



actual size

Oscillator · Spread Spectrum

SMD Spread Spectrum Crystal Oscillator · 5.0 x 3.2 mm

- different spread widths /modulations available
- reduced EMI type
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JSS53
frequency range	12.0 ~ 168.0 MHz
frequency stability over all*	± 50ppm / ± 100ppm (see table 1)
center spread modulation	± 0.5% / ± 1.0% / ± 2.0%
down spread modulation	-1.0% / -2.0% / -4.0%
current consumption	see table 2
supply voltage V_{DC}	3.3 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -40 °C ~ +85 °C
output	rise & fall time: see table 2 load max.: 15pF current max.: 8 mA low level max.: $0.2 \times V_{DC}$ high level min.: $0.8 \times V_{DC}$
output enable time max.	10ms
output disable time max.	10ns
start-up time max.	10ms
standby function	stop
jitter	see table 4
symmetry at 50% of V_{pp}	45% ~ 55% typ. (40% ± 60% max.)

Table 1: Frequency Stability Code

stability code	A	B		
	± 100 ppm	± 50 ppm		
-10 °C ~ +70 °C		○		
-40 °C ~ +85 °C	○	○		
● standard ○ on request				

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

Table 2: Current Consumption max.

Current at 15pF load:	
12.0 ~ 28.0 MHz	13 mA
28.1 ~ 80.0 MHz	15 mA
80.1 ~ 168.0 MHz	30 mA

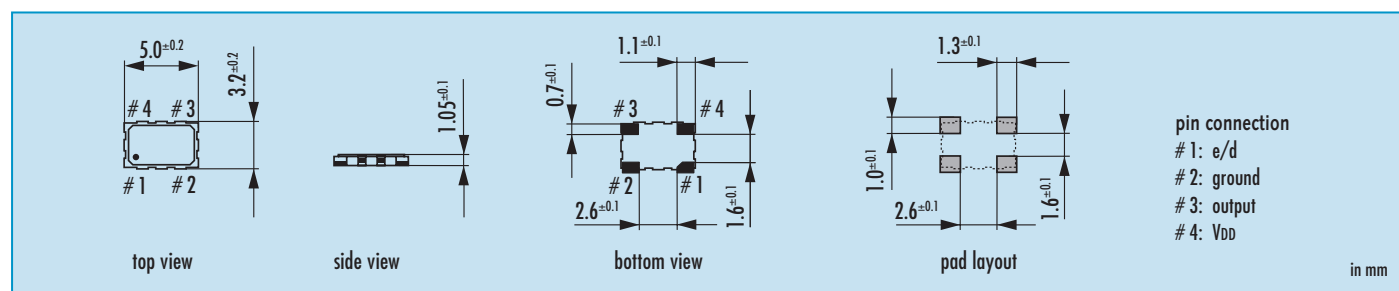
Table 3: Rise & Fall Time max.

5ns: 12.0 ~ 80.0 MHz	note: - specific data on request
4ns: 80.1 ~ 168.0 MHz	

Table 4: Jitter

jitter (cycle to cycle, sigma)	200ps max. (at 10.0 ~ 19.9 MHz)
	100ps max. (at 20.0 ~ 168.0 MHz)

Dimensions



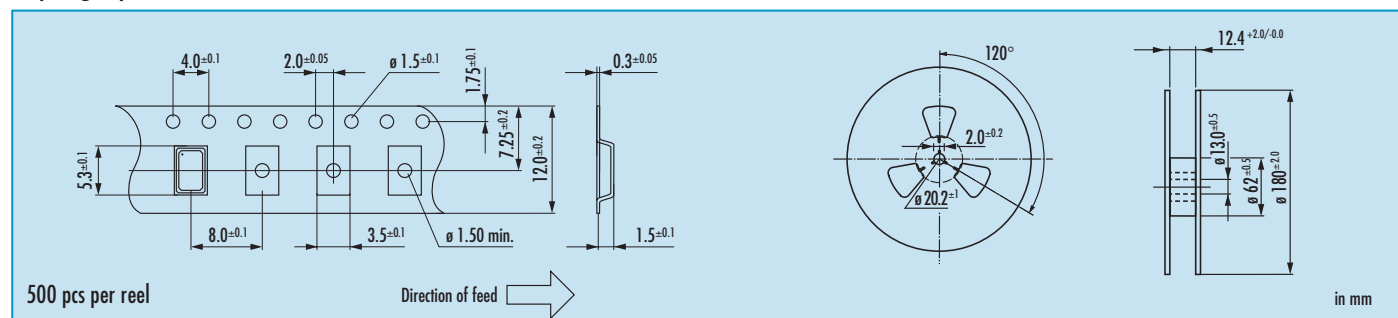
Order Information

0	frequency in MHz	type	frequency stability code	supply voltage code	center/down spread	output load code	option
Oscillator	12.0 ~ 168.0 MHz	JSS53	see table 1	3.3 = 3.3 V	C1 = ± 0.5% C2 = ± 1.0% } center C4 = ± 2.0% D1 = -1.0% D2 = -2.0% } down D4 = -4.0%	1 = 15 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C
Example: O 20.0-JSS53-B-3.3-C2-1 (Suffix LF = RoHS compliant / Pb free pins or pads)							



Oscillator · Spread Spectrum · JSS53 · 3.3 V

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

standby current: 20 μ A max.

stop function:

- oscillator stops
- output high impedance

Marking

S VDD C spread / frequency
stability / date code

date code:

A ~ M: Jan.- Dec.

7: 2007

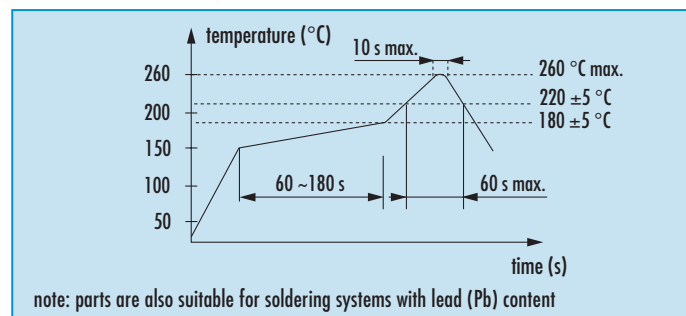
8: 2008

9: 2009

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



Packing Note

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