



actual size

# Oscillator · JO32 · 3.3 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



## General Data

| type                              | JO32 3.3 V                                  |
|-----------------------------------|---|
| frequency range                   | 0.75 ~ 80.0 MHz (15 pF max.)                |
|                                   | 0.75 ~ 50.0 MHz (30 pF max.)                |
| frequency stability over all*     | ± 25ppm ~ ± 100ppm (table 1)                |
| current consumption               | see table 2                                 |
| supply voltage V <sub>DC</sub>    | 3.3 V ± 5%                                  |
| temperature                       | operating -20 °C ~ +70 °C / -40 °C ~ +85 °C |
|                                   | storage -55 °C ~ +100 °C                    |
| output                            | rise & fall time see table 3                |
|                                   | load max 15pF / 30pF                        |
|                                   | current max. 5mA                            |
|                                   | low level max. 0.1 x V <sub>DC</sub>        |
|                                   | high level min. 0.9 x V <sub>DC</sub>       |
| output enable time max.           | 10ms  |
| output disable time max.          | 150ns                                       |
| start-up time max.                | 10ms  |
| standby function                  | stop  |
| standby current max.              | 5µA   |
| phase jitter 12 kHz ~ 20.0 MHz    | < 1.0ps RMS                                 |
| symmetry at 0.5 x V <sub>DC</sub> | 45% ~ 55% max.                              |

Table 1: Frequency Stability Code

| stability code  | A         | B        | G        | C        |  |  |
|-----------------|-----------|----------|----------|----------|--|--|
|                 | ± 100 ppm | ± 50 ppm | ± 30 ppm | ± 25 ppm |  |  |
| -20 °C ~ +70 °C |           | ●        | ○        | △        |  |  |
| -40 °C ~ +85 °C | ○         | ○        | ○        |          |  |  |

● standard ○ available △ excludes aging

\* includes stability at 25 °C, operating temp. range, supply voltage change, shock and vibration, aging 1st year.

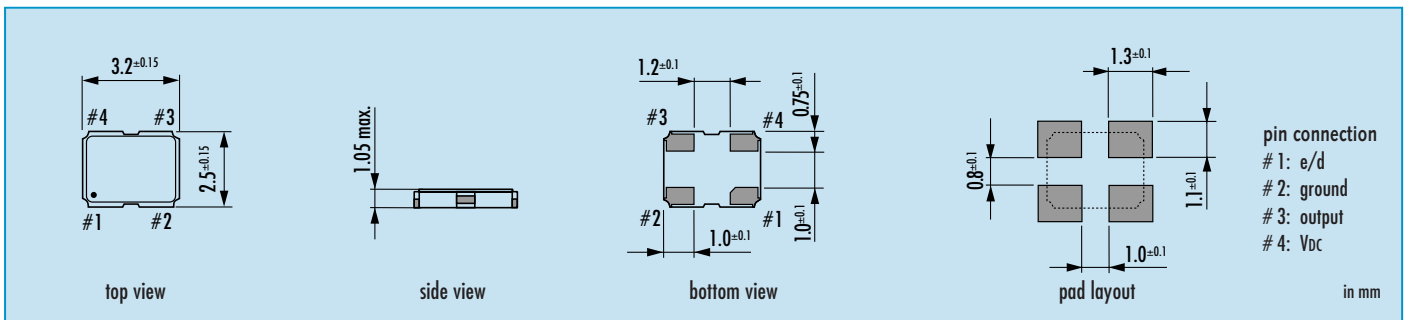
Table 2: Current Consumption max.

| Current at 15pF load |       | Current at 30pF load |       |
|----------------------|-------|----------------------|-------|
| 0.75 ~ 19.9 MHz      | 7 mA  | 0.75 ~ 19.9 MHz      | 10 mA |
| 20.00 ~ 39.9 MHz     | 13 mA | 20.00 ~ 39.9 MHz     | 17 mA |
| 40.00 ~ 59.9 MHz     | 19 mA | 40.00 ~ 50.0 MHz     | 24 mA |
| 60.00 ~ 80.0 MHz     | 24 mA |                      |       |

Table 3: Rise & Fall Time max.

|                       |  |
|-----------------------|--|
| 5 ns: 0.75 ~ 1.8 MHz  | <b>note:</b><br>- specific data on request<br>- rise time: 0.1 V <sub>DC</sub> ~ 0.9 V <sub>DC</sub><br>- fall time: 0.9 V <sub>DC</sub> ~ 0.1 V <sub>DC</sub> |
| 4 ns: 1.81 ~ 80.0 MHz |  |

## Dimensions



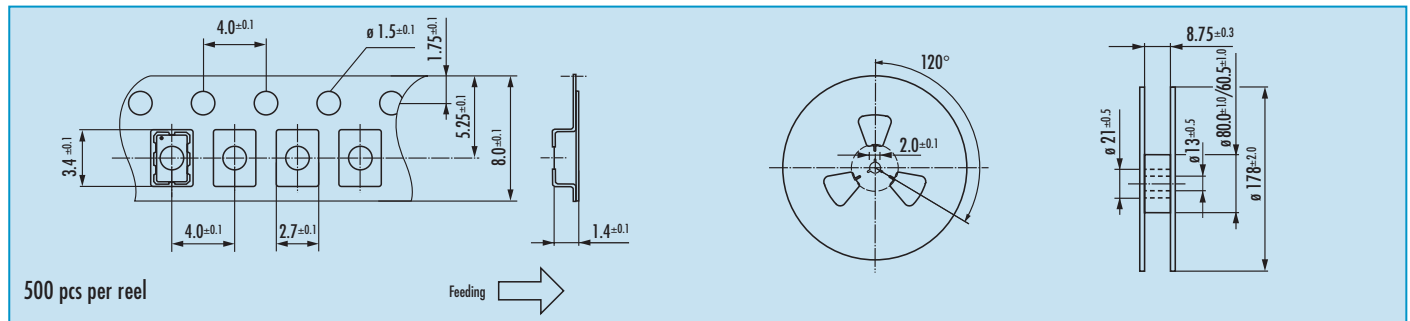
## Order Information

|            |                 |      |                          |                     |                        |   |
|------------|-----------------|------|--------------------------|---------------------|------------------------|---|
| 0          | frequency       | type | frequency stability code | supply voltage code | output load code       | option  |
| Oscillator | 0.75 ~ 80.0 MHz | JO32 | see table 1              | 3.3 = 3.3 V         | 1 = 15 pF<br>2 = 30 pF | blank = -20 °C ~ +70 °C<br>T1 = -40 °C ~ +85 °C |

Example: O 20.0-JO32-B-3.3-1 (LF = RoHS compliant / Pb free pins or pads)

# Oscillator · JO32 · 3.3 V · Stop Function

## Taping Specification



## Enable / Disable Function

| pin #1 (e/d control)  | pin #3 (output) |
|---|-----------------|
| open  | active          |
| high "1" ( $V_{IH} \geq 0.8 V_{DC}$ )   | active          |
| low "0" ( $V_{IL} \leq 0.2 V_{DC}$ )  | high impedance  |
| <b>stop function:</b> <ul style="list-style-type: none"> <li>oscillator stops</li> <li>output high impedance</li> </ul> |                 |

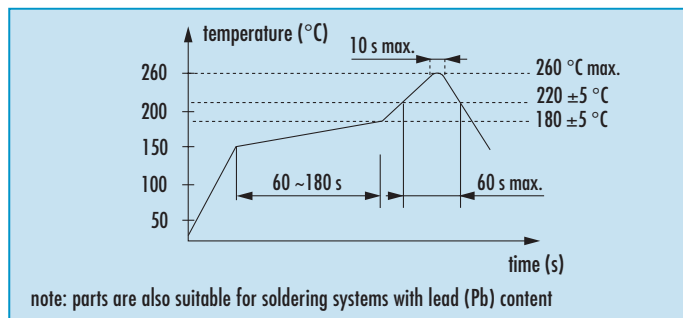
## Marking

frequency  
type / date code

date code:  
A ~ M: Jan. - Dec.  
5: 2005  
6: 2006  
7: 2007

|      |       |       |      |      |      |
|------|-------|-------|------|------|------|
| Jan. | Febr. | Mar.  | Apr. | May  | June |
| A    | B     | C     | D    | E    | F    |
| July | Aug.  | Sept. | Oct. | Nov. | Dec. |
| G    | H     | J     | K    | L    | M    |

## Reflow Soldering Profile



## Packing Note

- standard packing units are 500 pieces per reel
- non-multiple packing units are only supplied taped / bulk