



actual size

# Oscillator JO21 · 2.5 V

- SMD Oscillator with Stop Function · 2.0 x 1.6 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		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	see table 1
	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 <sub>DC</sub> - 0.4 V
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.	

\* 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 ± 100 ppm	B ± 50 ppm	G ± 30 ppm	C ± 25 ppm
-20 °C ~ +70 °C		○	○	□
-40 °C ~ +85 °C	T1	○	○	
-40 °C ~ +105 °C	T2	○		

○ available □ excludes aging

## TABLE 2: CURRENT CONSUMPTION MAX.

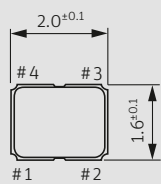
2.5 V: current at 15pF load:

1.625 ~ 19.9 MHz	4.0 mA
20.000 ~ 39.9 MHz	5.5 mA
40.000 ~ 54.0 MHz	9.0 mA

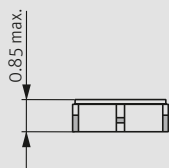
## TABLE 3: RISE & FALL TIME MAX.

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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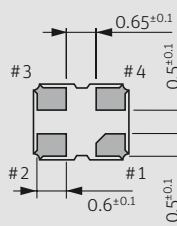
## DIMENSIONS



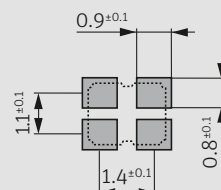
top view



side view



bottom view



pad layout

# 1: e/d  
# 2: ground  
# 3: output  
# 4: V<sub>DC</sub>

pin connection

in mm

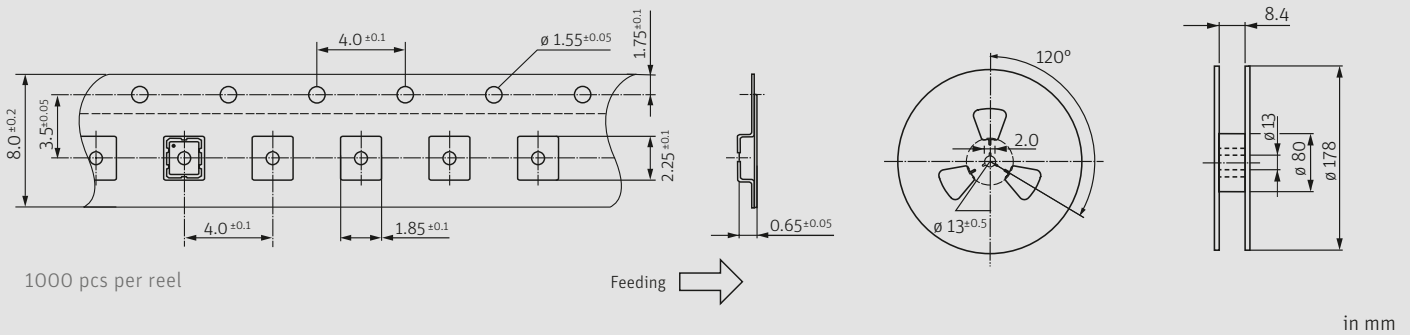
## ORDER INFORMATION

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 T2 = -40 °C ~ +105 °C

Example: 0 20.0-JO21-B-2.5-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

# Oscillator J021 · 2.5 V · Stop Function

## TAPING SPECIFICATION



## ENABLE / DISABLE FUNCTION

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

### stop function:

- oscillator stops
- output high impedance

## MARKING

### frequency

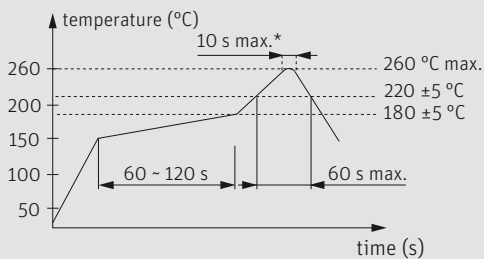
### company stability code / data code

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

7: 2017   8: 2018   9: 2019   0: 2020   1: 2021   2: 2022

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

\* hand soldering temperature should not exceed 280 °C