



actual size

Oscillator · JO22 · 2.5 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- very low current consumption
- HCMOS/LVCMOS output
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 2.5 V	
frequency range	0.75 ~ 50.0 MHz	
frequency stability over all*	± 25 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 up to -40 °C ~ +105 °C
	storage	-55 °C ~ +105 °C
output	rise & fall time	see table 3
	load max.	15 pF
	current max.	4 mA
	low level max.	0.4 V
	high level min.	V _{DC} - 0.4 V
output enable time max.	10 ms	
output disable time max.	50 µs	
start-up time max.	10 ms	
standby function	stop	
standby current max.	10 µA	
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS	
symmetry at 0.5 x V _{DC}	45 % ~ 55 % max.	

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				

● standard ○ available △ 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:	
0.75 ~ 19.9 MHz	5 mA
20.00 ~ 39.9 MHz	6 mA
40.00 ~ 50.0 MHz	7 mA

Table 3: Rise & Fall Time max.

5 ns: 0.75 ~ 50.0 MHz	<p>note:</p> <ul style="list-style-type: none"> - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
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Dimensions

pin connection
 # 1: e/d
 # 2: ground
 # 3: output
 # 4: V_{DC}

in mm

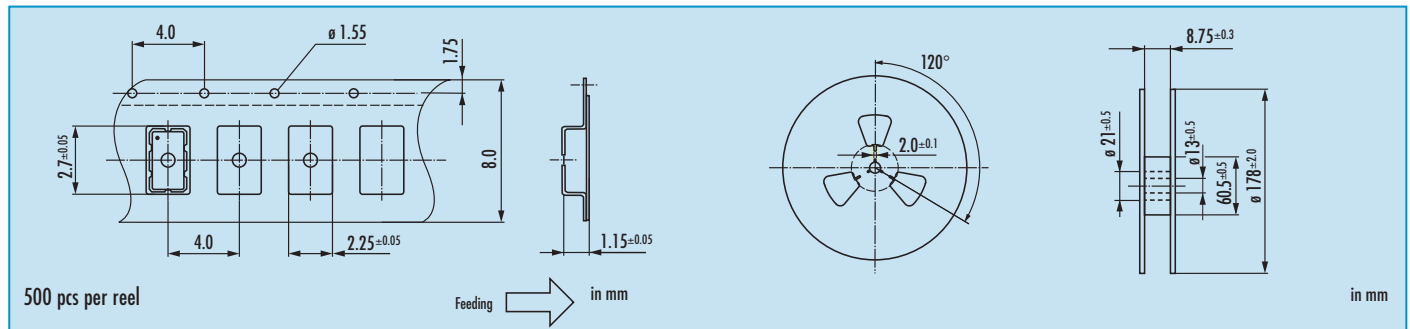
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	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: O 20.0-JO22-B-2.5-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO22 · 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:	
<ul style="list-style-type: none"> • oscillator stops • output high impedance 	

Marking

frequency

company code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

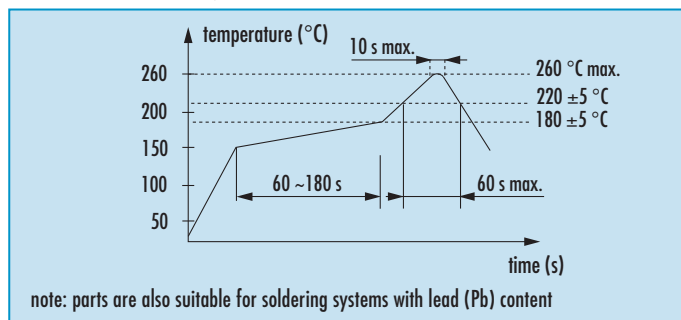
3: 2013 6: 2016

4: 2014 7: 2017

5: 2015 8: 2018

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

* hand soldering temperature should not exceed 280 °C