



actual size

Oscillator JO32 · 2.8 V

- SMD Oscillator with Stop Function · 3.2 x 2.5 mm
- LVCMOS / HCMOS compatible output
- Low phase jitter, no PLL
- Seam sealed ceramic/metal package



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA

TYPE		JO32 2.8 V
frequency range	STD & T1	0.75 ~ 50.0 MHz (30 pF max.)
		0.75 ~ 170.0 MHz (15 pF max.)
	T2	1.25 ~ 170.0 MHz (15 pF max.)
	T3*	1.25 ~ 135.0 MHz (15 pF max.)
frequency stability over all**		± 20 ppm ~ ± 100 ppm (table 1)
current consumption		see table 2
supply voltage V _{DC}		2.8 V ± 10 % (± 5 % for stab. C & D)
temperature	operating	-20 °C ~ +70 °C (STD)
		-40 °C ~ +85 °C (T1)
		-40 °C ~ +105 °C (T2)
		-40 °C ~ +125 °C (T3*)
storage		-55 °C ~ +125 °C
output	rise & fall time	see table 3
	load max.	15 pF / 30 pF (≤ +85 °C and ≤ 50.0 MHz)
	current max.	4 mA / 5 mA
	low level max.	0.1 x V _{DC} / 0.4 V for T2 & T3*
	high level min.	0.9 x V _{DC} / V _{DC} - 0.4V for T2 & T3*
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 / 20 μA (for T2 & T3*)
phase jitter 12 kHz ~ 20.0 MHz		< 1.0 ps RMS
symmetry at 0.5 x V _{DC}		45% ~ 55% typ. (40% ~ 60% max.)

TABLE 1: FREQUENCY STABILITY CODE

stability code		A	B	G	C	D
		± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm	± 20 ppm
-20 °C ~ +70 °C	STD		○	○	○	△
-40 °C ~ +85 °C	T1	○	○	○	□	
-40 °C ~ +105 °C	T2	○	○			
-40 °C ~ +125 °C	T3*	○	○			

○ available □ excludes aging △ if ≤ 50.0 MHz, excludes aging

* ask if available

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

TABLE 2: CURRENT CONSUMPTION MAX.

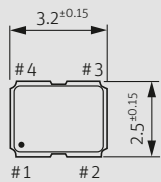
Current at 15 pF load:		Current at 30 pF load:	
0.75 ~ 19.9 MHz	4 mA	0.75 ~ 19.9 MHz	6 mA
20.00 ~ 39.9 MHz	7 mA	20.00 ~ 39.9 MHz	13 mA
40.00 ~ 59.9 MHz	16 mA	40.00 ~ 50.0 MHz	18 mA
60.00 ~ 79.9 MHz	18 mA		
80.00 ~ 134.9 MHz	40 mA		
135.00 ~ 170.0 MHz	50 mA		

TABLE 3: RISE & FALL TIME MAX.

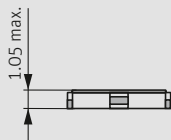
at 15 pF		at 30 pF	
5 ns: 0.75 ~ 59.99 MHz		8 ns: 0.75 ~ 50.00 MHz	
5 ns: 60.00 ~ 79.99 MHz			
4 ns: 80.00 ~ 134.99 MHz			
3 ns: 135.00 ~ 170.00 MHz			

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

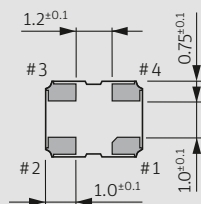
DIMENSIONS



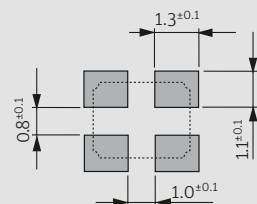
top view



side view



bottom view



pad layout

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

pin connection

in mm

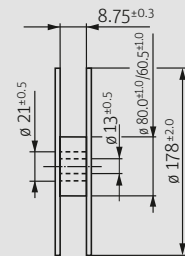
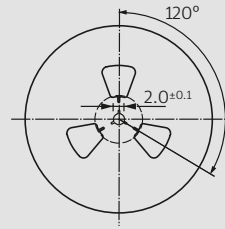
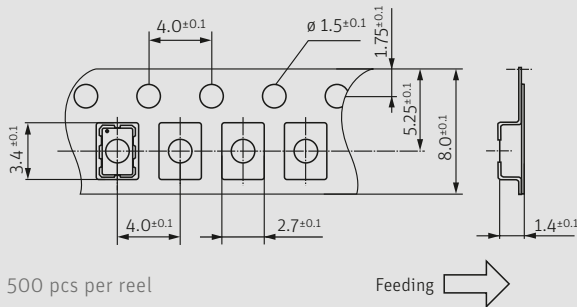
ORDER INFORMATION

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 170.0 MHz	JO32	see table 1	2.8 = 2.8 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C

Example: O 20.0-JO32-B-2.8-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

Oscillator J032 · 2.8 V · Stop Function

TAPING SPECIFICATION



in mm

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

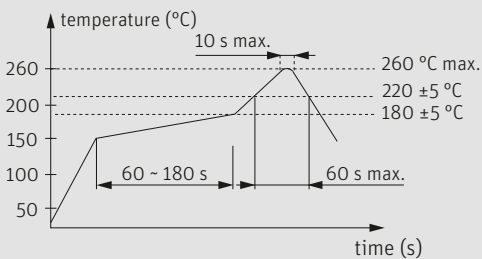
company stability code / data code

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