

# TYPE WC 2.5X2.0 VOLTAGE CONTROLLED TEMPERATURE COMPENSATED CRYSTAL OSCILLATOR

**WC255BG0040.000000**

VER. 03

16-Apr-13

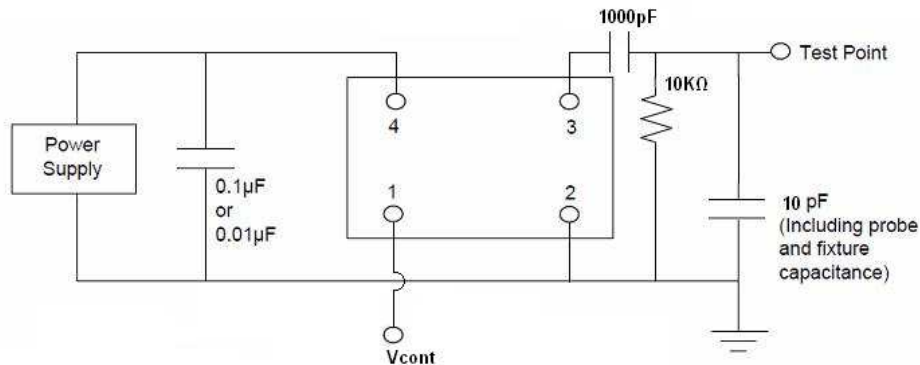
## ELECTRICAL SPECIFICATIONS

**SRe Part Number : WC255BG0040.000000**

| Item                           | Symbol          | Specifications   | Units  | Notes                                                                                                                      |
|--------------------------------|-----------------|------------------|--------|----------------------------------------------------------------------------------------------------------------------------|
| Nominal Frequency              | Fo              | 40.000000        | MHz    |                                                                                                                            |
| Operating Temperature Range    | TR              | -30 to +85       | °C     |                                                                                                                            |
| Storage Temperature Range      |                 | -40 to +85       | °C     |                                                                                                                            |
| Supply Voltage                 | V <sub>DD</sub> | +3.0 ± 5.0%      | V      |                                                                                                                            |
| Frequency Stability            | FT              | ± 1.0            | ppm    | vs. Temperature (Refer to the mid-point between minimum and maximum frequency values over the specified temperature range) |
| Frequency Stability            |                 | ± 0.2            | ppm    | vs. Load varied 10pF//10kΩ±10%                                                                                             |
| Frequency Stability            |                 | ± 0.1            | ppm    | vs. Supply Voltage varied V <sub>DD</sub> ±5% at 25°C                                                                      |
| Frequency Tolerance            |                 | ± 2.0            | ppm    | Max. After 2 times reflow (Refer to nominal frequency)                                                                     |
| Static Temperature Hysteresis  |                 | ± 0.6            | ppm    | Max.                                                                                                                       |
| Aging                          |                 | ±1               | ppm    | per year at 25°C                                                                                                           |
| Logic Type                     | LT              | Clipped Sinewave |        |                                                                                                                            |
| Supply Current                 | I <sub>DD</sub> | 2                | mA     | Max.                                                                                                                       |
| Start Up Time v.s Output Level |                 | 2.5              | msec   | Max, 90% of specified output level                                                                                         |
| Output Voltage                 |                 | 0.8 to 1.4       | Vp-p   |                                                                                                                            |
| Output Load Resistance         |                 | 10               | KΩ     | 9KΩ Min / 11KΩ Max                                                                                                         |
| Output Load Capacitance        |                 | 10               | pF     | 9pF Min / 11pF Max                                                                                                         |
| Harmonics                      |                 | -7               | dBc    | Max.                                                                                                                       |
| Phase Noise                    |                 | -130             | dBc/Hz | Max, at 1kHz offset                                                                                                        |
| Frequency Control Range        |                 | ±5 to ±15        | ppm    | V <sub>cont</sub> =0.65V to 2.65V                                                                                          |
| Linearity                      |                 | 10               | %      | Max                                                                                                                        |
| Input Resistance               |                 | 500              | KΩ     | Min                                                                                                                        |
| Modulation Bandwidth           |                 | 10               | KHz    | Min                                                                                                                        |

※ This product doesn't include harmful substance that stipulated by SONY SS-00259 Level 1 and S-AT2-001 Level 1 standard. RoHS Compliant (Pb - Free).



**TEST CIRCUIT****RELIABILITY SPECIFICATIONS****ENVIRONMENTAL:**

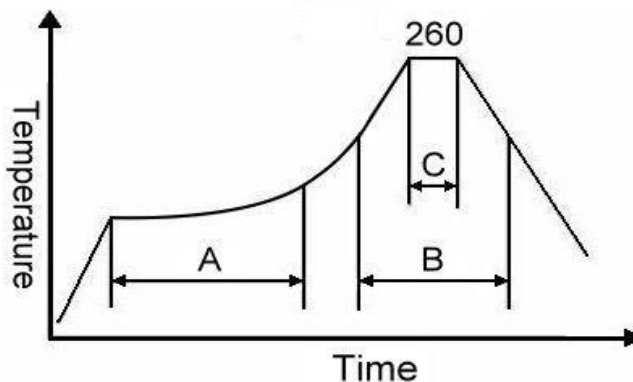
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
- b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- c) VIBRATION: MIL-STD-883, Method 2007, Condition A
- d) RESISTANCE TO SOLDERING HEAT: J-STD-020D Table 5-2 Pb-free devices (except 2 cycles max)
- e) HAZARDOUS SUBSTANCE: Pb - free and RoHS Compliant.

**MECHANICAL:**

- a) SHOCK: MIL-STD-883, Method 2002, Condition B
- b) SOLDERABILITY: JESD22-B102-D Method 2 (Preconditioning E)
- c) TERMINAL STRENGTH: MIL-STD-883, Method 2004, Test Condition D
- d) GROSS LEAK: MIL-STD-883, Method 1014, Condition C
- e) FINE LEAK: MIL-STD-883, Method 1014, Condition A2,  $R1=2 \times 10^{-8}$  atm cc/s
- f) SOLVENT RESISTANCE: MIL-STD-202, Method 215

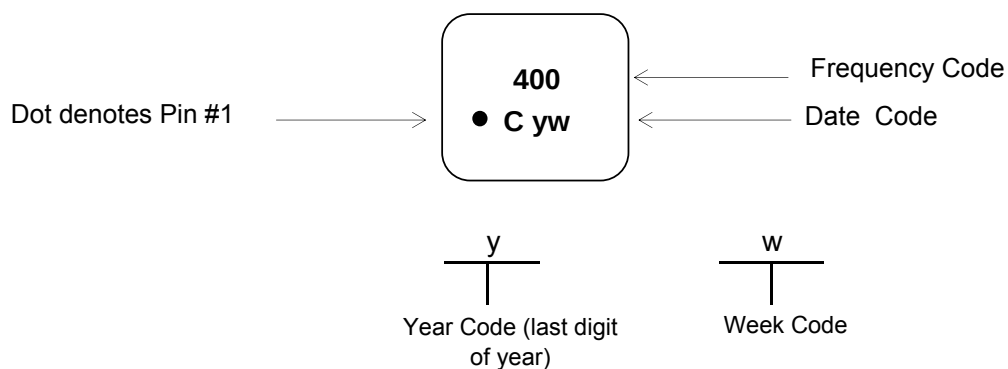
**SUGGESTED IR REFLOW PROFILE**

\*As per IPC-JEDEC J-STD-020D

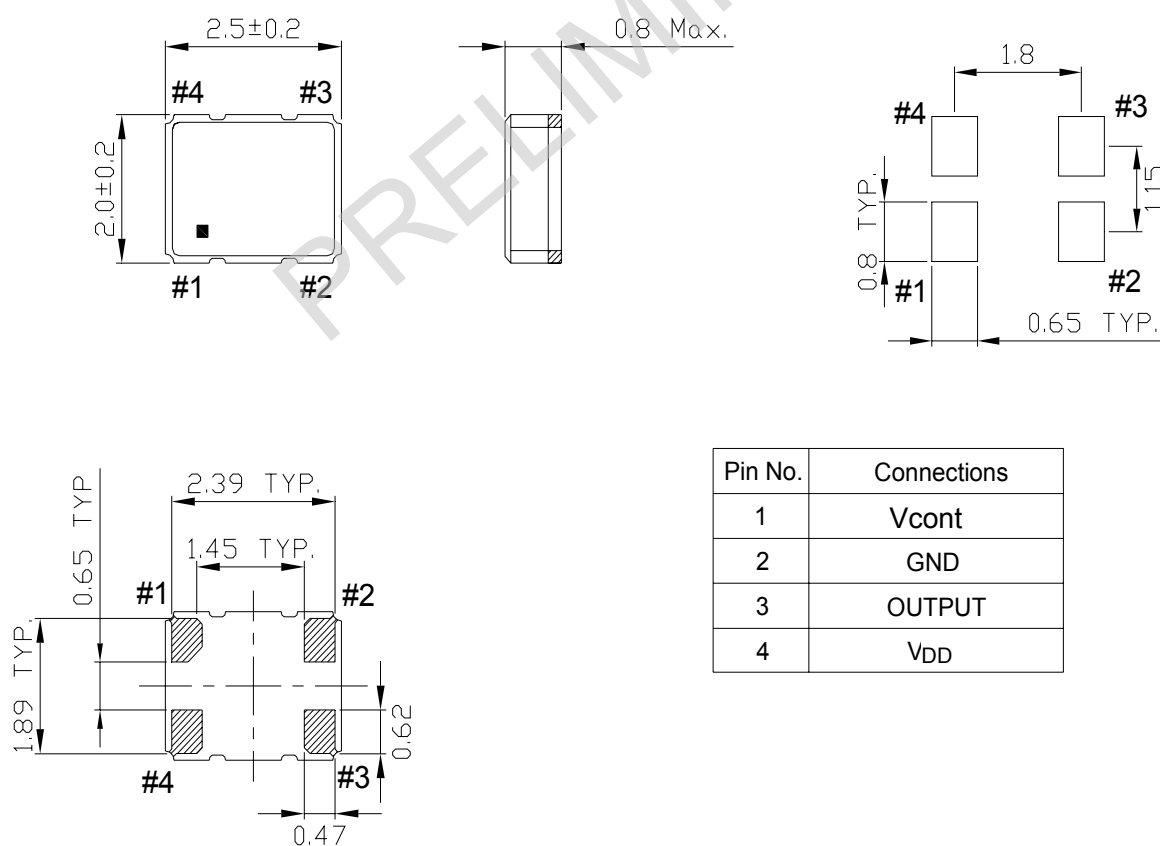


Note:

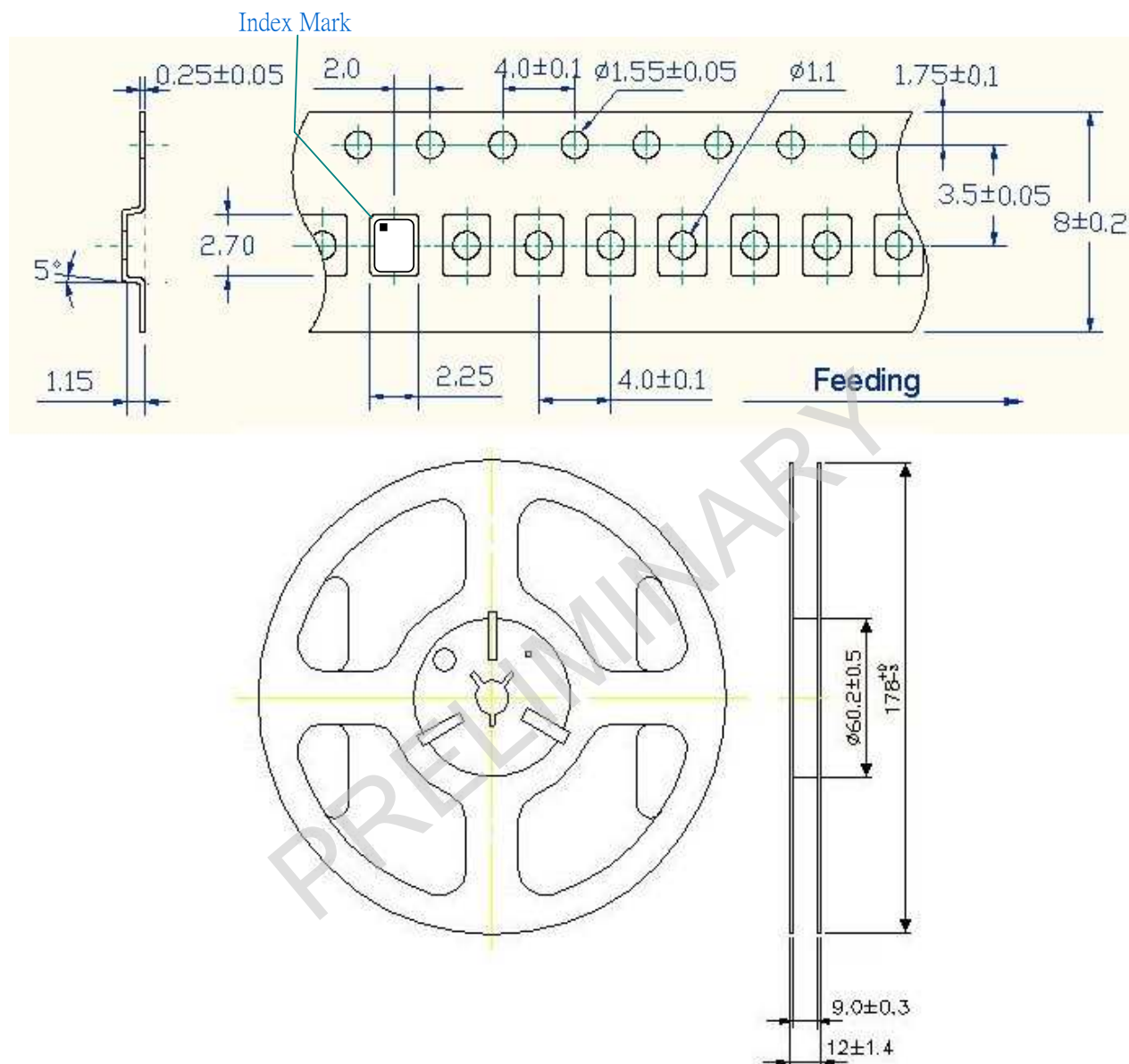
|   | Stage        | Temperature | Time       |
|---|--------------|-------------|------------|
| A | Preheat      | 150~200°C   | 60~120 Sec |
| B | Primary Heat | 217°C       | 60~150 Sec |
| C | Peak         | 260°C       | 10 Sec     |

**MARKING****MECHANICAL DRAWINGS ( Scale: None. Dimensions are in mm.)****Recommended Land Pattern**

(TOP VIEW)



| Pin No. | Connections |
|---------|-------------|
| 1       | Vcont       |
| 2       | GND         |
| 3       | OUTPUT      |
| 4       | VDD         |

**TAPE&REEL**

1. 230mm minimum leader which consist of carrier and/or tape followed by a minimum of 160mm of empty carrier tape sealed with cover tape.
2. 160mm minimum trailer of empty carrier tape sealed with cover tape.

## PACKING

