



actual size

Oscillator JO32 · 2.8 V

- SMD Oscillator with Stop Function · 3.2 x 2.5 mm
- LVCMOS / HCMOS compatible output
- Low phase jitter, no PLL
- Seam sealed ceramic/metal package



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA

| TYPE | | JO32 2.8 V |
|-----------------------------------|-------------------------------------|---|
| frequency range | STD & T1 | 0.75 ~ 50.0 MHz (30 pF max.) 0.75 ~ 170.0 MHz (15 pF max.) |
| | T2 | 1.25 ~ 170.0 MHz (15 pF max.) |
| | T3* | 1.25 ~ 135.0 MHz (15 pF max.) |
| | frequency stability over all** | ± 20 ppm ~ ± 100 ppm (table 1) |
| current consumption | see table 2 | |
| supply voltage V _{DC} | 2.8 V ± 10 % (±5 % for stab. C & D) | |
| temperature | operating | -20 °C ~ +70 °C (STD) |
| | | -40 °C ~ +85 °C (T1) |
| | | -40 °C ~ +105 °C (T2) |
| | | -40 °C ~ +125 °C (T3*) |
| storage | -55 °C ~ +125 °C | |
| output | rise & fall time | see table 3 |
| | load max. | 15 pF / 30 pF (≤ +85 °C and ≤ 50.0 MHz) |
| | current max. | 4 mA / 5 mA |
| | low level max. | 0.1 x V _{DC} / 0.4 V for T2 & T3* |
| | high level min. | 0.9 x V _{DC} / V _{DC} - 0.4V for T2 & T3* |
| output enable time max. | 10 ms | |
| output disable time max. | 50 µs | |
| start-up time max. | 10 ms | |
| standby function | stop | |
| standby current max. | 10µA / 20µA (for T2 & T3*) | |
| phase jitter 12 kHz ~ 20.0 MHz | < 1.0 ps RMS | |
| symmetry at 0.5 x V _{DC} | 45% ~ 55% typ. (40% ~ 60% max.) | |

TABLE 1: FREQUENCY STABILITY CODE

| stability code | | A | B | G | C | D |
|------------------|-----|-----------|---------|----------|----------|----------|
| | | ± 100 ppm | ±50 ppm | ± 30 ppm | ± 25 ppm | ± 20 ppm |
| -20 °C ~ +70 °C | STD | | ○ | ○ | ○ | △ |
| -40 °C ~ +85 °C | T1 | ○ | ○ | ○ | □ | |
| -40 °C ~ +105 °C | T2 | ○ | ○ | | | |
| -40 °C ~ +125 °C | T3* | ○ | ○ | | | |

○ available □ excludes aging △ if ≤ 50.0 MHz, excludes aging

* ask if available

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

TABLE 2: CURRENT CONSUMPTION MAX.

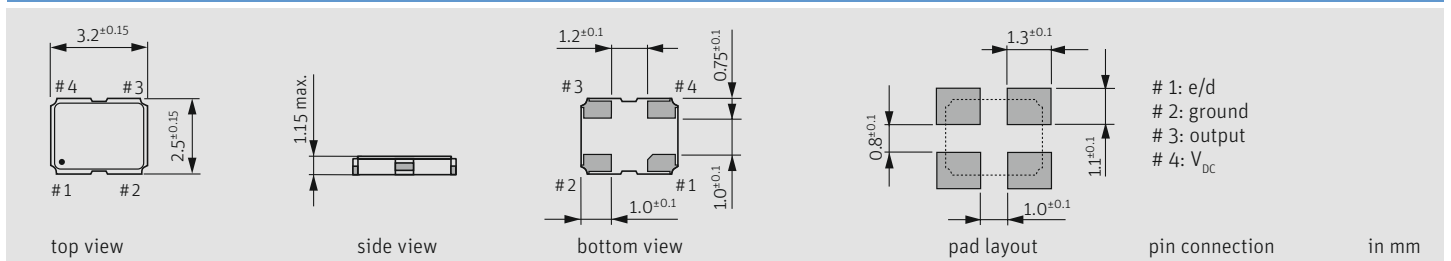
| Current at 15 pF load: | | Current at 30 pF load: | |
|------------------------|-------|------------------------|-------|
| 0.75 ~ 19.9 MHz | 4 mA | 0.75 ~ 19.9 MHz | 6 mA |
| 20.00 ~ 39.9 MHz | 7 mA | 20.00 ~ 39.9 MHz | 13 mA |
| 40.00 ~ 59.9 MHz | 16 mA | 40.00 ~ 50.0 MHz | 18 mA |
| 60.00 ~ 79.9 MHz | 18 mA | | |
| 80.00 ~ 134.9 MHz | 40 mA | | |
| 135.00 ~ 170.0 MHz | 50 mA | | |

TABLE 3: RISE & FALL TIME MAX.

| at 15 pF | | at 30 pF | |
|---------------------------|--|------------------------|--|
| 5 ns: 0.75 ~ 59.99 MHz | | 8 ns: 0.75 ~ 50.00 MHz | |
| 5 ns: 60.00 ~ 79.99 MHz | | | |
| 4 ns: 80.00 ~ 134.99 MHz | | | |
| 3 ns: 135.00 ~ 170.00 MHz | | | |

note: rise time: 0.1 V_{DC} ~ 0.9 V_{DC} / fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
specific data on request

DIMENSIONS



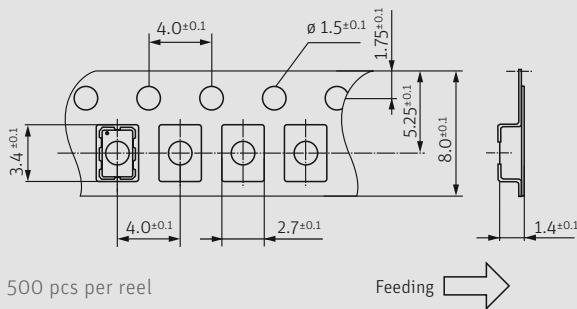
ORDER INFORMATION

| 0 | frequency | type | frequency stability code | supply voltage code | output load code | option |
|------------|------------------|------|--------------------------|---------------------|------------------------|---|
| Oscillator | 0.75 ~ 170.0 MHz | JO32 | see table 1 | 2.8 = 2.8 V | 1 = 15 pF 2 = 30 pF | blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C |

Example: 0 20.0-JO32-B-2.8-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

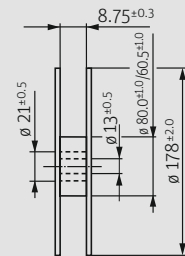
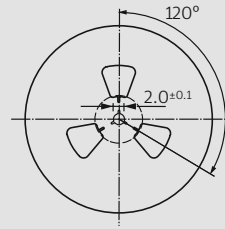
Oscillator J032 · 2.8 V · Stop Function

TAPING SPECIFICATION



500 pcs per reel

Feeding →



in mm

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 |

stop function:

- oscillator stops
- output high impedance

MARKING

frequency

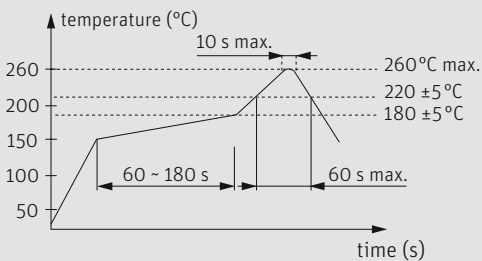
company stability code / date code

date code: A ~ M: Jan. - Dec.

3: 2023 4: 2024 5: 2025 6: 2026 7: 2027 8: 2028

| 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



note: parts are also suitable for soldering systems with lead (Pb) content

PACKAGING NOTE

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