



actual size

# Oscillator · JO21 · 2.5 V

SMD Oscillator with Stop Function · 2.0 x 1.6 mm

- ultra small package
- low current consumption
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



## General Data

type	JO21 2.5 V
frequency range	1.6250 ~ 54.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V <sub>DC</sub>	2.5 V ± 10%
temperature	operating** -20 °C ~ +70 °C / -40 °C ~ +85 °C storage -65 °C ~ +125 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.1 x V <sub>DC</sub> high level min. 0.9 x V <sub>DC</sub>
output enable time max.	10 ms
output disable time max.	200 ns
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
symmetry at 0.5 x V <sub>DC</sub>	45% ~ 55% max.

\*\* ask if a 105 °C version is available

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	D		
-40 °C ~ +85 °C	○	○				

● standard ○ available D excludes aging

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

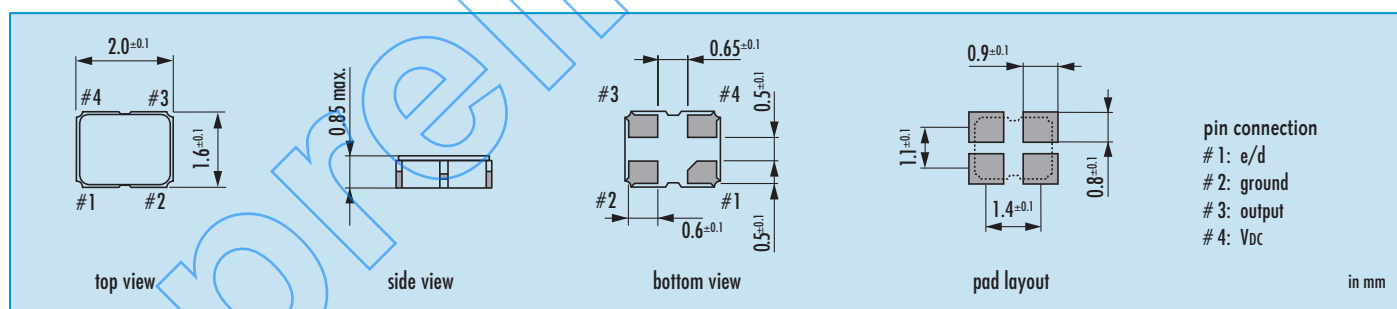
Table 2: Current Consumption max.

2.5 V: current at 15pF load:	
1.625 ~ 19.9 MHz	4.0 mA
20.000 ~ 39.9 MHz	5.5 mA
40.000 ~ 54.0 MHz	9.0 mA

Table 3: Rise & Fall Time max.

5 ns: 1.625 ~ 54.0 MHz	note: - specific data on request - rise time: 0.1 V <sub>DC</sub> ~ 0.9 V <sub>DC</sub> - fall time: 0.9 V <sub>DC</sub> ~ 0.1 V <sub>DC</sub>
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## Dimensions



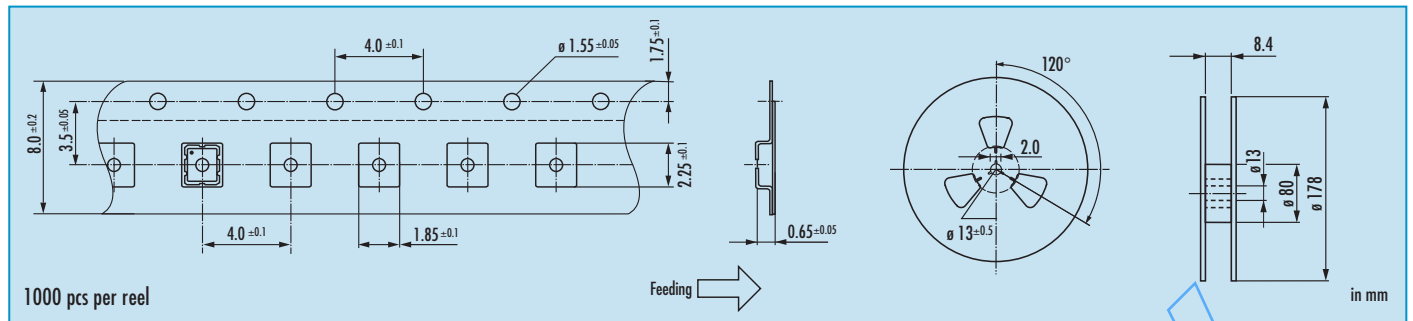
## Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.625 ~ 54.0 MHz	JO21	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO21-B-2.5-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)

# Oscillator · JO21 · 2.5 V · Stop Function

## Taping Specification



## Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ( $V_{IH} \square 0.7 V_{DC}$ )	active
low "0" ( $V_{IL} \square 0.3 V_{DC}$ )	high impedance

**stop function:**

- oscillator stops
- output high impedance

## Marking

frequency  
company code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

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

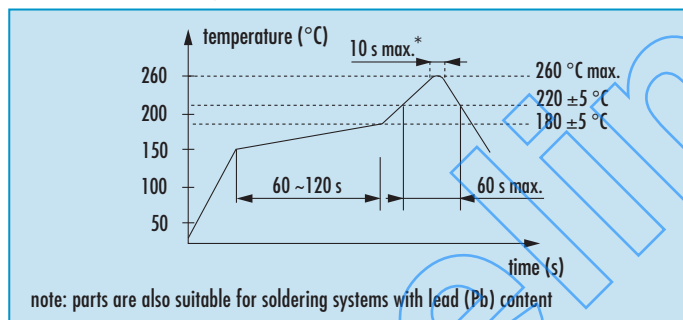
0: 2010    3: 2013

1: 2011    4: 2014

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

2: 2012    5: 2015

## Reflow Soldering Profile



## Packing Note

- standard packing units are 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

\* hand soldering temperature should not exceed 280 °C