



actual size

# Oscillator JOE53 · PECL · 2.5 V

- SMD Low Voltage PECL Oscillator, 5.0 x 3.2 mm
- drives fast PECL logic
- complementary outout, low EMI
- compact & flat ceramic / metal package



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

## GENERAL DATA

TYPE		JOE53 2.5V (3rd OT)
frequency range		65.0 ~ 190.0 MHz
frequency stability over all*		± 25 ppm ~ ± 100 ppm (see table 1)
current consumption		55 mA max.
supply voltage V <sub>DC</sub>		2.5 V ±5%
temperature	operating	-20 °C ~ +70 °C (T0)
		-40 °C ~ +85 °C (T1)
		-40 °C ~ +105 °C (T2*)
		-40 °C ~ +125 °C (T3*)
	storage	-55 °C ~ +125 °C
output	rise & fall time	0.6 ns (20% ~ 80% of V <sub>pp</sub> )
	load nom.	50 Ω at 0.5 V
	low level max.	0.88 V
	high level min.	1.47 V
output enable time max.		10 ms
output disable time max.		200 ns
start-up time max.		10 ms
standby function		stop
standby current max.		10 μA
phase jitter 12 kHz ~ 20.0 MHz		< 0.5 ps RMS
symmetry at 50% of V <sub>pp</sub>		45% ~ 55% (40% ~ 60% if T3)

\* ask for availability of higher temperature ranges and frequency stabilities

## TABLE 1: FREQUENCY STABILITY CODE

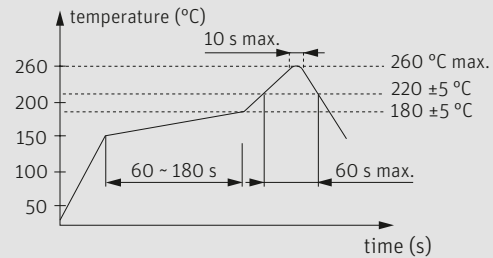
stability code		A	B	G	C
temp. code*		± 100 ppm	±50 ppm	± 30 ppm	± 25 ppm
-20 °C ~ +70 °C	T0	○	○	○	○
-40 °C ~ +85 °C	T1	○	○	○	
-40 °C ~ +105 °C	T2*	○	○		
-40 °C ~ +125 °C	T3*	○	○		

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

## ENABLE / DISABLE FUNCTION

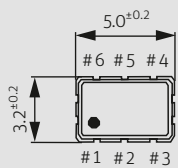
pin #1 (e/d control)	pin #4 / #5 (outputs)
open or ≥ 0.7 V <sub>CC</sub>	enable
gnd or ≥ 0.3 V <sub>CC</sub>	high impedance

## REFLOW SOLDERING PROFILE

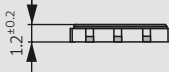


note: parts are also suitable for soldering systems with lead (Pb) content

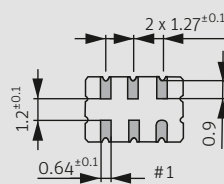
## DIMENSIONS



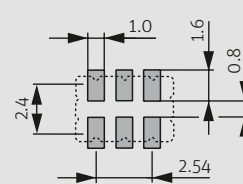
top view



side view



bottom view



pad layout

- # 1: e/d
- # 2: nc
- # 3: ground
- # 4: output 1
- # 5: output 2
- # 6: V<sub>CC</sub>

in mm

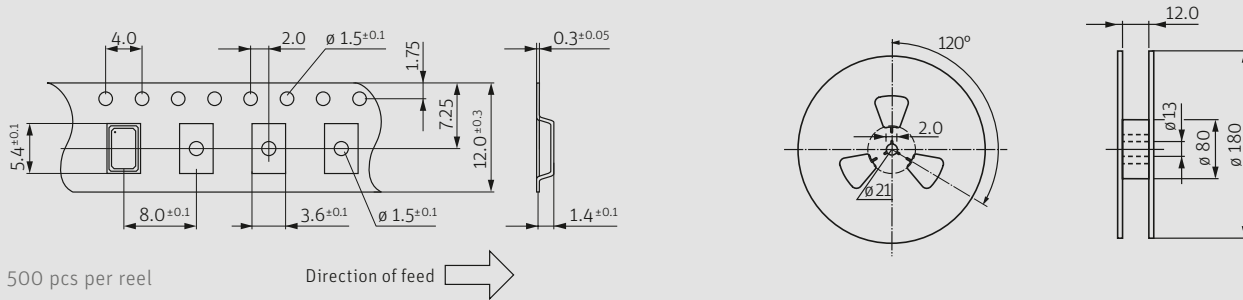
## ORDER INFORMATION

0	frequency	type	frequency stability code	supply voltage code	option
Oscillator	65.0 ~ 190.0 MHz	JOE53	see table 1	2.5 = 2.5 V	T0 = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C please ask T3 = -40 °C ~ +125 °C please ask

**Example: 0 156.250-JOE53-B-2.5-T1-LF** (Suffix LF = RoHS compliant / Pb free)

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## TAPING SPECIFICATION



in mm

## PACKAGING NOTE

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

## MARKING

company code / frequency

□ CF / internal code / data code

date 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