



actual size

# Oscillator JT21G · JT21GE · TCXO for GPS

- Temp. Compensated Crystal Oscillator, 2.0 x 1.6 mm
- special type for navigation systems (GPS etc.)
- high stability  $\pm 0.5$  ppm
- temperature range up to  $-40$  °C ~  $+85$  °C
- JT21GE with enable/disable function



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

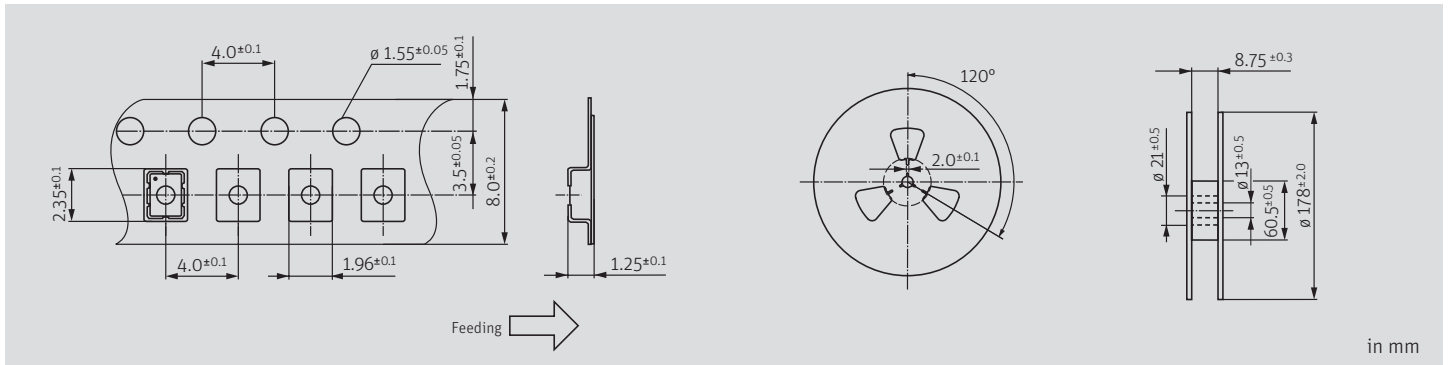
GENERAL DATA		ENABLE / DISABLE FUNCTION	
<b>TYPE</b>	<b>JT21G TCXO / JT21GE with E/D</b>		
frequency range	26.0 / 38.40 MHz (other frequ. case by case)		
frequency tolerance/ stability	at +25°C	$\pm 2.0$ ppm (incl. 2x reflow)	
	temperature	$\pm 0.5$ ppm (stability code E)	
	aging first year	$\pm 1$ ppm	
	supply voltage	$\pm 0.2$ ppm (at $V_{DC} \pm 5\%$ )	
	load change	$\pm 0.2$ ppm (at 10 K $\Omega$    10 pF +/-10 %)	
current consumption	2.0 mA (at 26.0 / 38.40 MHz)		
supply voltage $V_{DC}$	1.8 / 2.5 / 2.8 / 3.0 / 3.3 ( $\pm 5\%$ ) *		
temperature	operating	$-30$ °C ~ $+85$ °C (temperature code M)	
	storage	$-40$ °C ~ $+85$ °C	
output	load nom.	10 K $\Omega$ // 10 pF	
	level min.	0.8 V <sub>pp</sub> (clipped sine)	
temperature slope max.	0.1 ppm / °C (at max. temp step 2 °C)		
static frequency hysteresis (max. frequency difference at +25°C, measured before and after a full cold-hot-cold cycle)	0.6 ppm		
start-up time max.	2.5 ms		
phase noise	at 100 Hz	$-117$ dBc/Hz typ.	
	at $f_0$	$-137$ dBc/Hz typ.	
26 MHz	at 10 KHz	$-149$ dBc/Hz typ.	
<b>PIN #1 (E/D CONTROL)</b>	<b>PIN #3 (OUTPUT)</b>		
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 (JT21GE only):			
- oscillator stops			
- output high impedance			
- disabled supply current: 2 $\mu$ A typ. / 5.5 $\mu$ A max.			
<b>PACKAGING NOTE</b>			
- standard packing unit is 500 pieces per reel			
- customized quantities on request			
<b>NOTE</b>			
- JT21G: connect pin #1 to GND / JT21GE: pin #1 is enable/disable			
- external AC coupling for output recommended			
- for best supply noise rejection, connect a capacitor closely to the supply voltage pins			
- a separate voltage supply rail ensures best phase noise			
* other nominal supply voltages within 1.8 V ~ 3.3 V need to be specified, ask for availability			

DIMENSIONS														
<p>top view</p>	<p>side view</p>	<p>bottom view</p>	<p>pad layout</p>	<table border="0"> <tr> <td>TCXO JT21G</td> <td>TCXO with e/d JT21GE</td> </tr> <tr> <td># 1: GND</td> <td># 1: e/d</td> </tr> <tr> <td># 2: GND</td> <td># 2: GND</td> </tr> <tr> <td># 3: output</td> <td># 3: output</td> </tr> <tr> <td># 4: <math>V_{DC}</math></td> <td># 4: <math>V_{DC}</math></td> </tr> </table>	TCXO JT21G	TCXO with e/d JT21GE	# 1: GND	# 1: e/d	# 2: GND	# 2: GND	# 3: output	# 3: output	# 4: $V_{DC}$	# 4: $V_{DC}$
TCXO JT21G	TCXO with e/d JT21GE													
# 1: GND	# 1: e/d													
# 2: GND	# 2: GND													
# 3: output	# 3: output													
# 4: $V_{DC}$	# 4: $V_{DC}$													
				pin connection	in mm									

ORDER INFORMATION					
<b>0</b>	frequency	type	frequency stability code	operating temp. code	supply voltage
Oscillator	26.0 = 26.0 MHz 38.40 = 38.40 MHz	JT21G JT21GE	E = $\pm 0.5$ ppm	M = $-30$ °C ~ $+85$ °C K = $-40$ °C ~ $+85$ °C	1.8 = 1.8 V 2.5 = 2.5 V 2.8 = 2.8 V 3.0 = 3.0 V 3.3 = 3.3 V
<b>Example: 0 26.0-JT21G-E-M-3.3-LF</b> (Suffix LF = RoHS compliant / Pb free)					

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## TAPING SPECIFICATION



## MARKING

frequency

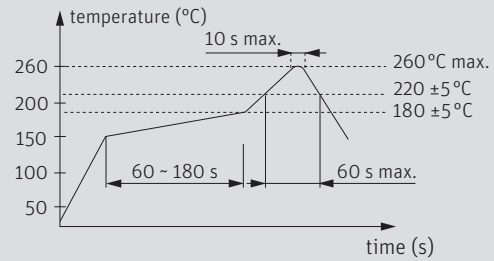
company code / stability code / date code

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

9: 2019   0: 2020   1: 2021   2: 2022   3: 2023   4: 2024

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