



actual size

# Oscillator J053 · 1.8 V

- SMD Oscillator with Stop Function · 5.0 x 3.2 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	J053 1.8 V	
frequency range	STD & T1	0.50 ~ 50.0 MHz (30 pF max.)
		0.50 ~ 160.0 MHz (15 pF max.)
	T2	2.0 ~ 120.0 MHz (15 pF max.)
	T3*	2.0 ~ 120.0 MHz (15 pF max.)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)	
current consumption	see table 2	
supply voltage $V_{DC}$	1.8 V ± 10 % (± 5 % for stab. C & D)	
temperature	operating	-10 °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.	2.8 mA / 4 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.	150 ns / 200 ns (T2 & T3*)	
start-up time max.	10 ms	
standby function	stop	
standby current max.	10µA / 20µA (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
-10 °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:	
0.5 ~ 29.9 MHz	7 mA	0.5 ~ 29.9 MHz	10 mA
30.0 ~ 39.9 MHz	7 mA	30.0 ~ 50.0 MHz	13 mA
40.0 ~ 89.9 MHz	20 mA		
90.0 ~ 160.0 MHz	32 mA		

TABLE 3: RISE & FALL TIME MAX.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 29.99 MHz	8 ns: 0.50 ~ 50.00 MHz
5 ns: 30.00 ~ 39.99 MHz	
5 ns: 40.00 ~ 49.99 MHz	
4 ns: 50.00 ~ 69.99 MHz	
3 ns: 70.00 ~ 160.00 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      pin connection      in mm

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

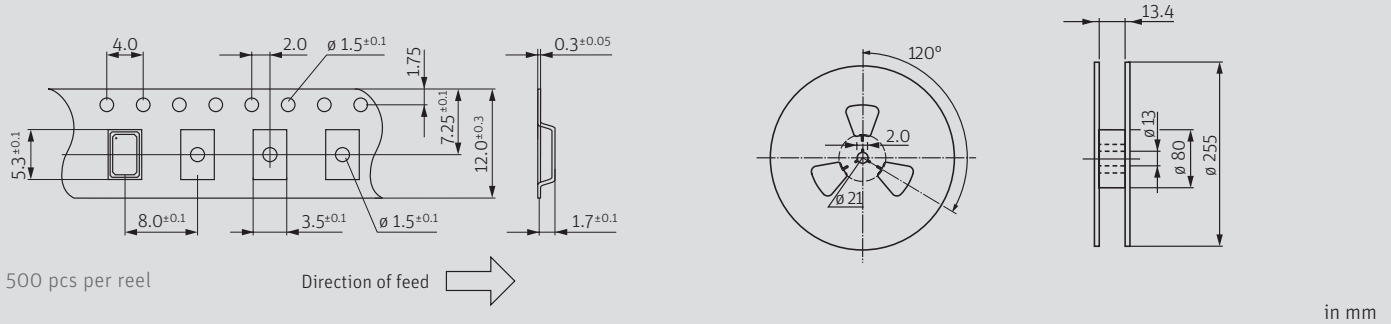
### ORDER INFORMATION

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 160.0 MHz	J053	see table 1	1.8 = 1.8 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C

**Example:** 0 20.0-J053-B-1.8-1-T1-LF (Suffix LF = RoHS compliant / Pb free)

# Oscillator J053 · 1.8 V · Stop Function

## TAPING SPECIFICATION



## 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

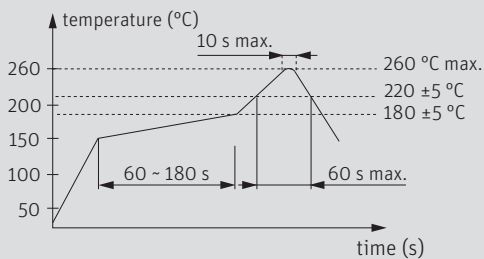
### company stability code / voltage data code

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