



actual size

Oscillator JO22 · 2.5 V

- SMD Oscillator with Stop Function · 2.5 x 2.0 mm
- LVCMOS / HCMOS compatible output
- Low phase jitter, no PLL
- Flat seam sealed ceramic/metal package



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA

| TYPE | | JO22 2.5 V |
|--------------------------------|-------------------------------------|--|
| frequency range | 0.75 ~ 50.0 MHz | |
| frequency stability over all* | ± 25 ppm ~ ± 100 ppm see table 1 | |
| current consumption | see table 2 | |
| supply voltage V_{DC} | 2.5 V ± 10% (± 5% for stab. C) | |
| temperature | operating | -20 °C ~ +70 °C up to -40 °C ~ +125 °C |
| | storage | -55 °C ~ +125 °C |
| output | rise & fall time | see table 3 |
| | load max. | 15 pF |
| | current max. | 4.0 mA |
| | low level max. | 0.4 V |
| | high level min. | $V_{DC} - 0.4$ V |
| output enable time max. | 10 ms | |
| output disable time max. | 50 µs | |
| start-up time max. | 10 ms | |
| standby function | stop | |
| standby current max. | 10 µA / 20 µA for T2, T3 | |
| phase jitter 12 kHz ~ 20.0 MHz | < 1.0 ps RMS | |
| symmetry at 0.5 x V_{DC} | 45% ~ 55% max. | |

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

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 | T1 | ○ | ○ | ○ | |
| -40 °C ~ +105 °C | T2 | ○ | ○ | | |
| -40 °C ~ +125 °C | T3 | ○ | | | |

○ available

TABLE 2: CURRENT CONSUMPTION MAX.

2.5 V: current at 15pF load:

| | |
|------------------|------|
| 0.75 ~ 19.9 MHz | 5 mA |
| 20.00 ~ 39.9 MHz | 6 mA |
| 40.00 ~ 50.0 MHz | 7 mA |

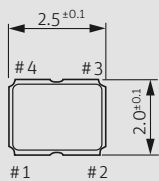
TABLE 3: RISE & FALL TIME MAX.

5 ns: 0.75 ~ 50.0 MHz

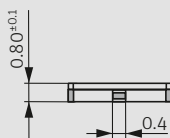
note:

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

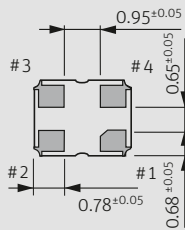
DIMENSIONS



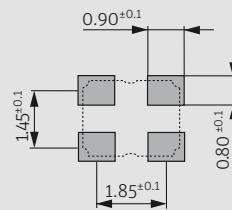
top view



side view



bottom view



pad layout

1: e/d
2: ground
3: output
4: V_{DC}

pin connection

in mm

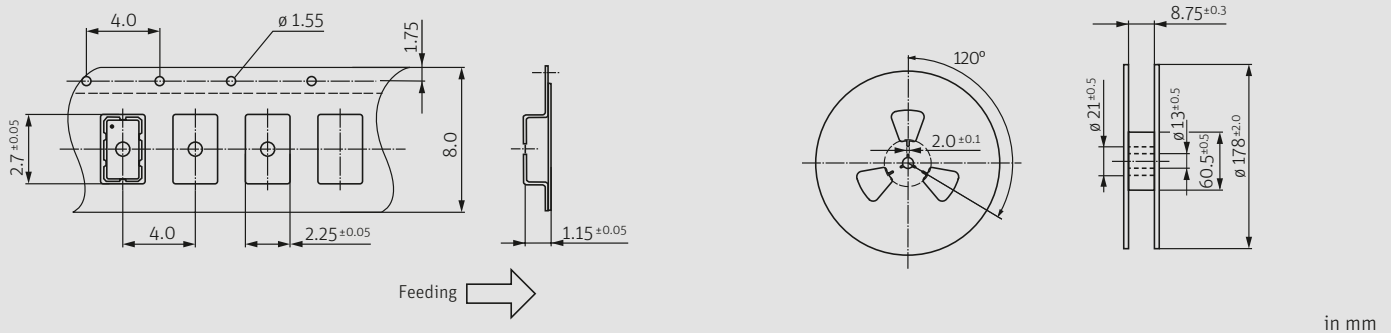
ORDER INFORMATION

| 0 | frequency | type | frequency stability code | supply voltage code | output load code | option |
|------------|-----------------|------|--------------------------|---------------------|------------------|---|
| Oscillator | 0.75 ~ 50.0 MHz | JO22 | see table 1 | 2.5 = 2.5 V | 1 = 15 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-JO22-B-2.5-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

Oscillator J022 · 2.5 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 |

stop function:

- oscillator stops
- output high impedance

MARKING

frequency

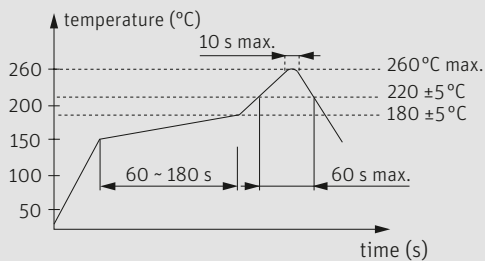
company stability code / date code

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

0: 2020 1: 2021 2: 2022 3: 2023 4: 2024 5: 2025

| 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
- customized quantities on request

* hand soldering temperature should not exceed 280 °C