



actual size

Oscillator JO23HT · 1.8 V ~ 3.3 V

- high stability oscillator with HCMOS output · 2.5 x 2.0 mm
- wide operating temperature range up to +105 °C
- variable supply voltage, excellent phase noise
- with standby function, very low standby current
- seam sealed ceramic/metal package



RoHS compliant



Pb free



REACH
compliant



Conflict
mineral free

GENERAL DATA

TYPE		JO23HT 1.8 V ~ 3.3 V
frequency range		12.0 ~ 52.0 MHz
frequency stability over all*		± 10 ppm ~ ± 20 ppm / ± 25 ppm (T2)
		see table 1
aging 1st year		± 2 ppm max.
current consumption max.		5 mA ≤ 26.0 MHz / 7 mA ≤ 52.0 MHz
supply voltage V _{DC}		1.8 V -5% ~ 3.3 V +10% variable
temperature	operating	-20 °C ~ +70 °C up to -40 °C ~ +105 °C
	storage	-40 °C ~ +105 °C
output	rise & fall time	5 nsec max. (at 0.1 V _{DC} ↔ 0.9 V _{DC})
	load max.	15 pF
	current max.	0.4 mA
	low level max.	0.2 x V _{DC}
	high level min.	0.8 x V _{DC}
output enable time max.		3 ms
output disable time max.		150 µs
start-up time max.		3 ms
standby function		stop
standby current		1 µA typ. / 10 µA max.
phase jitter 12 kHz ~ 20.0 MHz		< 0.5 ps RMS max. / 0.3 ps RMS typ.
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 / temperature code		C ± 25 ppm	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm
-20 °C ~ +70 °C			○	○	○
-40 °C ~ +85 °C	T1		○	○	○
-40 °C ~ +105 °C	T2	○	○		

○ available

ENABLE / DISABLE FUNCTION

PIN #1 (E/D CONTROL)

PIN #3 (OUTPUT)

high "1" (V_{IH} ≥ 0.8 V_{DC})

active (see note)

low "0" (V_{IH} ≥ 0.2 V_{DC})

high impedance

stop funktion:

- oscillator stops and output changes to high impedance

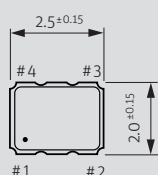
NOTE

- e/d control pin #1 has a weak internal pull-up, use external pull-up of 10kOhm to ensure TCXO activation
- for best supply noise rejection, connect a capacitor closely to the supply voltage pins; a separate voltage supply rail ensures best phase noise

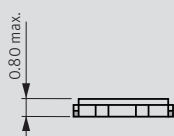
PHASE NOISE AT FO 40.0 MHz

at 100 Hz	-115 dBc/Hz typ.
at 1 kHz	-135 dBc/Hz typ.
at 10 kHz	-149 dBc/Hz typ.

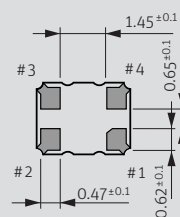
DIMENSIONS



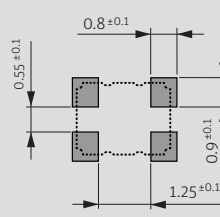
top view



side view



bottom view



pad layout

JO23HT
1: e/d
2: ground
3: output
4: V_{DC}

pin connection

in mm

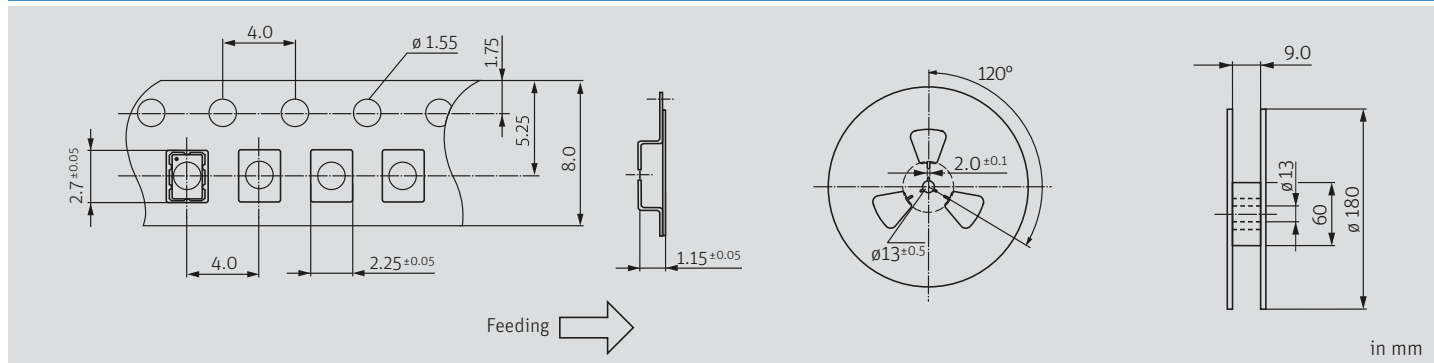
ORDER INFORMATION

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	12.0 ~ 52.0 MHz	JO23HT	see table 1	1V3 = 1.8 V ~ 3.3 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

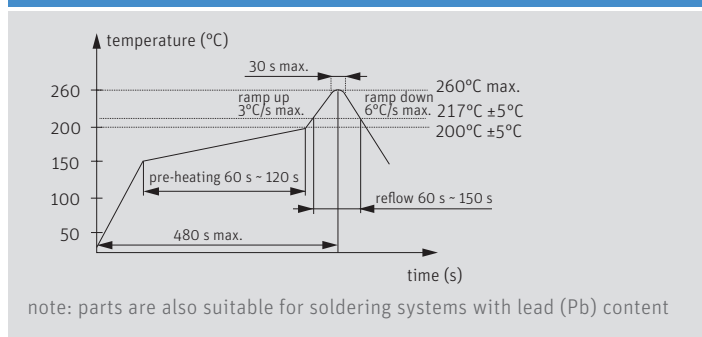
Example: 0 20.0-JO23HT-F-1V3-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

Oscillator J023HT · 1.8 V ~ 3.3 V · High Stability Low Power Oscillator

TAPING SPECIFICATION



REFLOW SOLDERING PROFILE



* hand soldering temperature should not exceed 280 °C

MARKING

frequency

company stability code / date code

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

5: 2025 6: 2026 7: 2027 8: 2028 9: 2029 0: 2030

Jan.	Febr.	Mar.	Apr.	May	June
A	B	C	D	E	F
July	Aug.	Sept.	Oct.	Nov.	Dec.
G	H	J	K	L	M

PACKAGING NOTE

- standard packing unit is 3000 pieces per reel
- non-multiple packing units are only supplied taped / bulk