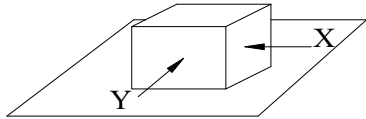
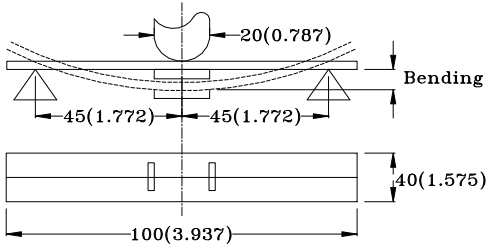


**Pb-FREE PRODUCTS 無鉛產品**

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																																		
2	<b>Storage temperature and Humidity range</b> 儲存溫度濕度	+ 5 ~ +40°C ; 60 to 70% RH																																		
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>· Impedance : Within ±20% 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>· 阻抗值：初始值的±20%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 rowspan="2" style="text-align: center;">Tsoak</td> <td colspan="2" style="text-align: center;">50s ~ 150s</td> </tr> <tr> <td>Heating temperature</td> <td colspan="2" style="text-align: center;">120°C ~ 180°C</td> </tr> <tr> <td>Time over 217°C</td> <td style="text-align: center;">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 style="text-align: center;">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 style="text-align: center;">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> <p style="text-align: center;"><b>Reflow soldering temperature profile</b></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.	
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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</li> <li>A ≤ 8mm<sup>2</sup>            force ≥ 0.5kg , time : 30sec</li> <li>8mm<sup>2</sup> &lt; A ≤ 20mm<sup>2</sup>    force ≥ 1kg , time : 10sec</li> <li>20mm<sup>2</sup> &lt; A            force ≥ 2kg , time : 10sec</li> </ul> <p>在鐸接X.Y 後,所承受條件情況(如下圖)</p> <p>端點不可剝離(如下圖)</p> 	<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>· 將待測品鐸接到一測試基板上, 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>

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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>· Impedance : Within ±20% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 阻抗值 : 初始值的±20%以內</li> </ul>
8	<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>· Impedance : Within ±20% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 阻抗值 : 初始值的±20%以內</li> </ul>
9	<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>· Impedance : Within ±20% of Initial Value</li>   <li>· 外觀 : 不能有破損異常現象</li> <li>· 阻抗值 : 初始值的±20%以內</li> </ul>

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No	Item [項目]	Test Method & Conditions [試驗方法、條件]	Specification After Test [試驗後規格]						
<b>C .Reel Tape 拉力試驗 ( Peeling Force Test )</b>									
<b>10</b>	<b>Peeling Force Test</b> 拉力試驗	<p>1、Experiments the applicable scope Per EIA-481 criteria, the procedures are suitable for Jantek packing process, which to provide the SMT production for end customers.</p> <p>2、Test condition            2-1 Test machine : Peel Force Tester : PF-2000            2-2 Test Pull velocity : 300mm±10mm/min            2-3 Test Pulling force angle : The Carrier tape and Cover tape makes an angle between 165° ~ 180°</p> <p>3、Test Method :            3-1 Fix the carrier tape on the experimental station base.            3-2 Take a section of the cover tape and clip it on the station jig.            3-3 Turn on the machine and set the specification in "DATA SET".            3-4 Start the tests.</p> <p>4、Test Specification :</p> <table border="1" data-bbox="628 1122 1286 1240" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Carries tape width</th> <th>Specification ( gr )</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">8~24mm</td> <td style="text-align: center;">10~120</td> </tr> <tr> <td style="text-align: center;">32~56mm</td> <td style="text-align: center;">10~130</td> </tr> </tbody> </table> <p>5、Test Cycle : Each kind of size specification in the production, every two weeks takes the 60cm experiment and the recording in the form.</p> <p>1、試驗適用範圍： 本試驗方法、程序依EIA-481規範適用於承達生產所使用的卷裝帶，供終端客戶自動插件機台所使用的成品。</p> <p>2、試驗條件：            2-1試驗機器：Peel Force Tester : PF-2000            2-2試驗拉力速度：300mm±10mm/每分鐘            2-3試驗拉力角度：上帶與載帶相對方向165° ~ 180°</p> <p>3、試驗方法：            3-1將試品載帶固定於試驗機台基座上            3-2將上帶取一小段並夾於試驗機台滑動夾具上            3-3開啟機器，並將所試驗規格設定於機器內            3-4開始進行試驗</p> <p>4、試驗規格</p> <p>5、試驗週期：            每種SIZE規格於生產中，每兩週取60cm試驗並記錄於表格。</p>	Carries tape width	Specification ( gr )	8~24mm	10~120	32~56mm	10~130	
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