

### Features

- Freq. range : 1MHz to 156.25MHz
- SMD seam sealing ceramic package
- Supply voltage : 1.8V, 2.5V, 3.3V
- CMOS output
- Operating Temperature : -40°C~+105°C
- Phase Jitter : 1ps (Max.) @100MHz, 3.3V
- Dimensions : 1.6 x 1.2 x 0.6 mm
- RoHS & REACH compliant, Pb-free, Halogen-free

### Applications

- NB, PC, Tablet, Smartphone, IPC, Server, Storage, Ethernet, PC peripherals, USB...etc.
- Audio ADC, Video, CPLD, FPGA, AI Vision Processing Unit, CPU, GPU, MCU, BMC...etc.

### Electrical Characteristics

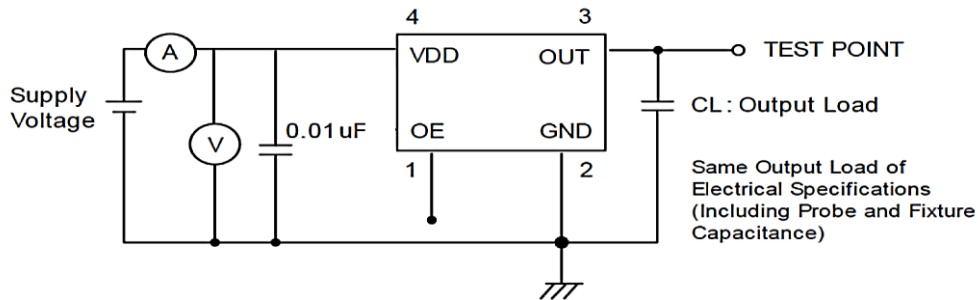
| Item                                                                                                  | 8R                       | Conditions                  |
|-------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------|
| Frequency Range ( $F_0$ )                                                                             | 1MHz ~ 156.25MHz         | $V_{DD}$ @ 2.5 or 3.3V      |
|                                                                                                       | 1MHz ~ 125MHz            | $V_{DD}$ @ 1.8V             |
| Frequency Stability ( $F_{stab}$ )                                                                    | ±25 ppm                  | -40°C ~ +85°C; Note[1]      |
|                                                                                                       | ±50 ppm                  | -40°C ~ +105°C; Note[1]     |
| Operating Temperature Range ( $T_{OTR}$ )                                                             | -40°C ~ +85°C            |                             |
|                                                                                                       | -40°C ~ +105°C           |                             |
| Supply Voltage ( $V_{DD}$ )                                                                           | 1.8V, 2.5V, 3.3V         | $V_{DD} \pm 10\%$           |
| Current Consumption ( $I_{DD}$ )                                                                      | 25 mA Max.               |                             |
| Standby current ( $I_{DD\_ST}$ )                                                                      | 10 $\mu$ A Max.          | OE = Low                    |
| Output Type / Load ( $C_L$ )                                                                          | CMOS / 15 pF             |                             |
| Output Voltage High ( $V_{OH}$ )                                                                      | 90% $V_{DD}$ Min.        | $V_{DD}$ @ 2.5 or 3.3V      |
|                                                                                                       | ( $V_{DD} - 0.4V$ ) Min. | $V_{DD}$ @ 1.8V             |
| Output Voltage Low ( $V_{OL}$ )                                                                       | 10% $V_{DD}$ Max.        | $V_{DD}$ @ 2.5 or 3.3V      |
|                                                                                                       | 0.4V Max.                | $V_{DD}$ @ 1.8V             |
| Rise & Fall Time ( $T_r / T_f$ )                                                                      | 5 ns Max.                | 10% ~ 90% of $V_{DD}$ level |
| Duty Cycle                                                                                            | 45% ~ 55%                |                             |
| Start-up Time ( $T_{OSC}$ )                                                                           | 10 ms Max.               | To 90% of final amplitude   |
| Enable Voltage High ( $V_{IH}$ ), Logic "1"                                                           | 70% $V_{DD}$ Min.        | Enable control @ Pin 1      |
| Enable Voltage Low ( $V_{IL}$ ), Logic "0"                                                            | 30% $V_{DD}$ Max.        |                             |
| Aging ( $F_{aging}$ )                                                                                 | ±3 ppm Max.              | First year at 25°C          |
| RMS Phase Jitter (PJ) <sup>[2]</sup><br>Fout range : 10MHz~40MHz<br>@ Integrated from 12kHz~5MHz      | 1.0 ps Max.              |                             |
| RMS Phase Jitter (PJ) <sup>[2]</sup><br>Fout range : 40MHz~156.25MHz<br>@ Integrated from 12kHz~20MHz | 1.0 ps Typ.              |                             |

### Notes:

[1] Inclusive of frequency tolerance at 25°C, variation over temperature, supply voltage variation, aging and vibration.

[2] Phase Jitter will be slightly different according to output frequency and supply voltage.

## Testing diagram:

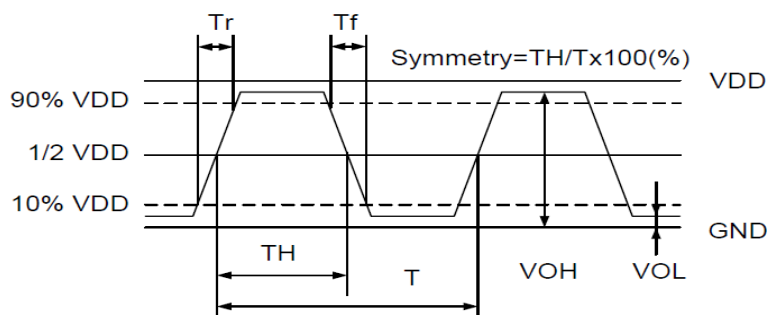


| Pad 1 (OE)     | Pad 3 (Output) | Oscillator       |
|----------------|----------------|------------------|
| High (or open) | OSC out        | Normal operation |
| Low            | High impedance | Stop oscillation |

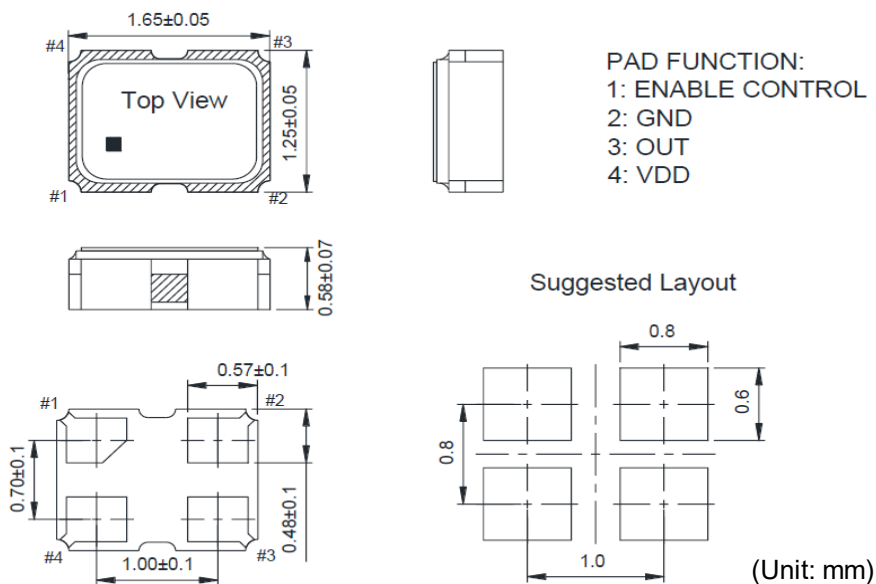
**Notes:** Sets CL to 15pF for simulation IC load. Customer does not need to layout it in reality circuit.

## Waveform conditions :

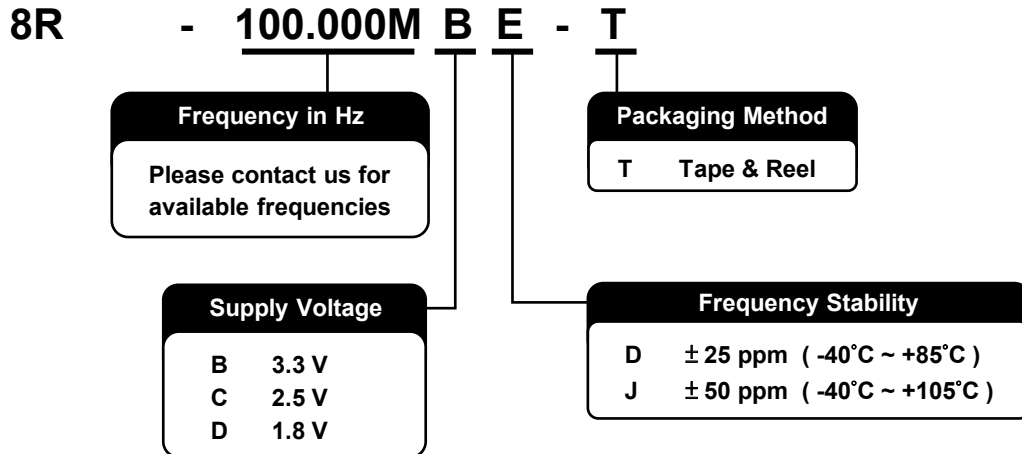
Waveform measurement system should have bandwidth min. 5 times of the frequency being tested.



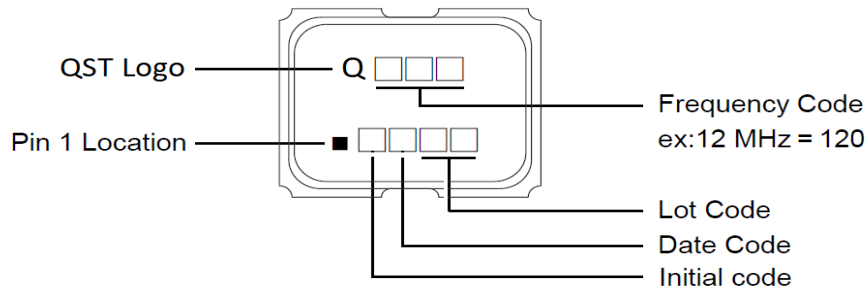
## Dimensions & Recommended Footprint



## Ordering Information



## Marking

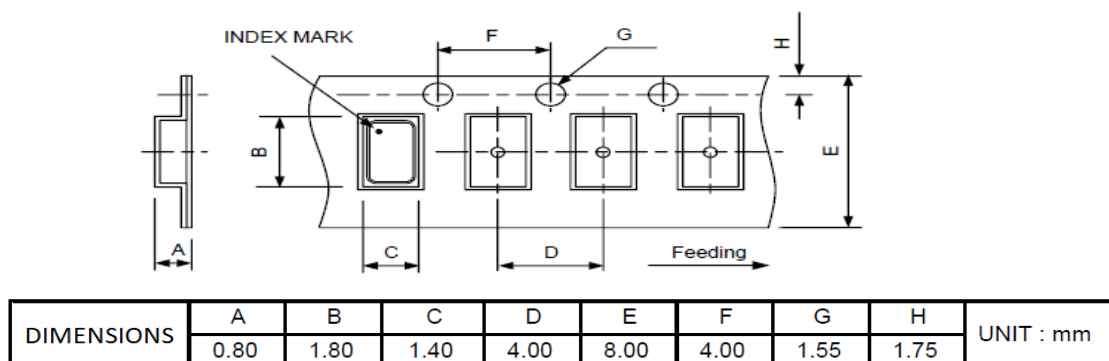


Date Code:

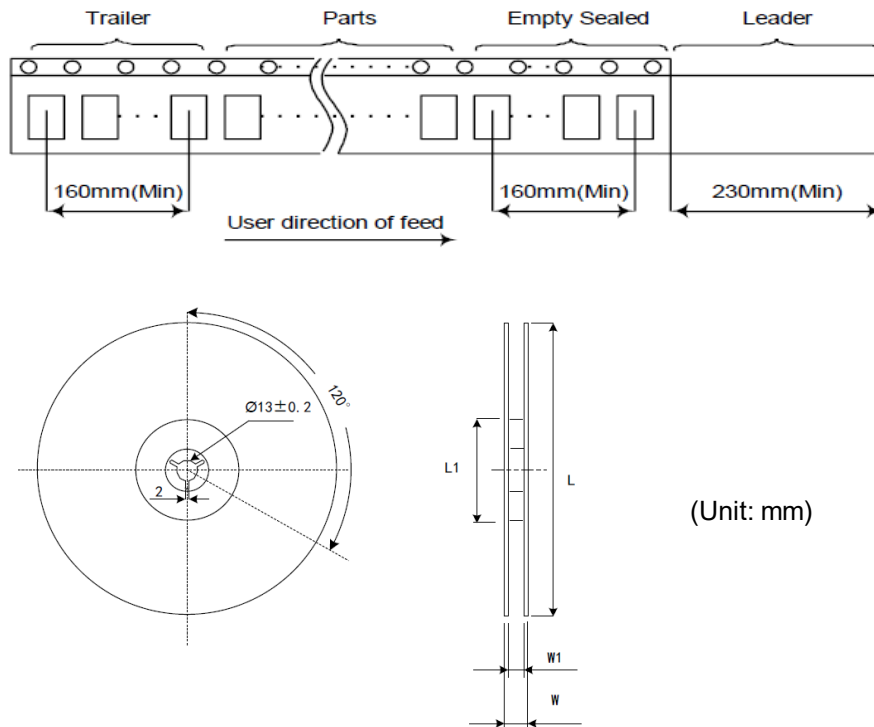
| YEAR \ MONTH |      |      |      |      | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|--------------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|              |      |      |      |      | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2021         | 2025 | 2029 | 2033 | 2037 | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2022         | 2026 | 2030 | 2034 | 2038 | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |
| 2023         | 2027 | 2031 | 2035 | 2039 | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2024         | 2028 | 2032 | 2036 | 2040 | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |

\*This date code will be cycled every four years

## Packing



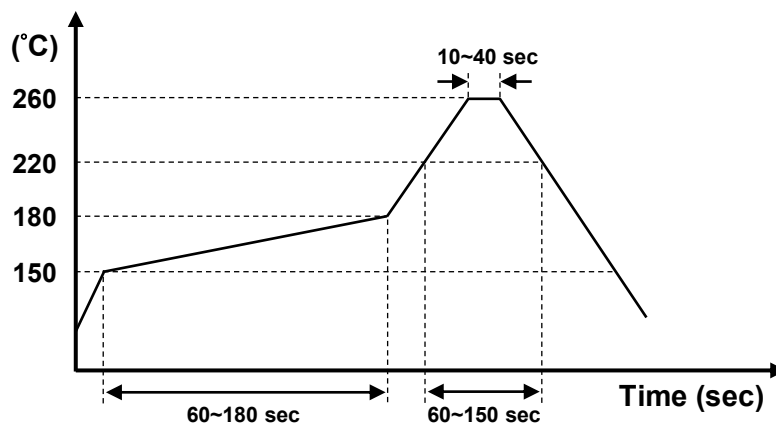
### Packing



| DIMENSIONS | L   | L1 | W    | W1 | pcs / Reel (UNIT : mm)                       |
|------------|-----|----|------|----|----------------------------------------------|
|            | 178 | 13 | 11.5 | 8  | Standard Reel Quantity is 3,000 pcs per reel |

### Reflow Profile

Total time : 600 sec. Max.  
Solder melting point : 220°C



# Mouser Electronics

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