td> <td></td> <td colspan="2" style="text-align: center;">3°C/sec (max)</td> </tr> <tr> <td>Heating time</td> <td>Tsoak</td> <td colspan="2" style="text-align: center;">50s ~ 150s</td> </tr> <tr> <td>Heating temperature</td> <td></td> <td colspan="2" style="text-align: center;">120°C ~ 180°C</td> </tr> <tr> <td>Time over 217°C</td> <td>t1</td> <td style="text-align: center;">60 sec</td> <td style="text-align: center;">90 sec</td> </tr> <tr> <td>Time within 5°C of actual peak temperature</td> <td>t3</td> <td style="text-align: center;">10~30 sec</td> <td style="text-align: center;">10~30 sec</td> </tr> <tr> <td>Peak temperature</td> <td>Tpeak</td> <td style="text-align: center;">250 ( +0 / -5 °C )</td> <td style="text-align: center;">260 ( +0 / -5 °C )</td> </tr> <tr> <td>Time 25°C to peak Temperature</td> <td></td> <td colspan="2" style="text-align: center;">6 minutes max.</td> </tr> </tbody> </table> <p>*The determination, first primarily determines by the size, then determines the altitude.</p>				Item	mark	products		size ≥ 350mm <sup>3</sup> or thickness ≥ 2.5mm	size < 350mm <sup>3</sup> or thickness < 2.5mm	Temperature rise gradient		3°C/sec (max)		Heating time	Tsoak	50s ~ 150s		Heating temperature		120°C ~ 180°C		Time over 217°C	t1	60 sec	90 sec	Time within 5°C of actual peak temperature	t3	10~30 sec	10~30 sec	Peak temperature	Tpeak	250 ( +0 / -5 °C )	260 ( +0 / -5 °C )	Time 25°C to peak Temperature		6 minutes max.	
Item	mark	products																																			
		size ≥ 350mm <sup>3</sup> or thickness ≥ 2.5mm	size < 350mm <sup>3</sup> or thickness < 2.5mm																																		
Temperature rise gradient		3°C/sec (max)																																			
Heating time	Tsoak	50s ~ 150s																																			
Heating temperature		120°C ~ 180°C																																			
Time over 217°C	t1	60 sec	90 sec																																		
Time within 5°C of actual peak temperature	t3	10~30 sec	10~30 sec																																		
Peak temperature	Tpeak	250 ( +0 / -5 °C )	260 ( +0 / -5 °C )																																		
Time 25°C to peak Temperature		6 minutes max.																																			
<b>Reflow soldering temperature profile</b>																																					
<p>The graph illustrates the reflow soldering temperature profile. The vertical axis represents Temperature in degrees Celsius, and the horizontal axis represents Time in seconds. The profile starts at a constant 25°C, then rises linearly to a plateau at temperature Tsoak. From Tsoak, it rises linearly to a peak temperature Tpeak. The time taken to reach Tpeak is labeled t1. The time spent within 5°C of the peak temperature is labeled t3. The total time from the start at 25°C to the peak is labeled 'Time 25°C to peak'. The cooling phase is shown as a linear decrease from Tpeak.</p>																																					

## Pb-FREE PRODUCTS 無鉛產品

No	Item [項目]	Test Method & Conditions [試驗方法、條件]	Specification After Test [試驗後規格]
<b>A . Mechanical Characteristics 機械特性</b>			
4	<b>Solderability</b> 焊錫性	<ul style="list-style-type: none"> <li>· Solder : M705-GRN360-K2-V</li> <li>· Solder Temp : 245°C ± 5°C</li> <li>· Dip time : 5 sec</li> <li>· 錫 : M705-GRN360-K2-V</li> <li>· 錫爐溫度 : 245°C ± 5°C</li> <li>· 時間 : 5秒</li> </ul>	<ul style="list-style-type: none"> <li>· More than 90% of the terminal electrode should be covered and uniformity with fresh solder.</li> <li>· 吃錫面積需90%以上且需均勻</li> </ul>
5	<b>Terminal Strength</b> 端子強度	<ul style="list-style-type: none"> <li>· After soldering of X, Y withstanding as below conditions.</li> <li>· The terminal should not peel off.(Refer to figure as below)</li> <li>· Define : A=sectional area of terminal  <math>A \leq 8\text{mm}^2</math> force <math>\geq 0.5\text{kg}</math>, time : 30sec  <math>8\text{mm}^2 &lt; A \leq 20\text{mm}^2</math> force <math>\geq 1\text{kg}</math>, time : 10sec  <math>20\text{mm}^2 &lt; A</math> force <math>\geq 2\text{kg}</math>, time : 10sec</li> <li>· 在銲接X,Y 後,所承受條件情況(如下圖)</li> <li>· 端點不可剝離(如下圖)</li> </ul> 	<ul style="list-style-type: none"> <li>· Terminal and body must not be damage or separate</li> <li>· 端子及本體不能被破壞或分離</li> </ul>
6	<b>Flexure Strength</b> 彎折強度	<ul style="list-style-type: none"> <li>· Put the component solder chip on a test board , and bend the board to 2mm then recovery to original point.</li> <li>Unit : mm (inch)</li> </ul>  <ul style="list-style-type: none"> <li>· 將待測品銲接到一測試基板上，測試基板彎曲度到2mm位置，然後回復至原點。</li> </ul>	<ul style="list-style-type: none"> <li>· No damage and no abnormal on chip body surface.</li> <li>· 產品不能有被破壞或不正常情形。</li> </ul>

## Pb-FREE PRODUCTS 無鉛產品

No	Item [項目]	Test Method & Conditions [試驗方法、條件]	Specification After Test [試驗後規格]
<b>B . Environmental Characteristics 環境試驗</b>			
7	<b>High Temp Resistance Test</b> 高溫負荷測試	<ul style="list-style-type: none"> <li>· Operate Temperature : 125°C ± 3°C</li> <li>· Applied Current : per spec.</li> <li>· Time : 96 Hrs</li> <li>· Measure after exposure in the room temperature for 4 to 24 Hrs.</li>   <li>· 動作溫度 : 125°C ± 3°C</li> <li>· 印加電流 : 依產品規格最大值</li> <li>· 時間 : 96 小時</li> <li>· 試驗完成後取出置於室溫4 - 24小時後進行測試</li> </ul>	<ul style="list-style-type: none"> <li>· Appearance : no damage</li> <li>· Inductance : Within ±10% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 電感值 : 初始值的±10%以內</li> </ul>
8	<b>Low Temperature Storage Test</b> 低溫放置測試	<ul style="list-style-type: none"> <li>· Temperature : -40°C ± 3°C</li> <li>· Time : 96 Hrs</li> <li>· Measure after exposure in the room temperature for 4 to 24 Hrs.</li>   <li>· 溫度 : -40°C ± 3°C</li> <li>· 時間 : 96 小時</li> <li>· 試驗完成後取出置於室溫4 - 24小時後進行測試</li> </ul>	<ul style="list-style-type: none"> <li>· Appearance : no damage</li> <li>· Inductance : Within ±10% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 電感值 : 初始值的±10%以內</li> </ul>
9	<b>Humidity Test</b> 耐濕試驗	<ul style="list-style-type: none"> <li>· Temperature : 40°C ± 2°C</li> <li>· Humidity : 95 ± 2% R.H.</li> <li>· Applied Current : per spec.</li> <li>· Time : 96 Hrs</li> <li>· Measure after exposure in the room temperature for 4 to 24 Hrs.</li>   <li>· 溫度 : 40°C ± 2°C</li> <li>· 濕度 : 95 ± 2% R.H.</li> <li>· 印加電流 : 依產品規格最大值</li> <li>· 時間 : 96 小時</li> <li>· 試驗完成後取出置於室溫4 - 24小時後進行試驗</li> </ul>	<ul style="list-style-type: none"> <li>· Appearance : no damage</li> <li>· Inductance : Within ±10% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 電感值 : 初始值的±10%以內</li> </ul>

## Pb-FREE PRODUCTS 無鉛產品

No	Item [項目]	Test Method & Conditions [試驗方法、條件]	Specification After Test [試驗後規格]
<b>B . Environmental Characteristics 環境試驗</b>			
10	<b>Temperature Cycling Test</b> 溫度循環試驗	<ul style="list-style-type: none"> <li>· One Cycle : +125°C/30Min -40°C/30Min</li> <li>· Cycle Times : 5 Cycle</li> <li>· Measure after exposure in the room temperature for 4 to 24 Hrs.</li> <li>· 1 週期 : +125°C/30Min -40°C/30Min</li> <li>· 週期 : 5次</li> <li>· 試驗完成後取出置於室溫4 - 24小時後進行測試</li> </ul>	<ul style="list-style-type: none"> <li>· Appearance : no damage</li> <li>· Inductance : Within ±10% of Initial Value</li> <li>· 外觀 : 不能有破損異常現象</li> <li>· 電感值 : 初始值的±10%以內</li> </ul>



