



actual size

Oscillator JT21S(V) · (VC)TCXO

- Temp. Compensated Crystal Oscillator, 2.0 x 1.6 mm
- low power VCTCXO or TCXO with clipped sine output
- temperature range -40 °C ~ +85 °C available
- ± 0.5 ppm stability available
- for navigation system use, please prefer JT21G(E)



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

| GENERAL DATA | | |
|--------------------------------|---|---------------------------------|
| TYPE | JT21S / JT21SV clipped sine (VC)TCXO | |
| frequency range | 13.0 ~ 52.0 MHz | |
| frequency tolerance/ stability | at +25°C | ±2.0 ppm (incl. 2x reflow) |
| | temperature | ±0.5 ppm ~ ±5 ppm (table 1) |
| | aging first year | ±1 ppm |
| | supply voltage | ±0.2 ppm (at $V_{DC} \pm 5\%$) |
| | load change | ±0.2 ppm |
| current consumption | 1.5 mA max. <26 MHz / 2.5 mA max. <52 MHz | |
| supply voltage V_{DC} | 1.8 / 2.5 / 2.8 / 3.0 / 3.3 (±5%) * | |
| temperature | operating | see table 1 |
| | storage | -40 °C ~ +85 °C |
| output | load nom. | 10 KΩ // 10 pF |
| | level min. | 0.8 Vpp (clipped sine) |
| external tuning range JT21SV | ±8 ppm min. | |
| external tuning voltage JT21SV | 0.9 V ± 0.9 V at $V_{DC} = 1.8$ V (standard) | |
| | 1.5 V ± 1.0 V at $V_{DC} \geq 2.5$ V (standard) | |
| | 1.4 V ± 1.0 V at $V_{DC} \geq 2.5$ V (option) | |
| start-up time max. | 2.5 ms | |
| phase noise | at 100 Hz | -117 dBc/Hz typ. |
| | at f_0 | at 1 KHz |
| 26 MHz | at 10 KHz | -149 dBc/Hz typ. |

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE

| operating temperature code | frequency stability code / ppm | | | | | | |
|----------------------------|--------------------------------|-------|-------|-------|-------|-------|-------|
| | Y | Z | A | B | C | D | E |
| A: -30 °C ~ +80 °C | ± 5.0 | ± 3.0 | ± 2.5 | ± 2.0 | ± 1.5 | ± 1.0 | ± 0.5 |
| B: -20 °C ~ +70 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| C: -10 °C ~ +60 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| D: 0 °C ~ +85 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| E: 0 °C ~ +55 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| F: -10 °C ~ +70 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| G: -30 °C ~ +75 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| H: -20 °C ~ +75 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| K: -40 °C ~ +85 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| L: -20 °C ~ +85 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| M: -30 °C ~ +85 °C | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ on request

NOTE

- TCXO JT21S: pin #1 connected to GND
- VCTCXO JT21SV: pin #1 is control voltage V_C
- external AC coupling for output recommended
- * other nominal supply voltages within 1.8 V ~ 3.3 V need to be specified, ask for availability

DIMENSIONS

top view

side view

bottom view

pad layout

| | |
|---------------|------------------|
| TCXO JT21S | VCTCXO JT21SV |
| # 1: GND | # 1: Vcontrol |
| # 2: GND | # 2: GND |
| # 3: output | # 3: output |
| # 4: V_{DC} | # 4: V_{DC} |

pin connection

in mm

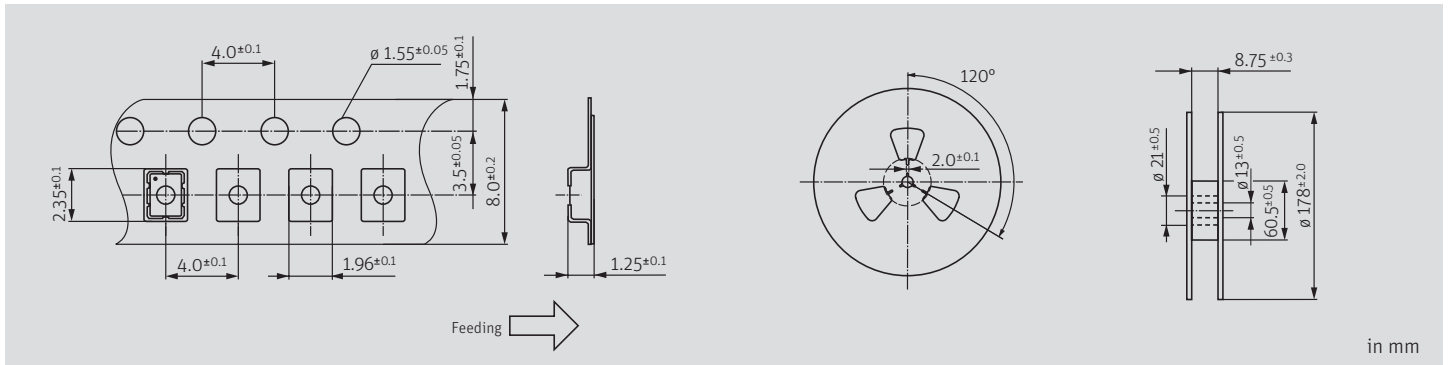
ORDER INFORMATION

| 0 | frequency | type | frequency stability code | operating temp. code | supply voltage | control voltage (for JT21SV only) |
|------------|-----------------|---------------------------------|--------------------------|----------------------|---|---|
| Oscillator | 13.0 ~ 52.0 MHz | JT21S = TCXO JT21SV = VCTCXO | A - Z see table 1 | A - M see table 1 | 1.8 = 1.8 V 2.5 = 2.5 V 2.8 = 2.8 V 3.0 = 3.0 V 3.3 = 3.3 V | 0.9 = V_C 0.9 V ± 0.9 V at $V_{DC} = 1.8$ V 1.5 = V_C 1.5 V ± 1.0 V at $V_{DC} \geq 2.5$ V 1.4 = V_C 1.4 V ± 1.0 V at $V_{DC} \geq 2.5$ V see General Data |

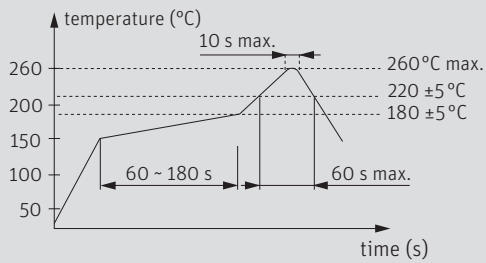
Example: 0 26.0-JT21SV-A-G-3.3-1.5-LF (Suffix LF = RoHS compliant / Pb free)

Oscillator JT21S(V) · (VC)TCXO

TAPING SPECIFICATION



REFLOW SOLDERING PROFILE



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

MARKING

frequency

company code / stability code / date code

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

2: 2022 3: 2023 4: 2024 5: 2025 6: 2026 7: 2027

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

PACKAGING NOTE

- standard packing unit is 500 pieces per reel
- customized quantities on request