APPROVAL SHEET

CUSTOMER'S NAME :

MODEL NUMBER : SPK-16M-5032
                16M 18PF 20PPM 5*3.2

SPEC RECORD NUMBER : SPK-980114-001

APPROVAL DATE : 2010-01-14

Confirmed Signature: 

Authorized Signature:
1. GENERAL SPECIFICATIONS

1.1 Holder Style : SPK-5032
1.2 Frequency : 16.000MHz
1.3 Mode Of Oscillation : Fundamental
1.4 Frequency tolerance at 25°C : +/- 20 PPM
1.5 Frequency Stability at (-20°C ~ +70°C) : +/- 20 PPM
1.6 Load Capacitance (CL) : 18pf
1.7 Static capacitance (CO) : 6PF max
1.8 Ts :
1.9 Resonance Resistance (RR) : 40 Ω
1.10 Drive Level : 10 uW max
1.11 Insulation Resistance : 10M ohm MIN
1.12 Aging : +/-3ppm/year
1.13 Operating temperature : -20 °C ~ +70 °C
1.14 Measurement Condition : the reference temperature shall be at 25°C ± 2°C
2. ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

The crystal shall meet electrical characteristics and suffer no physical damage after being subject to the following conditions.

2.1 Storage Temperature : -40°C - 85°C

2.2 Shock: drop freely from 75cm height 3 times on 30mm thick hard wooden board.

2.3 Vibration: frequency 10—55Hz
   Amplitude 1.5mm
   2 hours in each of 3 mutually perpendicular direction.

2.4 Solderability: temperature 235°C±5°C
   Immersion duration: 2±0.5 seconds

2.5 Resistance to soldering heat: temperature 260°C±5°C
   Immersion duration: 10±1 seconds.

2.6 Humidity: humidity 95%±3, temperature 40°C, 96 hours.

2.7 Seal: pressure :400Kpa, immersion duration : 30 minutes,
   Leakage rate<5 x10^-9 Pa m³/s

2.8 Terminal strength: pull:1.5kg, 30 seconds
   Bend:0.75kg, 90°C, 2 times.

2.9 Temperature cycle: lowest temperature –40°C, 30 minutes/cycle
   Highest temperature +85°C, 30 minutes/cycle
   10 cycles

2.10 Aging: temperature +85°C
   Duration 30 days.
3. Dimension

4. Marking: laser marking
5. Package and Label

5.1 Package dimension: 1 REEL : 1000 PCS

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>1.50</td>
<td>4.0</td>
<td>8.0</td>
<td>5.5</td>
<td>12.0</td>
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<table>
<thead>
<tr>
<th>G</th>
<th>H</th>
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<th>J</th>
<th>K</th>
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<th>M</th>
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<tbody>
<tr>
<td>2.5</td>
<td>13.0+/-0.2</td>
<td>21.0+/-1</td>
<td>60</td>
<td>180</td>
<td>17.65</td>
<td>1.4</td>
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</tbody>
</table>
.Carton Dimension (unit : mm)

1 reel = 1 Inner box

20 Inner boxes = 1 Carton

20kpcs = 1 Carton