



actual size

# Oscillator · (VC)TCXO · JT22P(V)

Temp. Compensated Crystal Oscillator · 2.5 x 2.0 mm

- low power VCTCXO or TCXO
- temperature range -30 °C ~ +85 °C available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



## General Data

type		JT22P / JT22PV
frequency range		8.0 ~ 52.0 MHz
frequency	at +25 °C	± 2.0 ppm (incl. 2x reflow)
	tolerance/temperature	± 1 ppm ~ ± 5 ppm (table 1)
stability	aging first year	± 1 ppm (at +25 °C)
	supply voltage	± 0.2 ppm (at $V_{DC} \pm 5\%$ )
	load change	± 0.2 ppm (at 10Kohms    10pF +/-10%)
current consumption		2.0 mA max.
supply voltage $V_{DC}$		1.8 / 2.5 / 2.8 / 3.0 (± 5%) *
temperature	operating	-30 °C ~ +85 °C
	storage	-40 °C ~ +85 °C
output	load nom.	10 KΩ // 10 pF
	level min.	0.8 Vpp (clipped sine)
external tuning range JT22PV		± 8 ppm min.
external tuning voltage JT22PV		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.		2.0 ms
phase noise	at 100 Hz	-120 dBc/Hz typ.
	at $f_o$	at 1 KHz -138 dBc/Hz typ. at 10 KHz -145 dBc/Hz typ.

Table 1: Frequency Stability vs. Temperature

operating temperature code	frequency stability code					
	Y	Z	A	B	C	D
± 5.0 ppm	± 3.0 ppm	± 2.5 ppm	± 2.0 ppm	± 1.5 ppm	± 1.0 ppm	
M: -30 °C ~ +85 °C	○	○	○	○	○	○

○ available

## Marking

company code / date code / internal code  
frequency / blank date code / internal code

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
2015	2019	a	b	c	d	e	f	g	h	i	k	m
2016	2020	n	p	q	r	s	t	u	v	w	x	z
2017	2021	A	B	C	D	E	F	G	H	J	K	M
2018	2022	N	P	Q	R	S	T	U	V	W	X	Z

## Note

- TCXO JT22P: pin #1 connected to GND
- VCTCXO JT22PV: pin #1 is control voltage  $V_c$
- external AC coupling for output recommended
- \* other nominal supply voltages within 1.8 V ~ 3.0 V need to be specified, ask for availability (supply voltage 3.3V±5% not available)

## Dimensions

TCXO JT22P	VCTCXO JT22PV
# 1: GND	# 1: Vcontrol
# 2: N.C.	# 2: N.C.
# 3: GND	# 3: GND
# 4: output	# 4: output
# 5: N.C.	# 5: N.C.
# 6: Vcc	# 6: Vcc

in mm

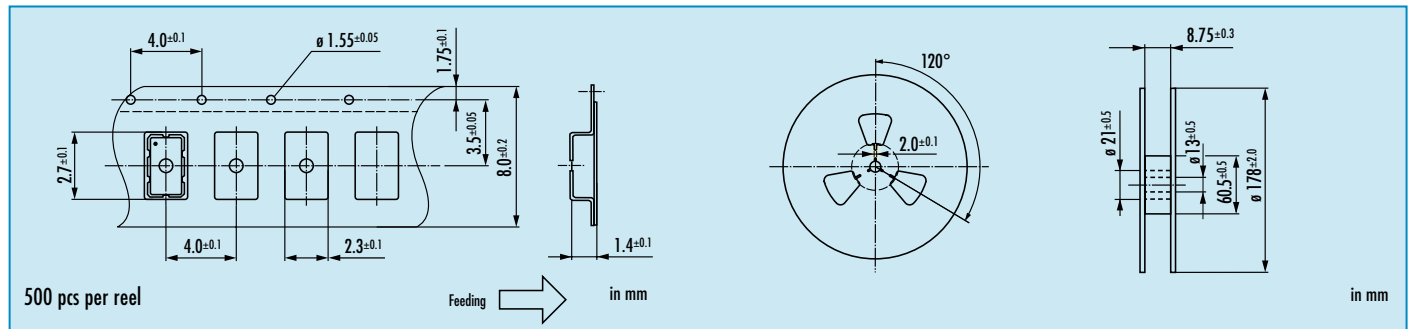
## Order Information

0	frequency in MHz	type	frequency stability code	operating temp. code	supply voltage	control voltage (for JT22PV only)
Oscillator	8.0 ~ 52.0 MHz	JT22P = TCXO JT22PV = VCTCXO	A - Z see table 1	M = -30 °C ~ +85 °C	1.8 = 1.8 V 2.5 = 2.5 V 2.8 = 2.8 V 3.0 = 3.0 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

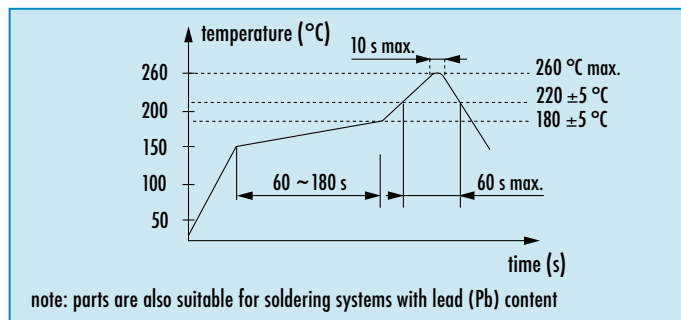
Example: O 26.0-JT22PV-D-M-3.3-1.5-LF (Suffix LF = RoHS compliant / Pb free pads)

# Oscillator · (VC-)TCXO · JT22P(V)

## Taping Specification



## Reflow Soldering Profile



## Packing Note

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