



actual size

# Oscillator · TCXO · JT22C

TCXO with HCMOS output · 2.5 x 2.0 mm

- excellent phase noise
- operating temperature range -40 °C ~ +85 °C
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



## General Data

<b>type</b>	<b>JT22C</b>	
<b>frequency range</b>	4.0 ~ 54.0 MHz	
<b>stability</b>	at +25 °C	± 0.5 ppm
	temperature	± 2.5 ppm (others on request)
	aging first year	± 1.0 ppm
	supply voltage	± 0.2 ppm (at V <sub>DC</sub> ± 5%)
	load change	± 0.2 ppm
	after reflow	± 1.0 ppm
<b>current consumption max.</b>	→ see table 1	
<b>supply voltage V<sub>DC</sub></b>	1.8 / 2.5 / 2.8 / 3.3 (± 5%)	
<b>temperature</b>	operating	-30 °C ~ +75 °C / -40 °C ~ +85 °C
	storage	-40 °C ~ +125 °C
<b>output</b>	rise & fall time	5.0 ns max.
	load max.	15 pF
	current max.	4.0 mA
	low level max.	0.1 x V <sub>DC</sub>
	high level min.	0.9 x V <sub>DC</sub>
<b>harmonics distortion max.</b>	-5.0 dBc	
<b>symmetry at 0.5 x V<sub>DC</sub></b>	45% ~ 55% max.	
<b>start-up time max.</b>	10 ms	
<b>standby current max.</b>	10 µA	
<b>output enable time max.</b>	10 ms	
<b>output disable time max.</b>	250 ns	
<b>Jitter 1 σ</b>	3.0 ps	
<b>phase noise at 10 kHz offset</b>	-145 dBc/Hz	

Table 1: Current Consumption max.

	4 ~ 10 MHz	~ 20 MHz	~ 30 MHz	~ 40 MHz	~ 54 MHz
1.8 V	3.1 mA	3.7 mA	4.2 mA	4.6 mA	5.5 mA
2.5 V	3.1 mA	3.7 mA	4.2 mA	4.6 mA	5.5 mA
2.8 V	3.4 mA	4.1 mA	4.7 mA	5.2 mA	6.0 mA
3.3 V	4.0 mA	4.8 mA	5.5 mA	6.0 mA	7.0 mA

## Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" (V <sub>IH</sub> ≥ 0.7 V <sub>DC</sub> )	active
low "0" (V <sub>IL</sub> ≤ 0.3 V <sub>DC</sub> )	high impedance
<b>stop function:</b>	
<ul style="list-style-type: none"> <li>• oscillator stops</li> <li>• output high impedance</li> </ul>	

## Note

4 user pins (e/d, GND, output, V<sub>DC</sub>)  
leave the other pins unconnected!

## Dimensions

top view

side view

bottom view

pad layout

TCXO  
JT22C  
# 1: e/d  
# 2: GND  
# 3: output  
# 4: V<sub>DC</sub>

pin connection

in mm

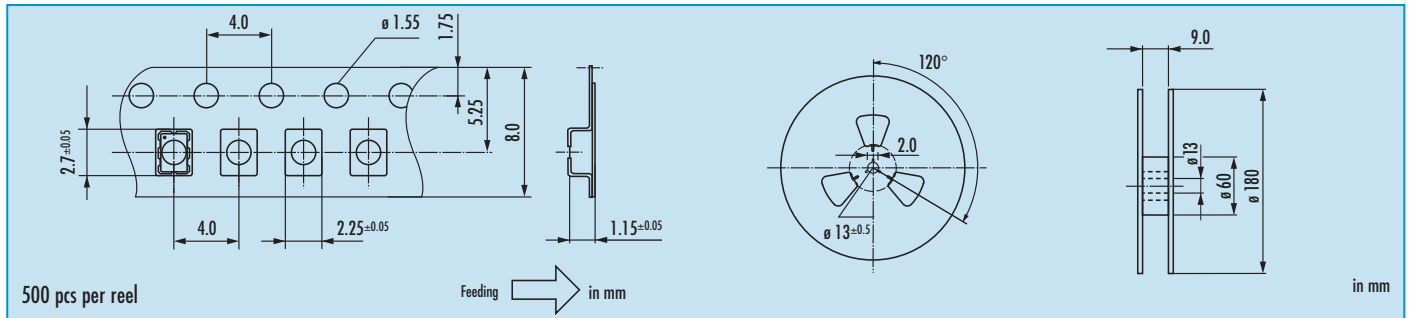
## Order Information

0	frequency in MHz	type	frequency stability code	operating temp. code	supply voltage
Oscillator	4.0 ~ 54.0 MHz	JT22C = TCXO	A = ± 2.5 ppm	G = -30 °C ~ +75 °C K = -40 °C ~ +85 °C	1.8 = 1.8 V 2.5 = 2.5 V 2.8 = 2.8 V 3.3 = 3.3 V
<p>Example: O 16.3680-JT22C-A-K-3.3-LF (Suffix LF = RoHS compliant / Pb free pads)</p>					

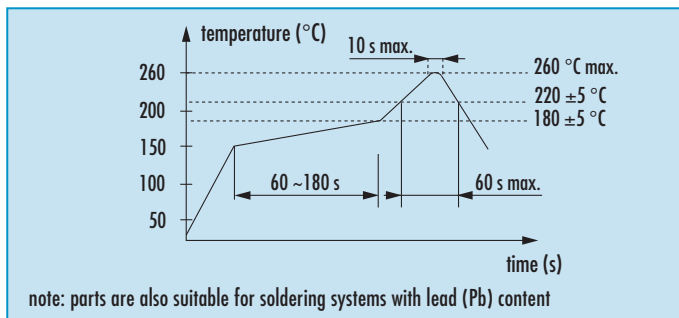


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## Taping Specification



## Reflow Soldering Profile



## Marking

frequency

company code / stability code / date code (YM)

date code:

A ~ M: Jan.- Dec.

9: 2009

0: 2010

1: 2011

Jan.	Febr.	Mar.	Apr.	May	June
A	B	C	D	E	F

July	Aug.	Sept.	Oct.	Nov.	Dec.
G	H	J	K	L	M

## Packing Note

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