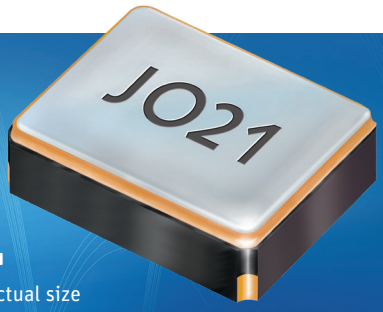


actual size

Oscillator JO21 · low voltage

- SMD Oscillator with Stop Function • 2.0 x 1.6 mm
- very low supply voltage 0.9V ~ 1.8V
- 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 low voltage 0.9 V ~1.8 V
frequency range		5.0 ~ 54.0 MHz
frequency stability over all*		± 25 ppm ~ ± 100 ppm see table 1
freq. variation vs. supply volt.		± 1 ppm referred to supply voltage 1.2 V ± 10%
current consumption		see table 2
supply voltage V_{DC}		0.9 V -10% ~ 1.8 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.	1.0 mA
	low level max.	0.1 x V_{DC}
	high level min.	0.9 x V_{DC}
output enable time max.		5 ms
output disable time max.		100 ns
start-up time max.		5 ms
standby function		stop
standby current max.		50 µA
symmetry at 0.5 x V_{DC}		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	Δ			

○ available □ excludes aging Δ case-by-case, ask for availability

TABLE 2: CURRENT CONSUMPTION MAX.

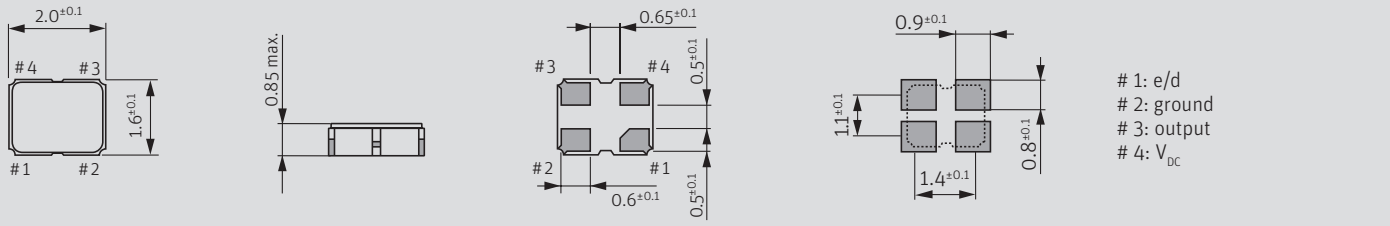
1.8 V: current at 15pF load:
5.0 ~ 54.0MHz 5.5 mA

0.9 V: current at 15pF load:
5.0 ~ 54.0MHz 3.5 mA

TABLE 3: RISE & FALL TIME MAX.

5 ns: 5.0 ~ 54.0 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



top view · side view · bottom view · pad layout · pin connection · in mm

ORDER INFORMATION

0	frequency	–	type	–	frequency stability code	–	supply voltage code	–	output load code	–	option
Oscillator	5.0 ~ 54.0 MHz		JO21		see table 1		OV8 = 0.9 V ~ 1.8 V		1 = 15 pF		blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

Example: O 20.0-JO21-B-OV8-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

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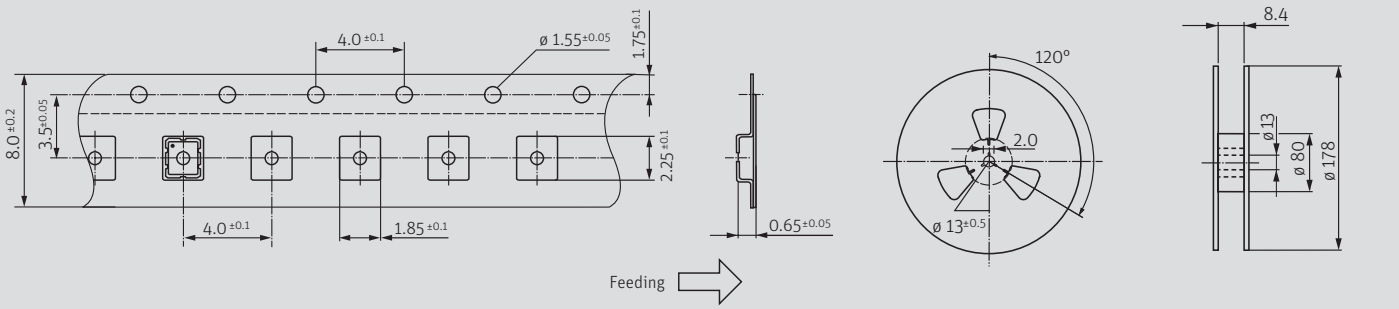
Oscillator JO21 · low voltage

TAPING SPECIFICATION



in mm

ENABLE / DISABLE FUNCTION

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" (V_{IH} ≥ 0.8 V_{DC})	active
low "0" (V_{IL} ≤ 0.2 V_{DC})	high impedance

stop function:
- oscillator stops
- output high impedance

note:
- internal pull-up resistor is weak
- external pull-up is recommended

MARKING

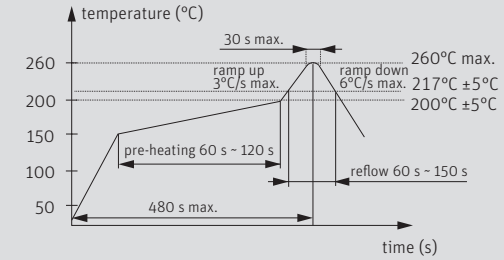
frequency
company stability code / date code

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

6: 2016 7: 2027 8: 2028 9: 2029 0: 2030 1: 2031

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
– customized quantities on request

* hand soldering temperature should not exceed 280 °C

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