



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	JO22 2.5 V
frequency range	0.85 ~ 50.0 MHz
frequency stability over all*	± 50 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	2.5 V ± 5%
temperature	operating: -20 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +100 °C
output	rise & fall time: see table 3 load max: 15 pF current max.: 4 mA low level max.: 0.1 x V _{DC} high level min.: 0.9 x V _{DC}
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	5 µA
symmetry at 0.5 x V _{DC}	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	A	B			
	± 100 ppm	± 50 ppm			
-20 °C ~ +70 °C		○			
-40 °C ~ +85 °C	○	○			
● standard ○ available					

* 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:

0.85 ~ 19.9 MHz	4.5 mA
20.00 ~ 39.9 MHz	5.5 mA
40.00 ~ 50.0 MHz	6.5 mA

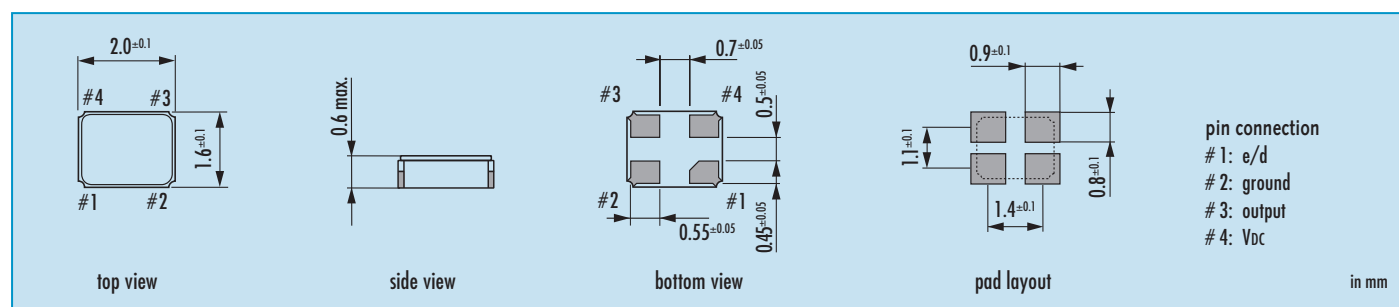
Table 3: Rise & Fall Time max.

5 ns: 0.85 ~ 50.0 MHz

note:

- specific data on request
- rise time: 0.1 V_{DC} ~ 0.9 V_{DC}
- fall time: 0.9 V_{DC} ~ 0.1 V_{DC}

Dimensions



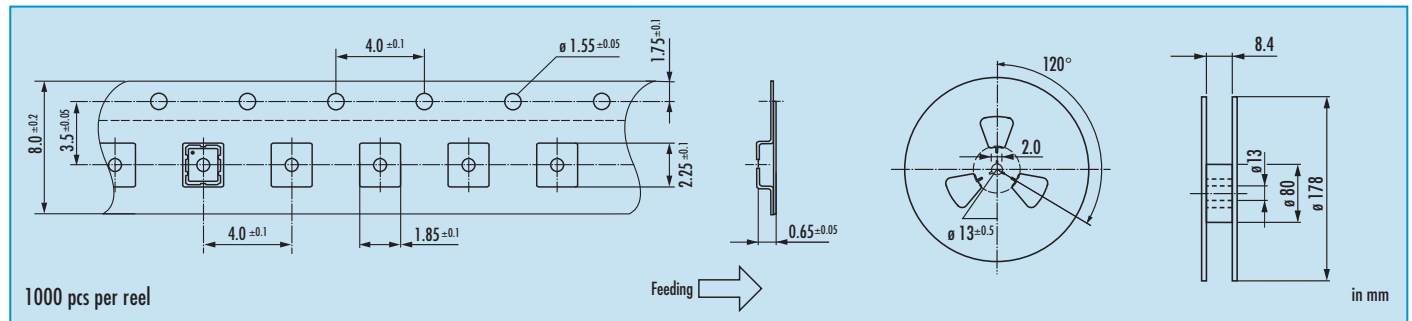
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.85 ~ 50.0 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 (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" ($V_{IH} \geq 0.8 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.2 V_{DC}$)	high impedance
stop function: - oscillator stops - output high impedance	

Marking

frequency

J / stability code / date code

date code:

A ~ M: Jan.- Dec.

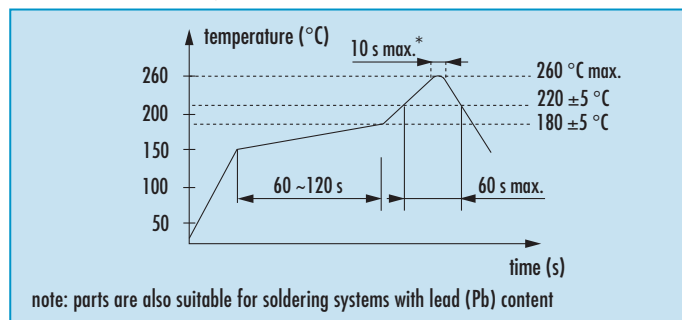
9: 2009

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

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