



actual size

Oscillator · JO21 · 1.8 V

SMD Oscillator with Stop Function · 2.0 x 1.6 mm

- ultra small package
- very low current consumption
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO21 1.8 V
frequency range	1.6250 ~ 54.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	1.8 V ± 10%
temperature	operating** -20 °C ~ +70 °C / -40 °C ~ +85 °C storage -65 °C ~ +125 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. $0.1 \times V_{DC}$ high level min. $0.9 \times V_{DC}$
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
symmetry at $0.5 \times V_{DC}$	45% ~ 55% max.

** ask if a 105 °C version is available

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	D		
-40 °C ~ +85 °C	○	○				
● standard ○ available D excludes aging						

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

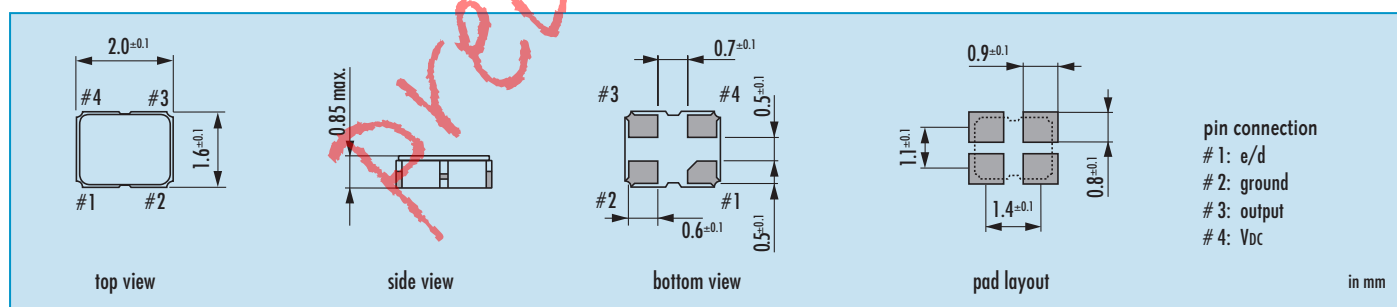
Table 2: Current Consumption max.

1.8 V: current at 15pF load:		
1.625 ~ 19.9 MHz	3.0 mA	
20.000 ~ 39.9 MHz	4.5 mA	
40.000 ~ 54.0 MHz	7.0 mA	

Table 3: Rise & Fall Time max.

6 ns: 1.625 ~ 54.0 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
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Dimensions



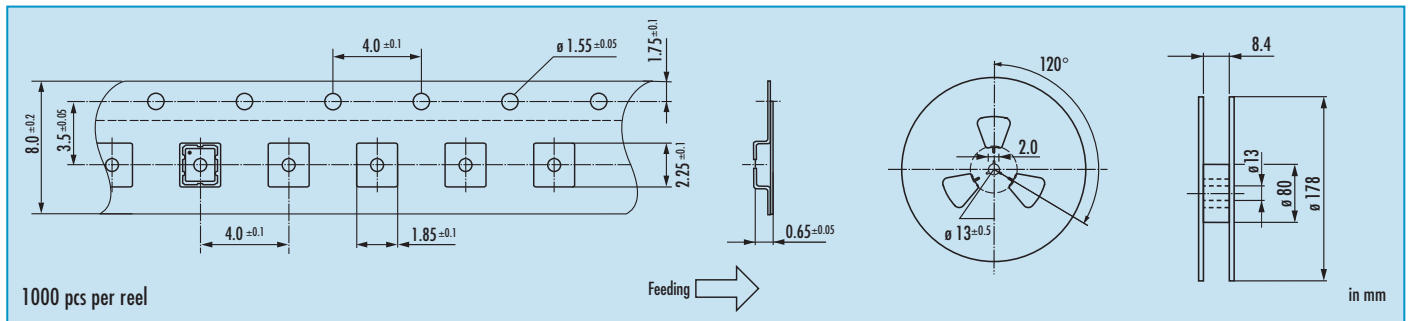
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.625 ~ 54.0 MHz	JO21	see table 1	1.8 = 1.8V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C
Example: O 20.0-JO21-B-1.8-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)						



Oscillator · JO21 · 1.8 V · Stop Function

Taping Specification



Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance

stop function:

- oscillator stops
- output high impedance

Marking

frequency

company code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

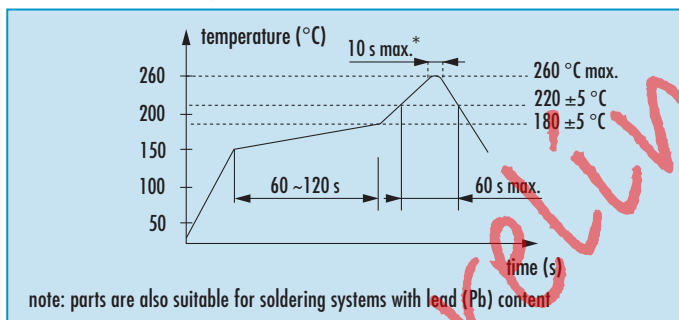
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO21 · 2.5 V

SMD Oscillator with Stop Function · 2.0 x 1.6 mm

- ultra small package
- low current consumption
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO21 2.5 V
frequency range	1.6250 ~ 54.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	2.5 V ± 10%
temperature	operating** -20 °C ~ +70 °C / -40 °C ~ +85 °C storage -65 °C ~ +125 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.1 x V_{DC} high level min. 0.9 x V_{DC}
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
symmetry at 0.5 x V_{DC}	45% ~ 55% max.

** ask if a 105 °C version is available

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	D		
-40 °C ~ +85 °C	○	○				
● standard ○ available D excludes aging						

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

Table 2: Current Consumption max.

2.5 V: current at 15pF load:

1.625 ~ 19.9 MHz	4.0 mA
20.000 ~ 39.9 MHz	5.5 mA
40.000 ~ 54.0 MHz	9.0 mA

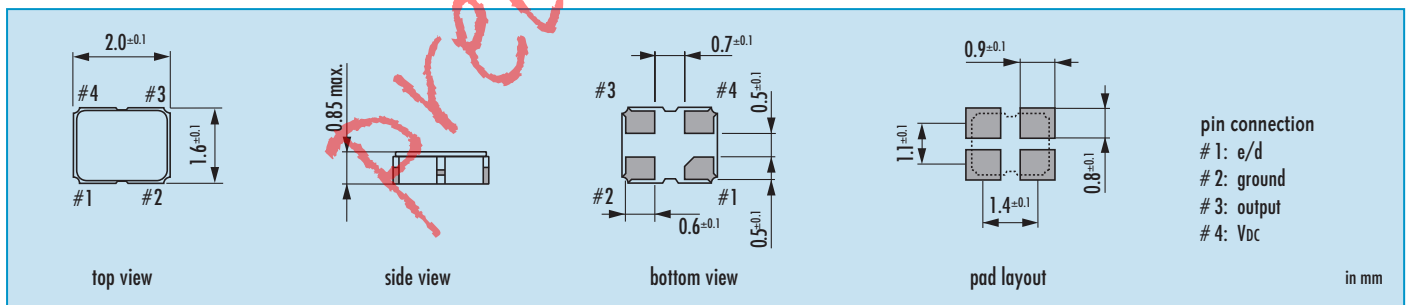
Table 3: Rise & Fall Time max.

5 ns: 1.625 ~ 54.0 MHz

note:

- specific data on request
- rise time: 0.1 V_{DC} ~ 0.9 V_{DC}
- fall time: 0.9 V_{DC} ~ 0.1 V_{DC}

Dimensions



Order Information

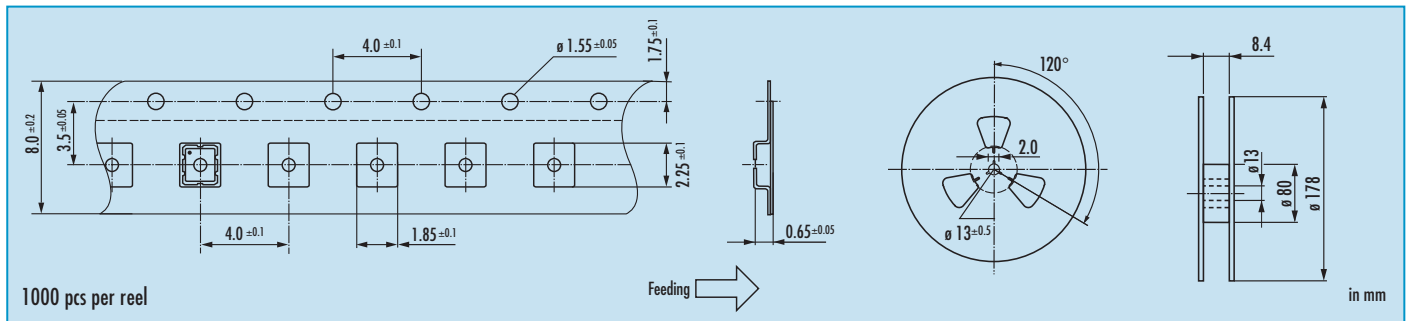
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.625 ~ 54.0 MHz	JO21	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO21-B-2.5-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO21 · 2.5 V · Stop Function

Taping Specification



Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops • output high impedance	

Marking

frequency

company code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

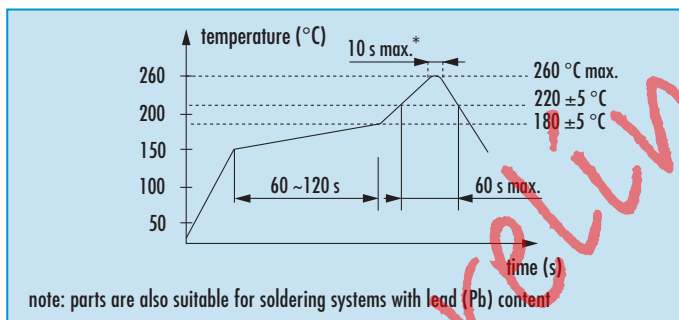
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO21 · 3.3 V

SMD Oscillator with Stop Function · 2.0 x 1.6 mm

- ultra small package
- low current consumption
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO21 3.3 V
frequency range	1.6250 ~ 54.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	3.3 V ± 10%
temperature	operating** -20 °C ~ +70 °C / -40 °C ~ +85 °C storage -65 °C ~ +125 °C
output	rise & fall time see table 3 load max. 15 pF current max. 4 mA low level max. $0.1 \times V_{DC}$ high level min. $0.9 \times V_{DC}$
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
symmetry at $0.5 \times V_{DC}$	45% ~ 55% max.

** ask if a 105 °C version is available

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	D		
-40 °C ~ +85 °C	○	○				
● standard ○ available D excludes aging						

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

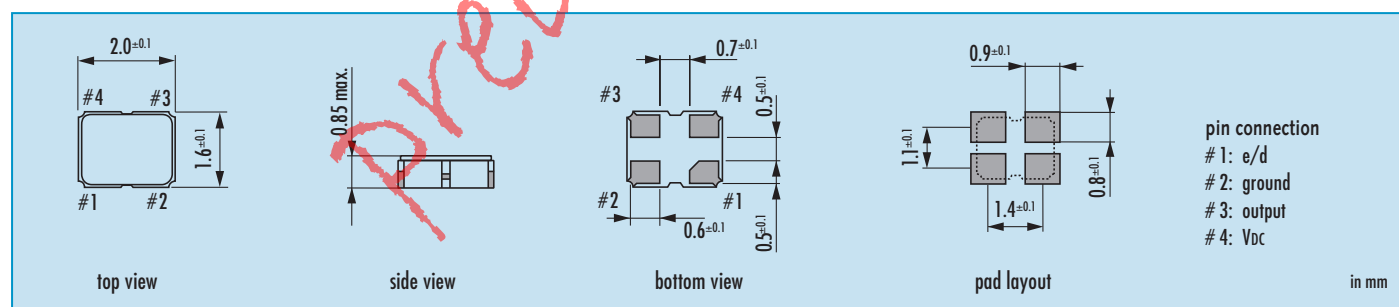
Table 2: Current Consumption max.

3.3 V: current at 15pF load:	
1.625 ~ 19.9 MHz	5.0 mA
20.000 ~ 39.9 MHz	7.0 mA
40.000 ~ 54.0 MHz	10.0 mA

Table 3: Rise & Fall Time max.

5 ns: 1.625 ~ 54.0 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
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Dimensions



Order Information

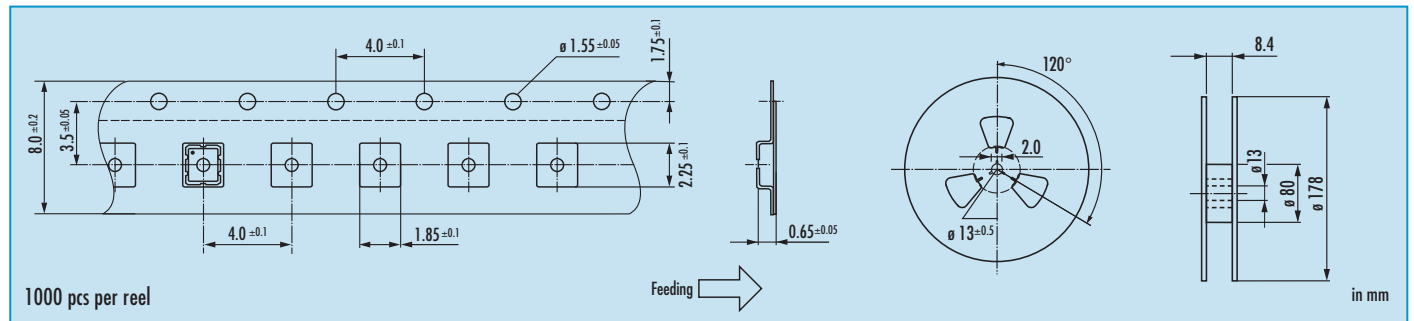
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.625 ~ 54.0 MHz	JO21	see table 1	3.3 = 3.3 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO21-B-3.3-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO21 · 3.3 V · Stop Function

Taping Specification



Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance

stop function:

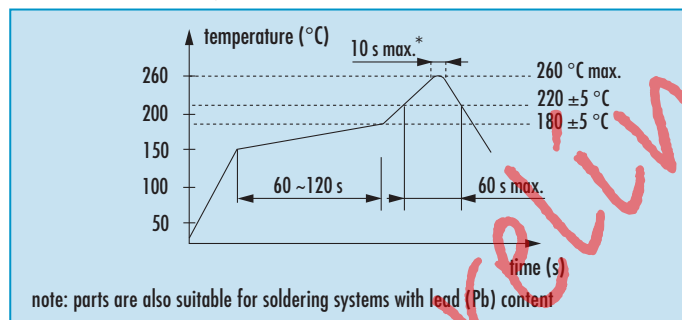
- oscillator stops
- output high impedance

Marking

frequency
company code / frequency stability code / date code
date code:
A ~ M: Jan. - Dec.
0: 2010 3: 2013
1: 2011 4: 2014
2: 2012 5: 2015

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 1000 pieces per reel
— non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22 · 1.8 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- very low current consumption
- low phase noise type for WLAN available**
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 1.8 V
frequency range	0.75 ~ 50.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	1.8 V ± 5%
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C storage -55 °C ~ +105 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.4 V high level min. V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS**
symmetry at 0.5 x V _{DC}	45% ~ 55% typ. (40% ~ 60% max.)

** detailed data and available frequencies for option - LP upon request

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				

● standard ○ available △ excludes aging

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

Table 2: Current Consumption max.

1.8 V: current at 15pF load:

0.75 ~ 19.9 MHz	2 mA
20.00 ~ 39.9 MHz	3 mA
40.00 ~ 50.0 MHz	4 mA

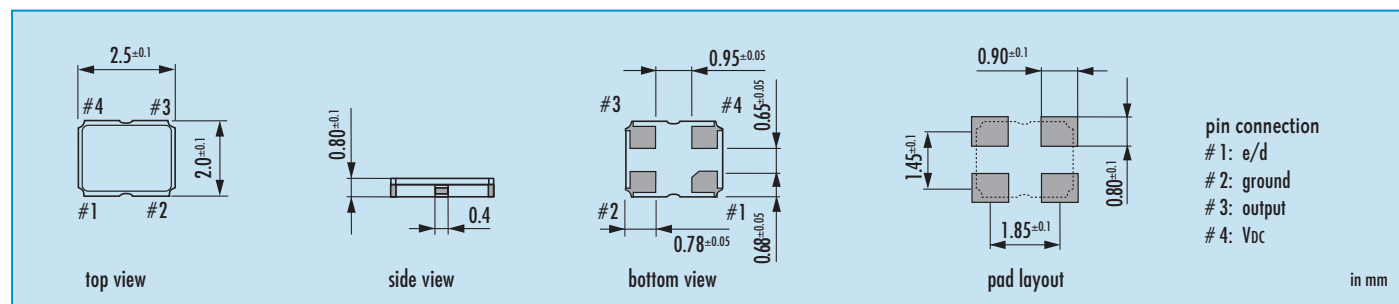
Table 3: Rise & Fall Time max.

6 ns: 0.75 ~ 50.0 MHz

note:

- specific data on request
- rise time: 0.1 V_{DC} ~ 0.9 V_{DC}
- fall time: 0.9 V_{DC} ~ 0.1 V_{DC}

Dimensions



Order Information

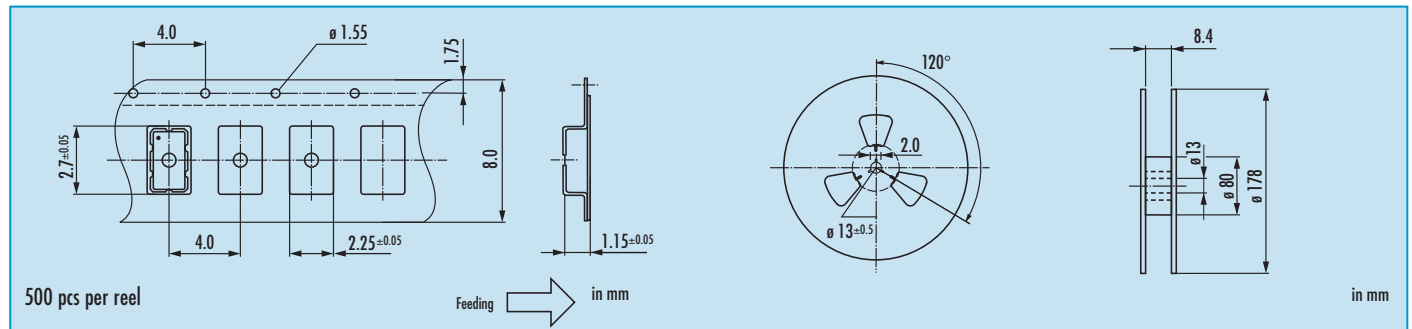
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	see table 1	1.8 = 1.8V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C LP = low phase noise**

Example: O 20.0-JO22-B-1.8-1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO22 · 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

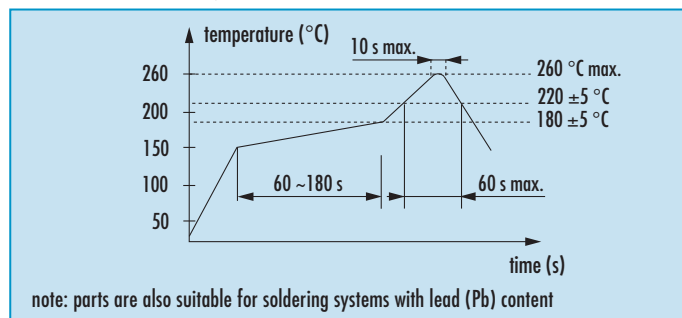
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22H · 1.8 V

High Stability Oscillator with Stop Function · 2.5 x 2.0 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type	JO22H 1.8V
frequency range	4.0 ~ 54.0 MHz (15pF max.)
frequency stability over all*	$\pm 10\text{ppm} \sim \pm 20\text{ppm}$ (table 1)
current consumption	3 mA max.
supply voltage V_{DC}	1.8 V $\pm 5\%$
temperature	operating: -20°C ~ +70°C / -40°C ~ +85°C
	storage: -40°C ~ +85°C
output	rise & fall time: 5 nsec max.
	load max: 15pF
	current max.: 4 mA
	low level max.: $0.1 \times V_{DC}$
	high level min.: $0.9 \times V_{DC}$
output enable time max.	10 ms
output disable time max.	250ns
start-up time max.	10 ms
standby function	stop
standby current max.	10 μA
jitter	< 3.0 ps RMS typ.
symmetry at 0.5 x VDC	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D	E	F		
	$\pm 20\text{ ppm}$	$\pm 15\text{ ppm}$	$\pm 10\text{ ppm}$		
-20 °C ~ +70 °C	○	○	○		
-40 °C ~ +85 °C	○	○	▲		
○ available ▲ ask, if available					

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

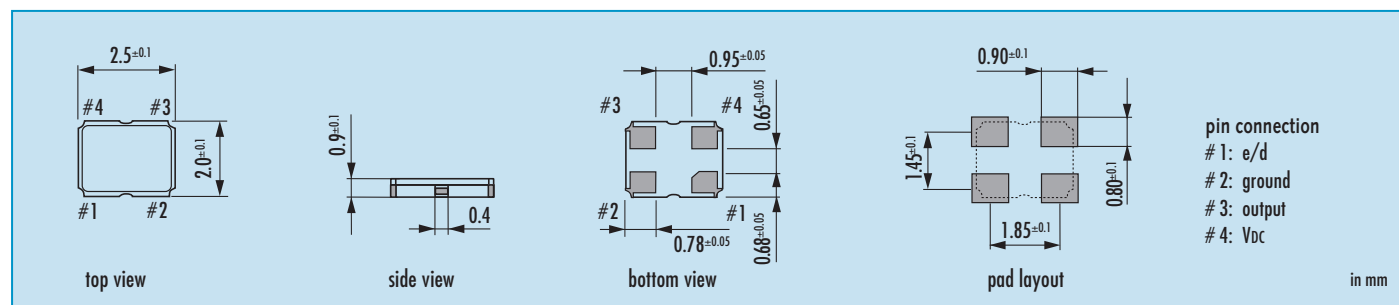
Table 2: Rise & Fall Time max.

5 ns: 4.0 ~ 54.0 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
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Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions

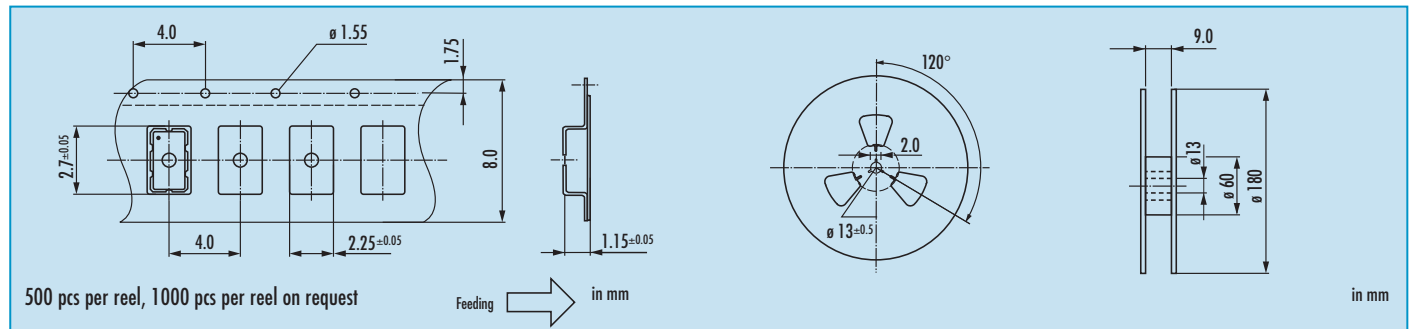


Order Information

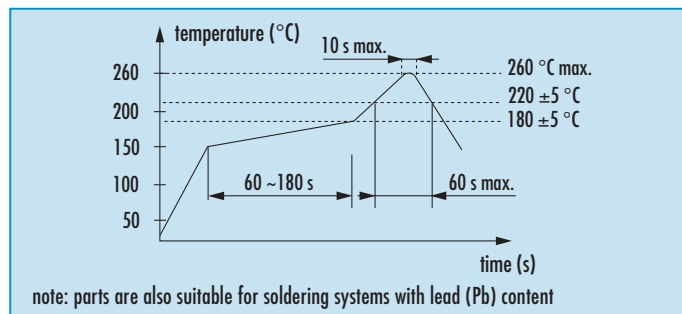
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	4.0 ~ 54.0 MHz	JO22H	see table 1	1.8 = 1.8 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C
Example: O 20.0-JO22H-F-1.8-1-T1 (LF = RoHS compliant / Pb free pins or pads)						

Oscillator · JO22H · 1.8 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO22 · 2.5 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- low current consumption
- low phase noise type for WLAN available**
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 2.5 V
frequency range	0.75 ~ 50.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	2.5 V ± 5%
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C storage -55 °C ~ +105 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.4 V high level min. V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS**
symmetry at 0.5 x V _{DC}	45 % ~ 55 % max.

** detailed data and available frequencies for option - LP upon request

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				

● standard ○ available △ excludes aging

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

Table 2: Current Consumption max.

2.5 V: current at 15pF load:

0.75 ~ 19.9 MHz	5 mA
20.00 ~ 39.9 MHz	6 mA
40.00 ~ 50.0 MHz	7 mA

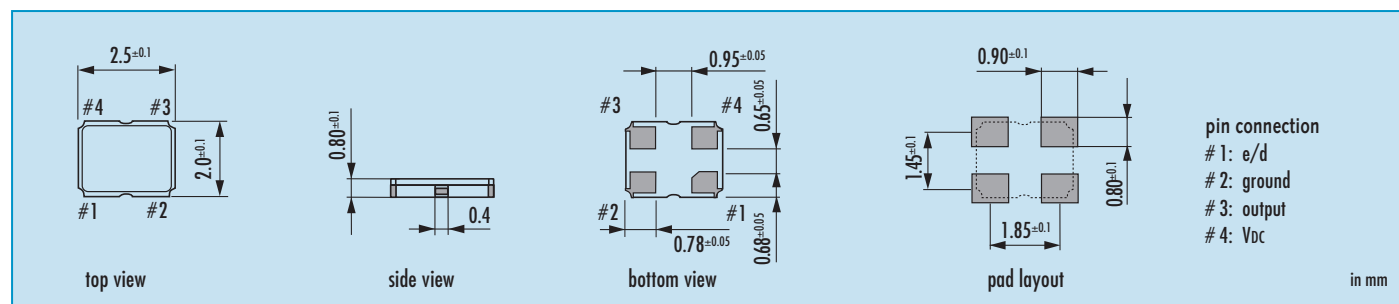
Table 3: Rise & Fall Time max.

5 ns: 0.75 ~ 50.0 MHz

note:

- specific data on request
- rise time: 0.1 V_{DC} ~ 0.9 V_{DC}
- fall time: 0.9 V_{DC} ~ 0.1 V_{DC}

Dimensions



Order Information

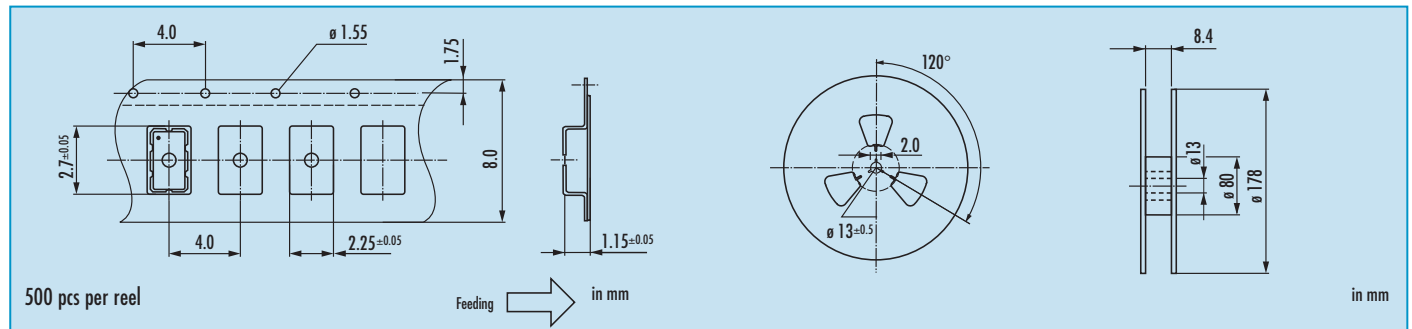
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C LP = low phase noise**

Example: O 20.0-JO22-B-2.5-1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO22 · 2.5 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

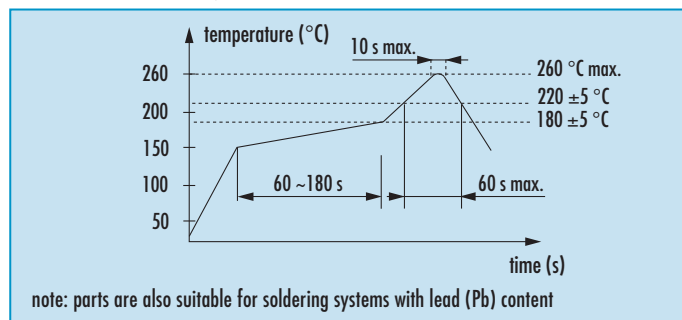
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22H · 2.5 V

High Stability Oscillator with Stop Function · 2.5 x 2.0 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type		JO22H 2.5V
frequency range		4.0 ~ 54.0 MHz (15pF max.)
frequency stability over all*		± 10ppm ~ ± 20ppm (table 1)
current consumption		6 mA max.
supply voltage V_{DC}		2.5 V ±5%
temperature	operating	-20°C ~ +70°C / -40°C ~ +85°C
	storage	-40°C ~ +85°C
output	rise & fall time	5 nsec max.
	load max.	15pF
	current max.	4 mA
	low level max.	0.1 x V_{DC}
	high level min.	0.9 x V_{DC}
output enable time max.		10 ms
output disable time max.		250ns
start-up time max.		10 ms
standby function		stop
standby current max.		10 µA
jitter		< 3.0 ps RMS typ.
symmetry at 0.5 x VDC		45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm		
-20 °C ~ +70 °C	○	○	○		
-40 °C ~ +85 °C	○	○	○		
○ available					

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

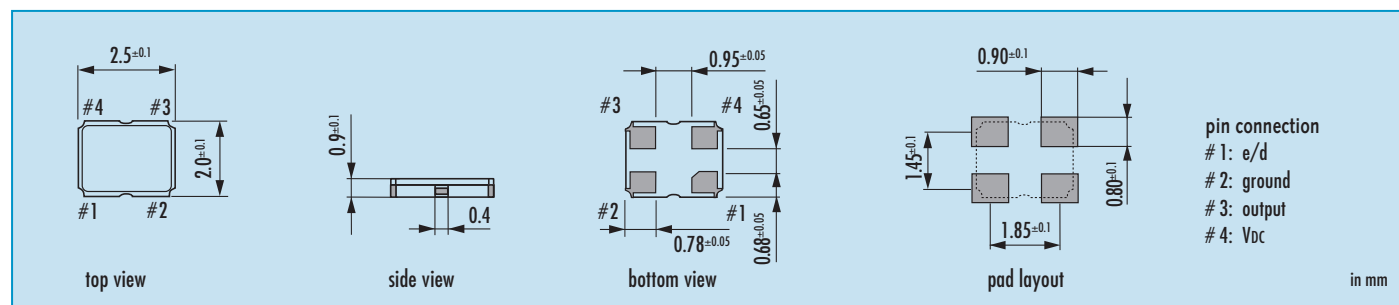
Table 2: Rise & Fall Time max.

5 ns: 4.0 ~ 54.0 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
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Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions

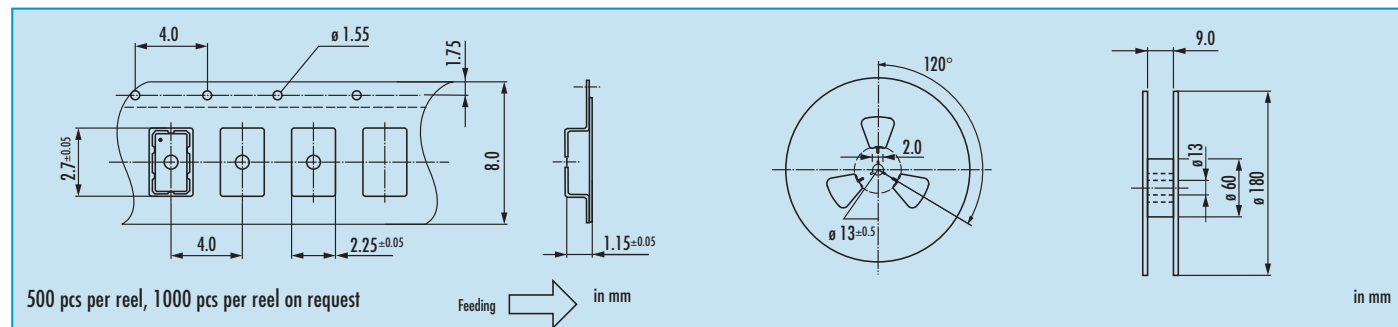


Order Information

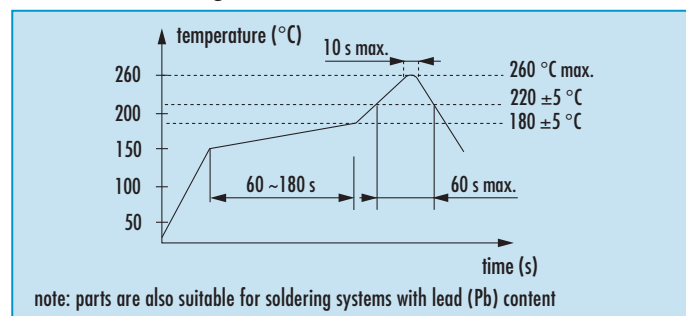
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	4.0 ~ 54.0 MHz	JO22H	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C
Example: O 20.0-JO22H-F-2.5-1-T1 (LF = RoHS compliant / Pb free pins or pads)						

Oscillator · JO22H · 2.5 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO22 · 2.8 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- low current consumption
- low phase noise type for WLAN available**
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 2.8 V
frequency range	0.75 ~ 50.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	2.8 V ± 5 %
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C storage -55 °C ~ +105 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.4 V high level min. V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS**
symmetry at 0.5 x V _{DC}	45 % ~ 55 % max.

** detailed data and available frequencies for option - LP upon request

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				

● standard ○ available △ excludes aging

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

Table 2: Current Consumption max.

2.8 V: current at 15pF load:

0.75 ~ 19.9 MHz	5 mA
20.00 ~ 39.9 MHz	6 mA
40.00 ~ 50.0 MHz	7 mA

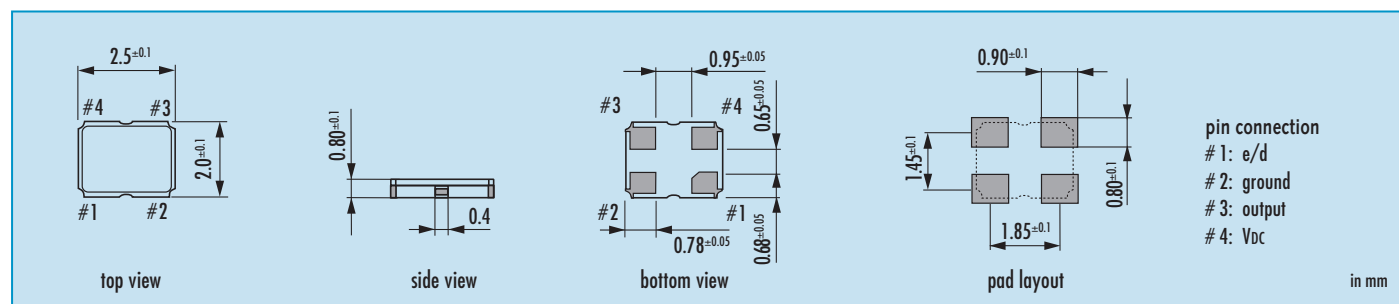
Table 3: Rise & Fall Time max.

5 ns: 0.75 ~ 50.0 MHz

note:

- specific data on request
- rise time: 0.1 V_{DC} ~ 0.9 V_{DC}
- fall time: 0.9 V_{DC} ~ 0.1 V_{DC}

Dimensions



Order Information

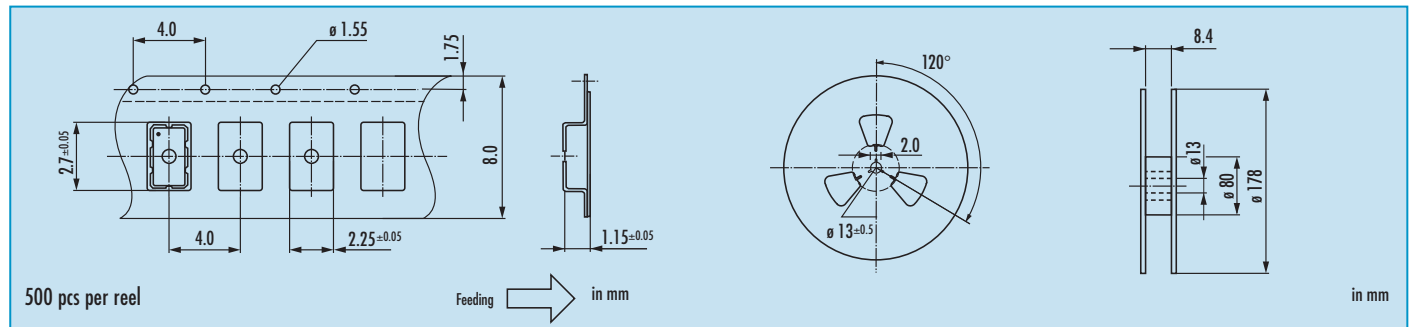
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	see table 1	2.8 = 2.8 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C LP = low phase noise**

Example: O 20.0-JO22-B-2.8-1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO22 · 2.8 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

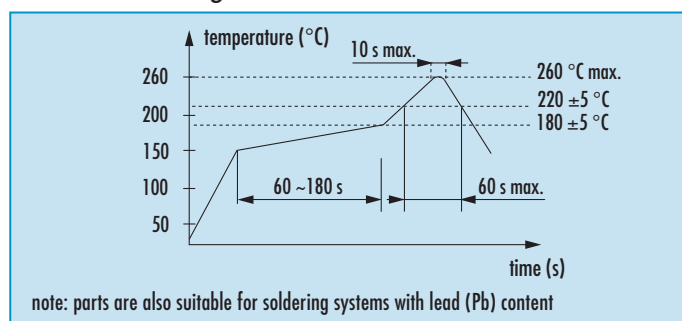
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22 · 3.0 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- low current consumption
- low phase noise type for WLAN available**
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 3.0 V
frequency range	0.75 ~ 50.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	3.0 V ± 5%
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C storage -55 °C ~ +105 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.4 V high level min. V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS**
symmetry at 0.5 x V _{DC}	45 % ~ 55 % max.

** detailed data and available frequencies for option - LP upon request

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				
● standard ○ available △ excludes aging						

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

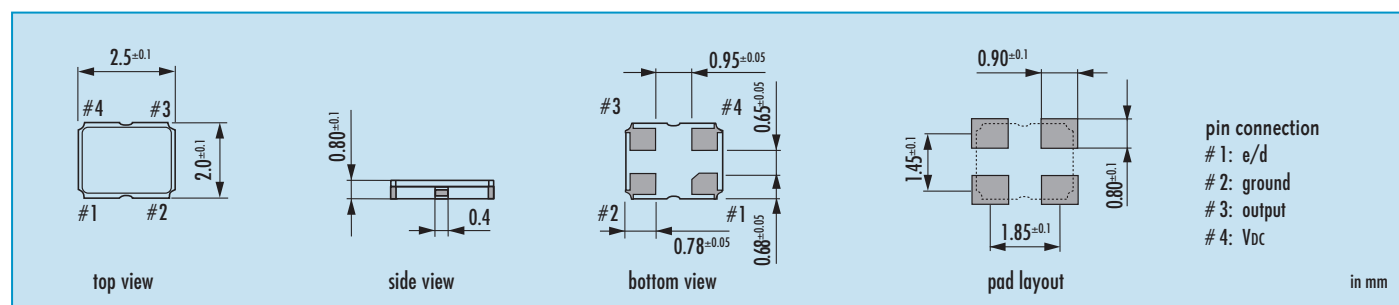
Table 2: Current Consumption max.

3.0 V: current at 15pF load:	
0.75 ~ 19.9 MHz	5.5 mA
20.00 ~ 39.9 MHz	6.5 mA
40.00 ~ 50.0 MHz	7.5 mA

Table 3: Rise & Fall Time max.

5 ns: 0.75 ~ 50.0 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
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Dimensions



Order Information

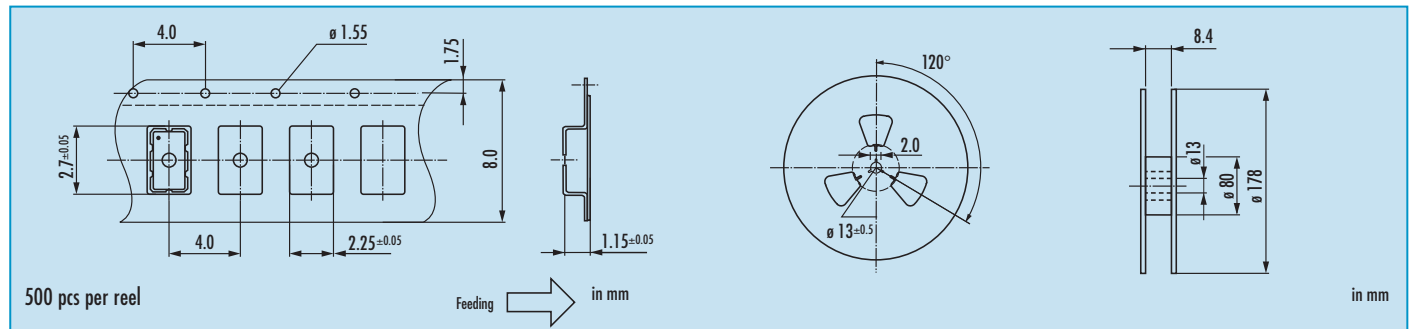
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	see table 1	3.0 = 3.0 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C LP = low phase noise**

Example: O 20.0-JO22-B-3.0-1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO22 · 3.0 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

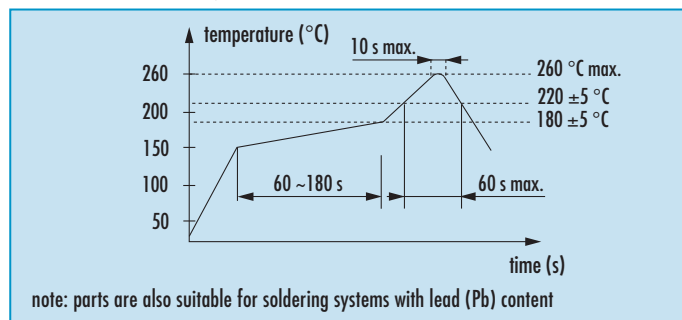
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22 · 3.3 V

SMD Oscillator with Stop Function · 2.5 x 2.0 mm

- low current consumption
- low phase noise type for WLAN available**
- reflow soldering temperature: 260 °C max.
- ultra flat ceramic / metal package



General Data

type	JO22 3.3 V
frequency range	0.75 ~ 50.0 MHz
frequency stability over all*	± 25 ppm ~ ± 100 ppm see table 1
current consumption	see table 2
supply voltage V _{DC}	3.3 V ± 5 %
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C storage -55 °C ~ +105 °C
output	rise & fall time see table 3 load max 15 pF current max. 4 mA low level max. 0.4 V high level min. V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS**
symmetry at 0.5 x V _{DC}	45 % ~ 55 % max.

** detailed data and available frequencies for option - LP upon request

Table 1: Frequency Stability Code

stability code	A	B	G	C		
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm		
-20 °C ~ +70 °C		○	○	△		
-40 °C ~ +85 °C	○	○	○			
-40 °C ~ +105 °C	○	○				
● standard ○ available △ excludes aging						

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

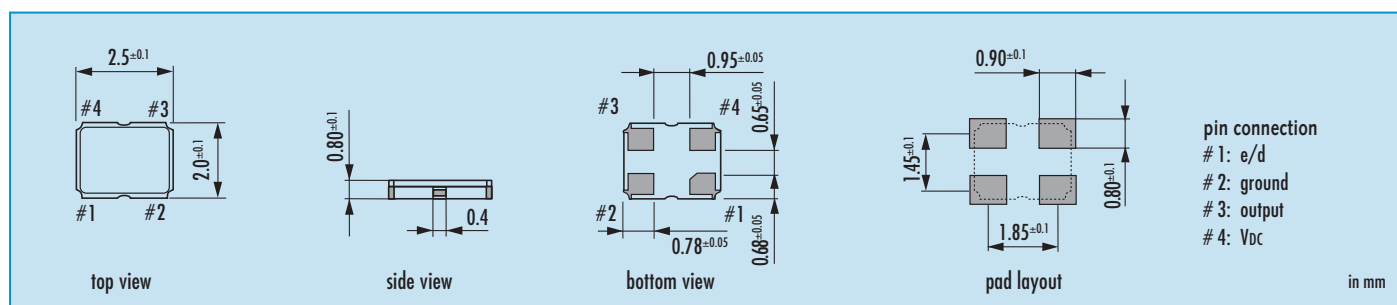
Table 2: Current Consumption max.

3.3 V: current at 15pF load:	
0.75 ~ 19.9 MHz	6 mA
20.00 ~ 39.9 MHz	7 mA
40.00 ~ 50.0 MHz	8 mA

Table 3: Rise & Fall Time max.

5 ns: 0.75 ~ 50.0 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
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Dimensions



Order Information

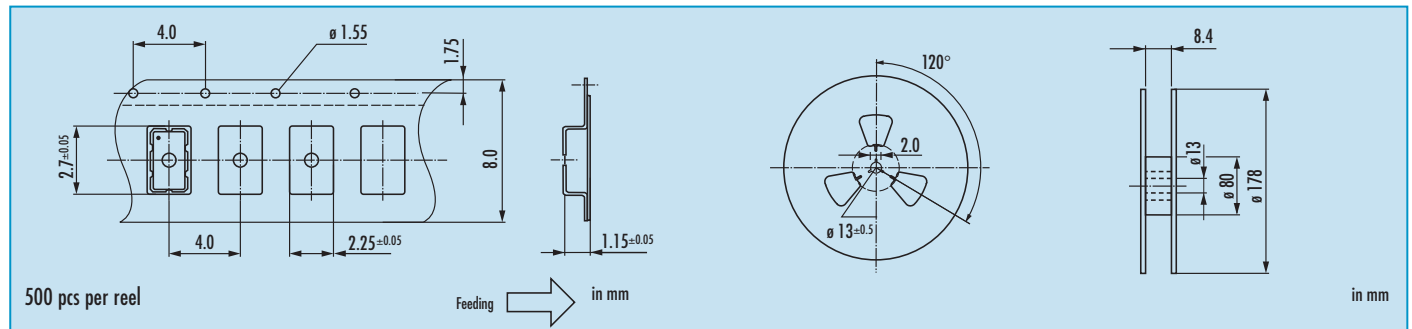
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 50.0 MHz	JO22	see table 1	3.3 = 3.3 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C LP = low phase noise**

Example: O 20.0-JO22-B-3.3-1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO22 · 3.3 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

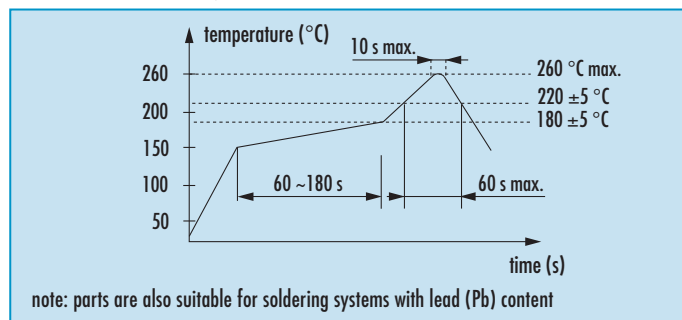
0: 2010 3: 2013

1: 2011 4: 2014

2: 2012 5: 2015

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 1000 pieces per reel
- non-multiple packing units are only supplied taped / bulk

* hand soldering temperature should not exceed 280 °C



actual size

Oscillator · JO22H · 3.3 V

High Stability Oscillator with Stop Function · 2.5 x 2.0 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type		JO22H 3.3V
frequency range		4.0 ~ 54.0 MHz (15pF max.)
frequency stability over all*		± 10ppm ~ ± 20ppm (table 1)
current consumption		7 mA max.
supply voltage V_{DC}		3.3 V ±5%
temperature	operating	-20°C ~ +70°C / -40°C ~ +85°C
	storage	-40°C ~ +85°C
output	rise & fall time	5 nsec max.
	load max.	15pF
	current max.	4 mA
	low level max.	0.1 x V_{DC}
	high level min.	0.9 x V_{DC}
output enable time max.		10 ms
output disable time max.		250ns
start-up time max.		10 ms
standby function		stop
standby current max.		10 µA
jitter		< 3.0 ps RMS typ.
symmetry at 0.5 x VDC		45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm		
-20 °C ~ +70 °C	○	○	○		
-40 °C ~ +85 °C	○	○	○		
○ available					

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

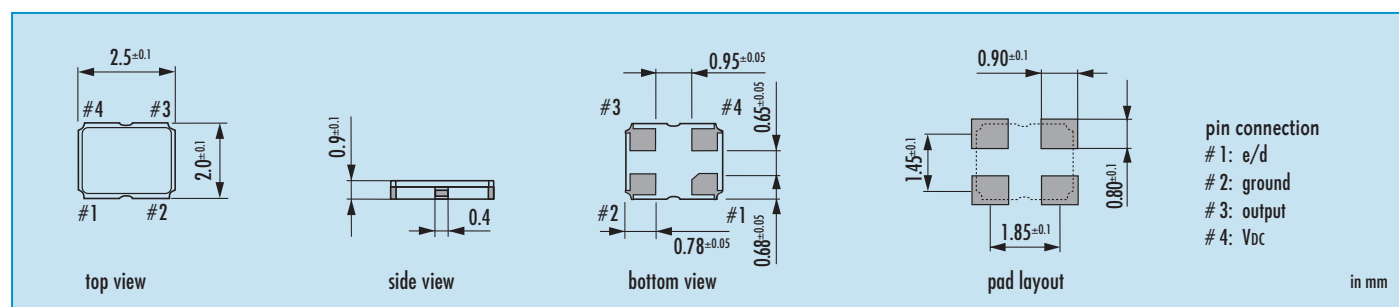
Table 2: Rise & Fall Time max.

5 ns: 4.0 ~ 54.0 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
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Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions



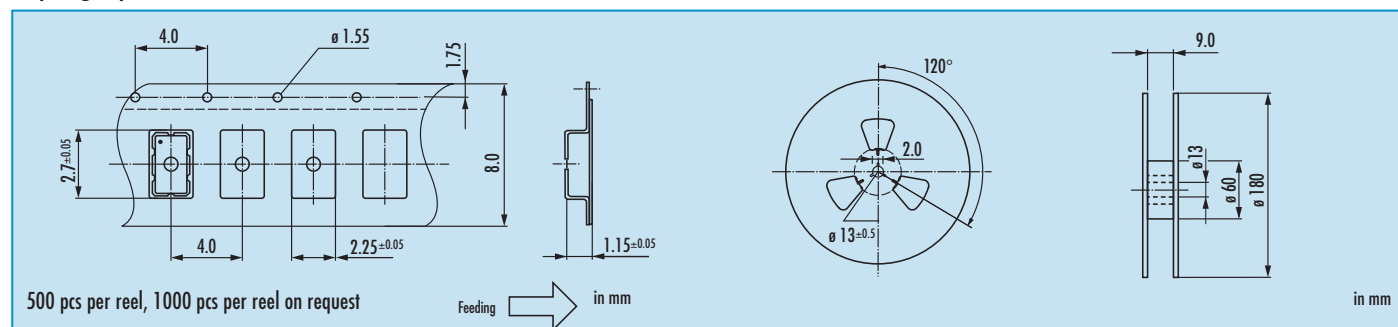
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	4.0 ~ 54.0 MHz	JO22H	see table 1	3.3 = 3.3 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C

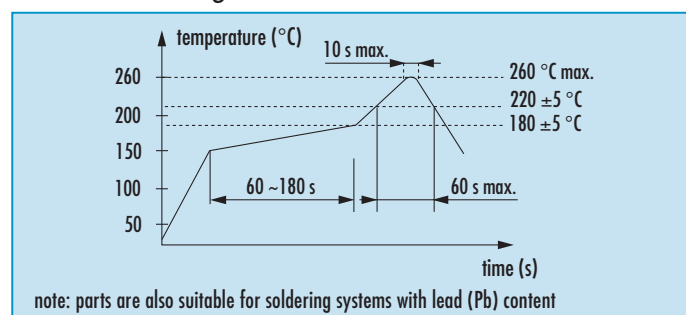
Example: O 20.0-JO22H-F-3.3-1-T1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO22H · 3.3 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO32 · 1.8 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



General Data

type	JO32 1.8 V
frequency range	0.75 ~ 40.0 MHz (15 pF max.) 0.75 ~ 40.0 MHz (30 pF max.)
higher frequencies	40.0 ~ 80.0 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 ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C / -40 °C ~ +105 °C 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.: 4 mA low level max.: 0.4 V high level min.: $V_{DC} - 0.4 V$
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	5 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

○ available △ excludes aging

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

Table 2: Current Consumption max.

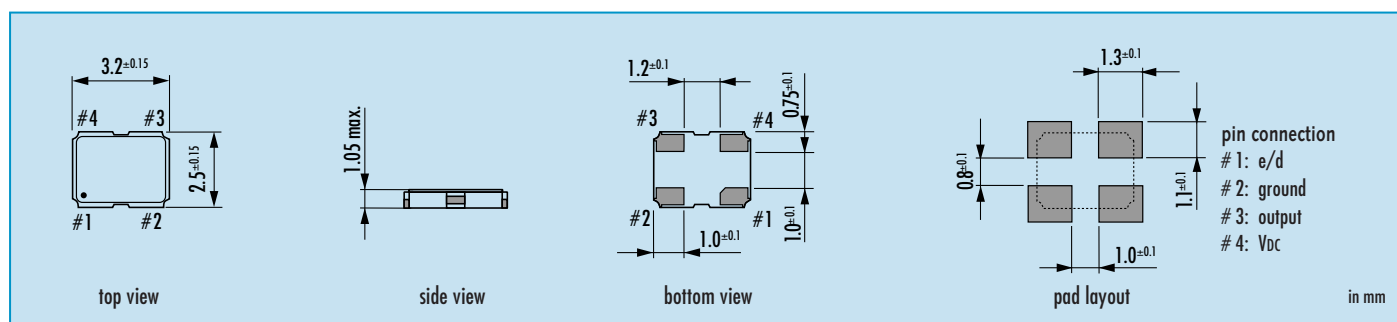
Current at 15 pF load	Current at 30 pF load
0.75 ~ 29.9 MHz 2 mA	0.75 ~ 29.9 MHz 6 mA
30.00 ~ 39.9 MHz 3 mA	30.00 ~ 40.0 MHz 11 mA
40.00 ~ 80.0 MHz* 11 mA	

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
7 ns: 0.75 ~ 39.99 MHz	10 ns: 0.75 ~ 40.00 MHz
5 ns: 40.00 ~ 80.00 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



Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 40.0 MHz	JO32	see table 1	1.8 = 1.8 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

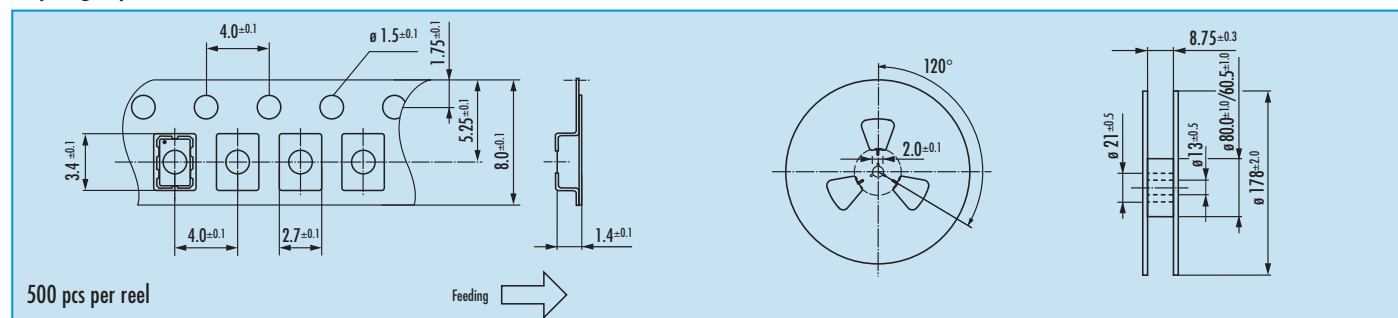
Example: O 20.0-JO32-B-1.8-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



Jauch Quartz GmbH • e-mail: info@jauch.de
full data can be found under: www.jauch.de / www.jauch.co.uk / www.jauch.fr / www.jauchusa.com
All specifications are subject to change without notice

Oscillator · JO32 · 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

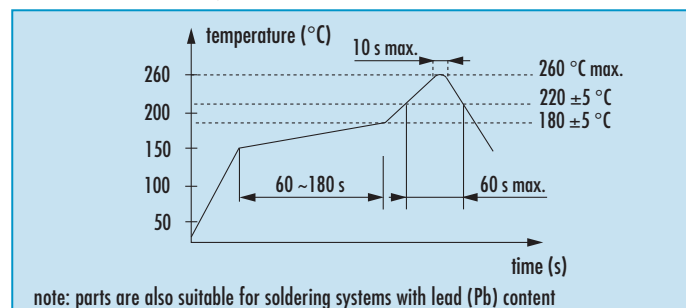
1: 2011 4: 2014

2: 2012 5: 2015

3: 2013 6: 2016

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



actual size

Oscillator · JO32H · 1.8 V

High Stability Oscillator with Stop Function · 3.2 x 2.5 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type	JO32H 1.8V
frequency range	2.50 ~ 60.0 MHz (15 pF max.)
frequency stability over all*	± 8 ppm ~ ± 20 ppm (table 1)
aging 1st year	+/-2 ppm max.
current consumption	5 mA max.
supply voltage V_{DC}	1.8 V ± 10%
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C
	storage -40 °C ~ +85 °C
output	rise & fall time 5 nsec max.
	load max 15 pF
	current max. 4 mA
	low level max. 0.1 x V_{DC}
	high level min. 0.9 x V_{DC}
output enable time max.	1 ms
output disable time max.	250 ns
start-up time max.	2 ms
standby function	stop
standby current max.	5 µA
jitter	< 3.0 ps RMS typ.
symmetry at 0.5 x VDC	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm	H ± 8 ppm
-20 °C ~ +70 °C	○	○	○	○
-40 °C ~ +85 °C	○	○	○	
-40 °C ~ +105 °C	○			
○ available				

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

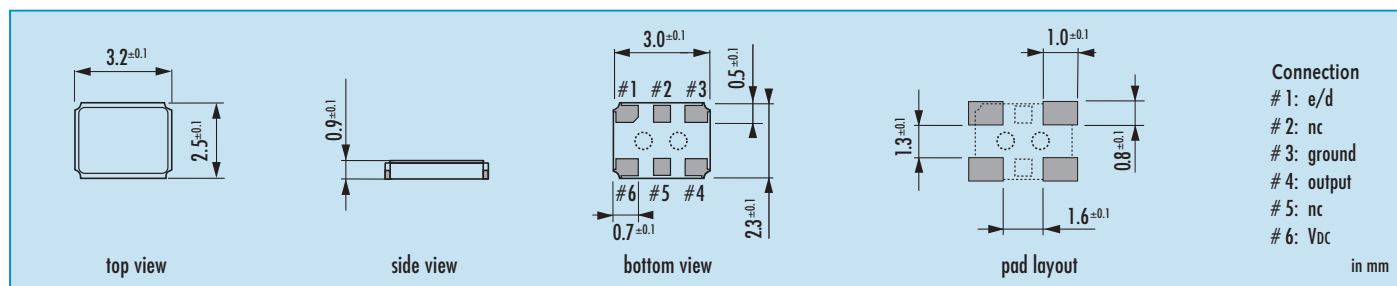
Table 2: Rise & Fall Time max.

5 ns: 2.5 ~ 60.0 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
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Enable / Disable Function

pin #1 (e/d control)	pin #4 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions



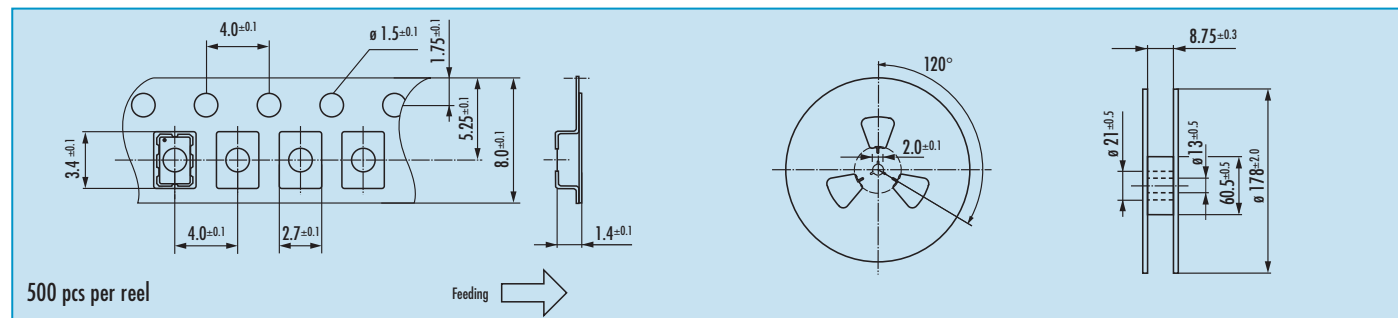
Note: please leave pins # 2, # 5 and the area underneath the package unconnected

Order Information

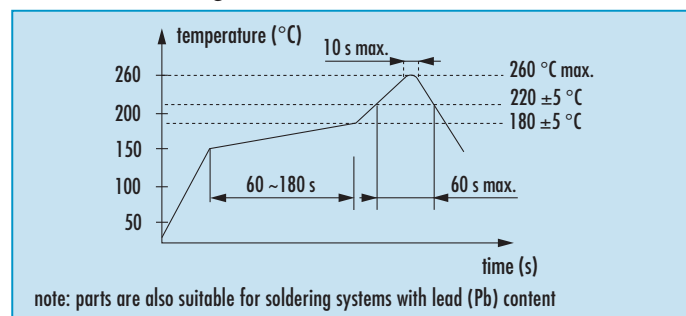
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	2.50 ~ 60.0 MHz	JO32H	see table 1	1.8 = 1.8 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C T2 = -40°C ~ +105°C
Example: O 20.0-JO32H-F-1.8-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)						

Oscillator · JO32H · 1.8 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / frequ. stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO32 · 2.5 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



General Data

type	JO32 2.5 V
frequency range	0.75 ~ 80.0 MHz (15 pF max.)
	0.75 ~ 50.0 MHz (30 pF max.)
higher frequencies	80.0 ~ 135.0 MHz (15 pF max.)*
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	2.5 V ± 5%
temperature	operating -10 °C ~ +70 °C / -40 °C ~ +85 °C / -40 °C ~ +105 °C
	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. 4 mA / 5 mA
	low level max. 0.4 V
	high level min. $V_{DC} - 0.4$ V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	5 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

○ available △ excludes aging

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

Table 2: Current Consumption max.

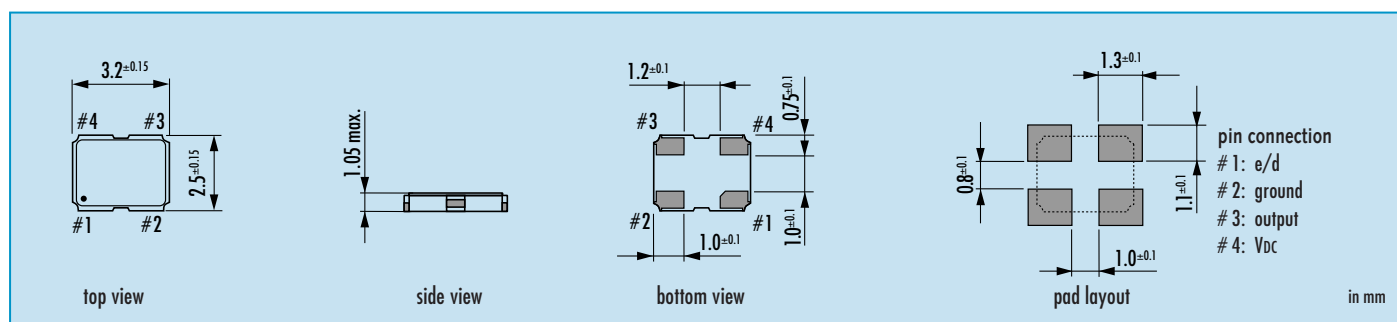
Current at 15 pF load		Current at 30 pF load	
0.75 ~ 19.9 MHz	4 mA	0.75 ~ 19.9 MHz	6 mA
20.00 ~ 39.9 MHz	7 mA	20.00 ~ 39.9 MHz	11 mA
40.00 ~ 59.9 MHz	11 mA	40.00 ~ 50.0 MHz	14 mA
60.00 ~ 79.9 MHz	14 mA		
80.00 ~ 135.0 MHz*	35 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
5 ns: 0.75 ~ 49.99 MHz	8 ns: 0.75 ~ 49.99 MHz
5 ns: 50.00 ~ 79.99 MHz	
4 ns: 80.00 ~ 135.00 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



Order Information

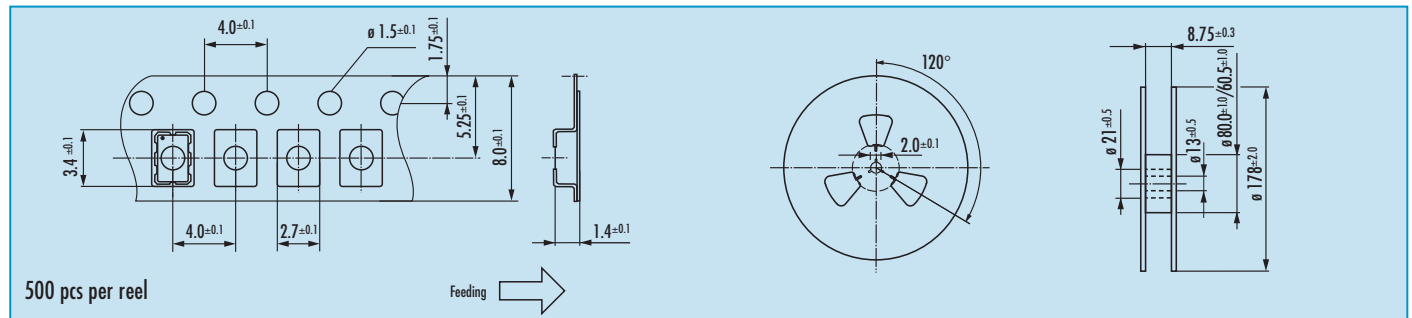
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 80.0 MHz	JO32	see table 1	2.5 = 2.5 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

Example: O 20.0-JO32-B-2.5-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO32 · 2.5 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

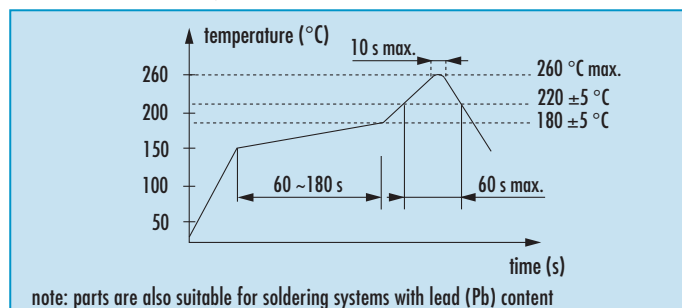
1: 2011 4: 2014

2: 2012 5: 2015

3: 2013 6: 2016

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



actual size

Oscillator · JO32H · 2.5 V

High Stability Oscillator with Stop Function · 3.2 x 2.5 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type	JO32H 2.5V
frequency range	2.50 ~ 60.0 MHz (15 pF max.)
frequency stability over all*	± 8 ppm ~ ± 20 ppm (table 1)
aging 1st year	+/-2 ppm max.
current consumption	7 mA max.
supply voltage V_{DC}	2.5 V ± 10%
temperature	operating -20 °C ~ +70 °C up to -40 °C ~ +105 °C
	storage -40 °C ~ +85 °C
output	rise & fall time 5 nsec max.
	load max 15 pF
	current max. 4 mA
	low level max. 0.1 x V_{DC}
	high level min. 0.9 x V_{DC}
output enable time max.	1 ms
output disable time max.	250 ns
start-up time max.	2 ms
standby function	stop
standby current max.	5 µA
jitter	< 3.0 ps RMS typ.
symmetry at 0.5 x VDC	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm	H ± 8 ppm
-20 °C ~ +70 °C	○	○	○	○
-40 °C ~ +85 °C	○	○	○	
-40 °C ~ +105 °C	○			
○ available				

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

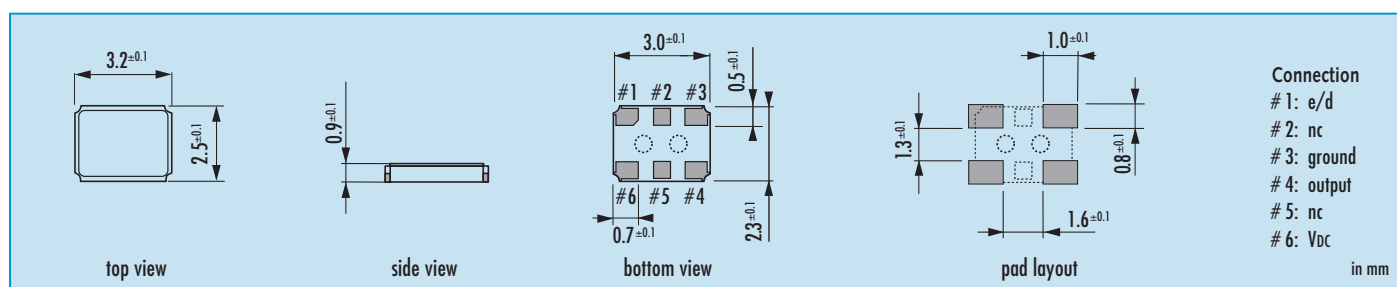
Table 2: Rise & Fall Time max.

5 ns: 2.5 ~ 60.0 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
----------------------	--

Enable / Disable Function

pin #1 (e/d control)	pin #4 (output)
open	active
high "1" ($V_{IH} \geq 0.7 V_{DC}$)	active
low "0" ($V_{IL} \leq 0.3 V_{DC}$)	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions



Note: please leave pins # 2, # 5 and the area underneath the package unconnected

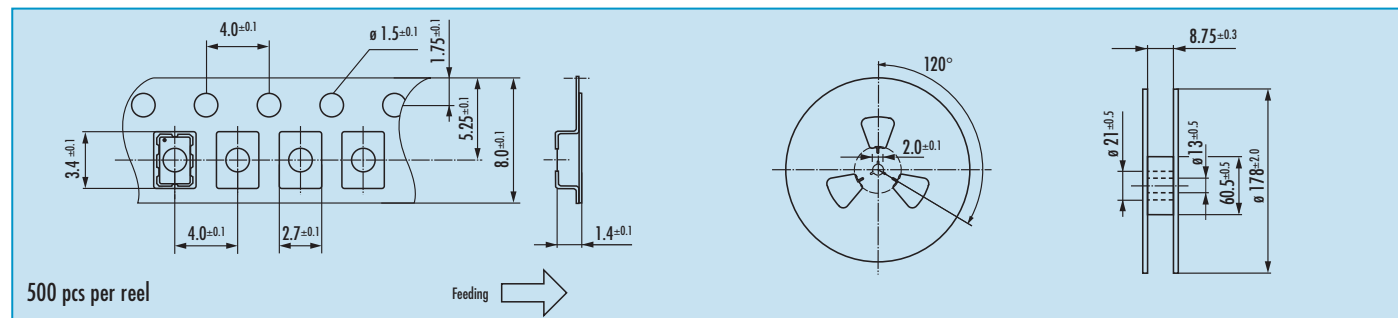
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	2.50 ~ 60.0 MHz	JO32H	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C T2 = -40°C ~ +105°C
Example: O 20.0-JO32H-F-2.5-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)						

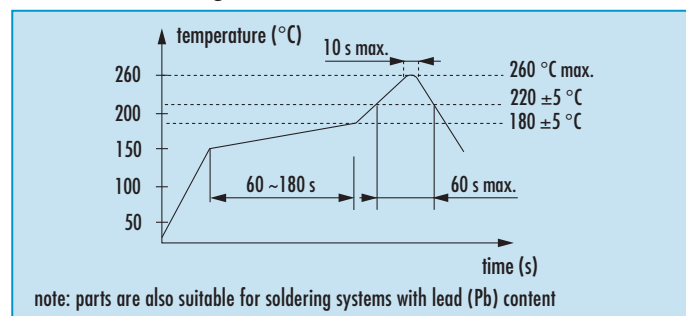


Oscillator · JO32H · 2.5 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / frequ. stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO32 · 2.8 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



General Data

type	JO32 2.8 V
frequency range	0.75 ~ 80.0 MHz (15 pF max.) 0.75 ~ 50.0 MHz (30 pF max.)
higher frequencies	80.0 ~ 135.0 MHz (15 pF max.)*
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	2.8 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C / -40 °C ~ +105 °C 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.: 4 mA / 5 mA low level max.: 0.4 V high level min.: V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	5 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V _{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

○ available △ excludes aging

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

Table 2: Current Consumption max.

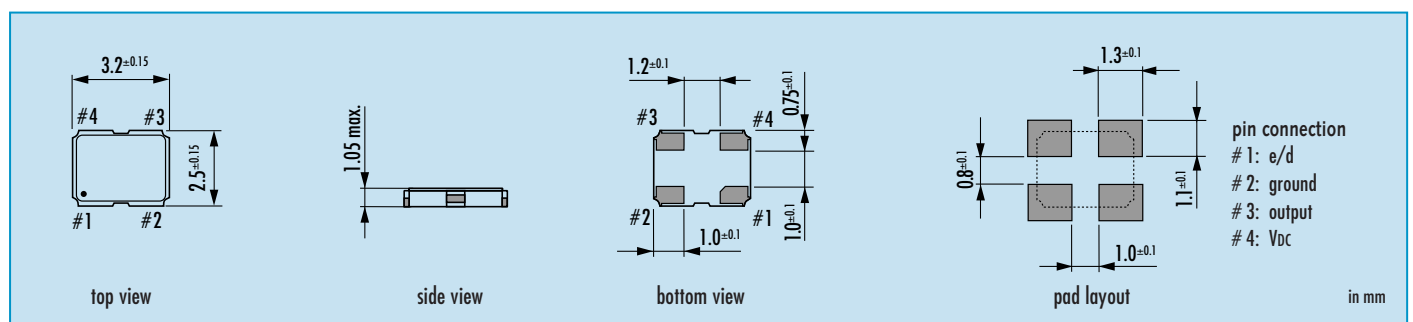
Current at 15 pF load	Current at 30 pF load
0.75 ~ 19.9 MHz 4 mA	0.75 ~ 19.9 MHz 6 mA
20.00 ~ 39.9 MHz 7 mA	20.00 ~ 39.9 MHz 13 mA
40.00 ~ 59.9 MHz 16 mA	40.00 ~ 50.0 MHz 18 mA
60.00 ~ 79.9 MHz 18 mA	
80.00 ~ 135.0 MHz* 40 mA	

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
5 ns: 0.75 ~ 49.99 MHz	8 ns: 0.75 ~ 49.99 MHz
5 ns: 50.00 ~ 79.99 MHz	
4 ns: 80.00 ~ 135.00 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



Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 80.0 MHz	JO32	see table 1	2.8 = 2.8 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

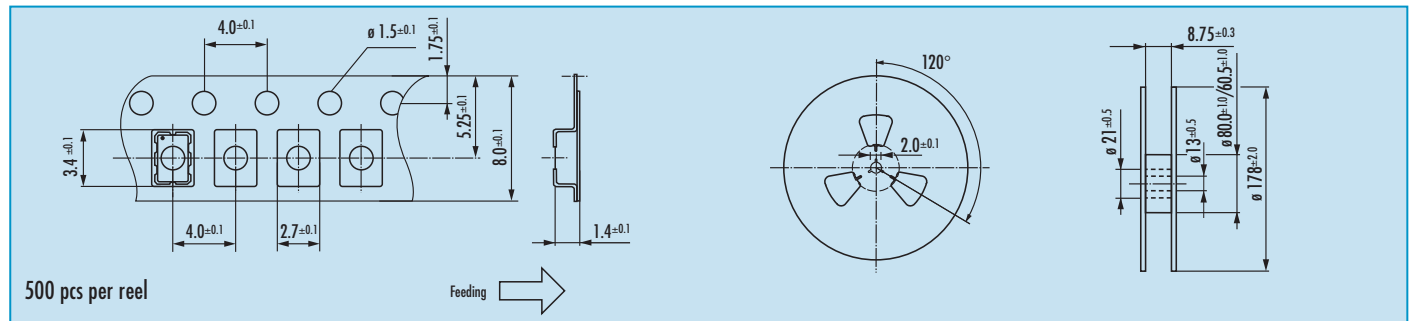
Example: O 20.0-JO32-B-2.8-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



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full data can be found under: www.jauch.de / www.jauch.co.uk / www.jauch.fr / www.jauchusa.com
All specifications are subject to change without notice

Oscillator · JO32 · 2.8 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

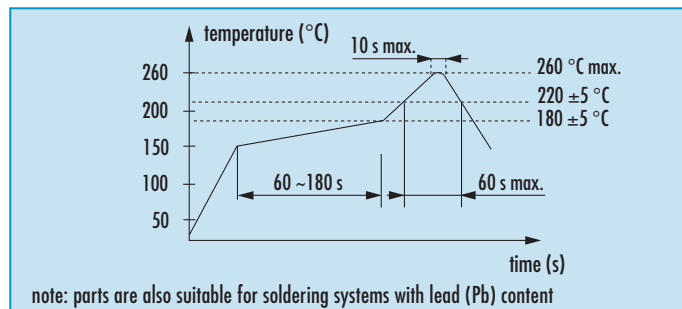
1: 2011 4: 2014

2: 2012 5: 2015

3: 2013 6: 2016

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



actual size

Oscillator · JO32 · 3.0 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



General Data

type	JO32 3.0 V
frequency range	0.75 ~ 80.0 MHz (15 pF max.) 0.75 ~ 50.0 MHz (30 pF max.)
higher frequencies	80.0 ~ 135.0 MHz (15 pF max.)*
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	3.0 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C / -40 °C ~ +105 °C 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.: 4 mA / 5 mA low level max.: 0.4 V high level min.: $V_{DC} - 0.4$ V
output enable time max.	10 ms
output disable time max.	50 µs
start-up time max.	10 ms
standby function	stop
standby current max.	5 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

○ available △ excludes aging

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

Table 2: Current Consumption max.

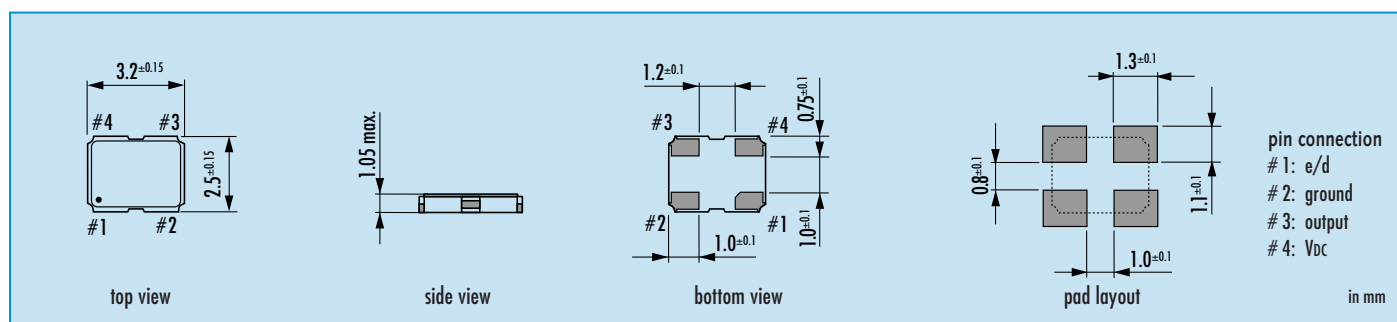
Current at 15 pF load		Current at 30 pF load	
0.75 ~ 19.9 MHz	4 mA	0.75 ~ 19.9 MHz	6 mA
20.00 ~ 39.9 MHz	7 mA	20.00 ~ 39.9 MHz	13 mA
40.00 ~ 59.9 MHz	19 mA	40.00 ~ 50.0 MHz	24 mA
60.00 ~ 79.9 MHz	24 mA		
80.00 ~ 135.0 MHz*	42 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
5 ns: 0.75 ~ 49.99 MHz	8 ns: 0.75 ~ 49.99 MHz
4 ns: 50.00 ~ 79.99 MHz	
3 ns: 80.00 ~ 135.00 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



Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 80.0 MHz	JO32	see table 1	3.0 = 3.0 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

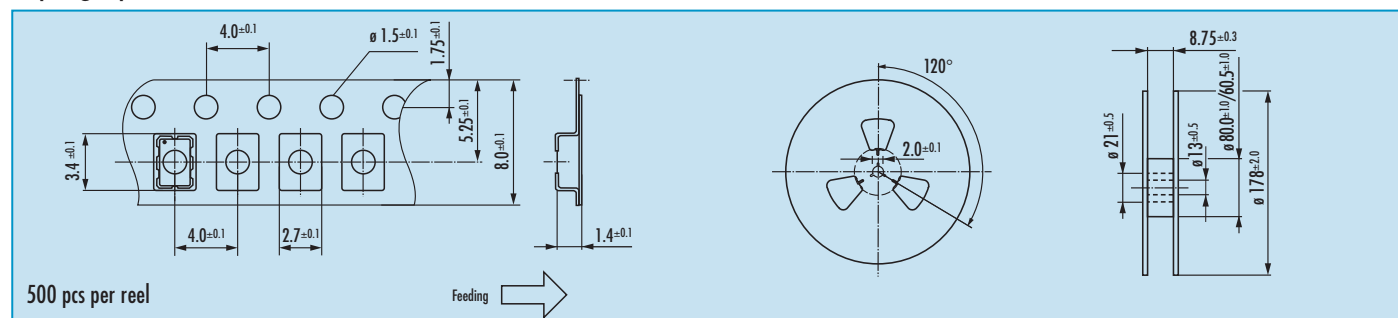
Example: O 20.0-JO32-B-3.0-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



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full data can be found under: www.jauch.de / www.jauch.co.uk / www.jauch.fr / www.jauchusa.com
All specifications are subject to change without notice

Oscillator · JO32 · 3.0 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

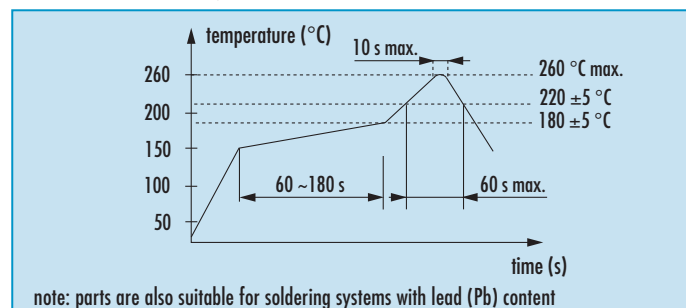
1: 2011 4: 2014

2: 2012 5: 2015

3: 2013 6: 2016

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



actual size

Oscillator · JO32 · 3.3 V

SMD Oscillator with Stop Function · 3.2 x 2.5 mm

- reflow soldering temperature: 260 °C max.
- compact & flat ceramic/metal package



General Data

type	JO32 3.3 V
frequency range	0.75 ~ 80.0 MHz (15 pF max.) 0.75 ~ 50.0 MHz (30 pF max.)
higher frequencies	80.0 ~ 135.0 MHz (15 pF max.)*
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	3.3 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C / -40 °C ~ +105 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max.: 15 pF / 30 pF ($\leq +85$ °C and ≤ 50.0 MHz) current max.: 4 mA / 5 mA low level max.: 0.4 V high level min.: $V_{DC} - 0.4$ V
output enable time max.	10 ms
output disable time max.	50 μ s
start-up time max.	10 ms
standby function	stop
standby current max.	5 μ A
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

○ available △ excludes aging

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

Table 2: Current Consumption max.

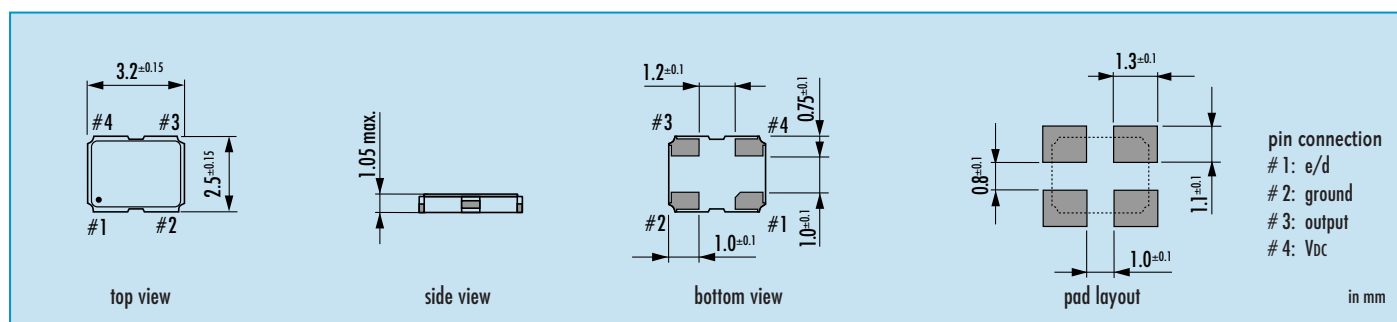
Current at 15 pF load	Current at 30 pF load
0.75 ~ 19.9 MHz 4 mA	0.75 ~ 19.9 MHz 6 mA
20.00 ~ 39.9 MHz 7 mA	20.00 ~ 39.9 MHz 13 mA
40.00 ~ 59.9 MHz 19 mA	40.00 ~ 50.0 MHz 24 mA
60.00 ~ 79.9 MHz 24 mA	
80.00 ~ 135.0 MHz* 45 mA	

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
5 ns: 0.75 ~ 49.99 MHz	8 ns: 0.75 ~ 49.99 MHz
4 ns: 50.00 ~ 79.99 MHz	
3 ns: 80.00 ~ 135.00 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



Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.75 ~ 80.0 MHz	JO32	see table 1	3.3 = 3.3 V	1 = 15 pF 2 = 30 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C

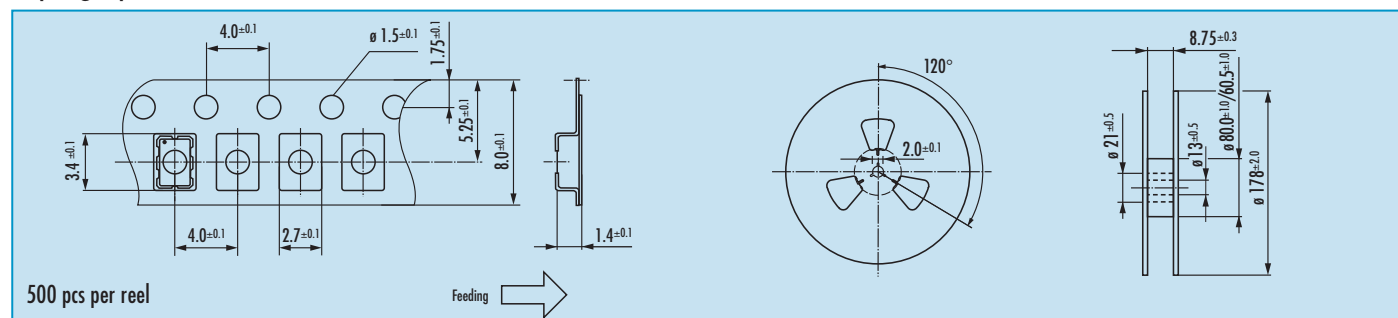
Example: O 20.0-JO32-B-3.3-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)



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full data can be found under: www.jauch.de / www.jauch.co.uk / www.jauch.fr / www.jauchusa.com
All specifications are subject to change without notice

Oscillator · JO32 · 3.3 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 code / frequency stability code / date code

date code:

A ~ M: Jan. - Dec.

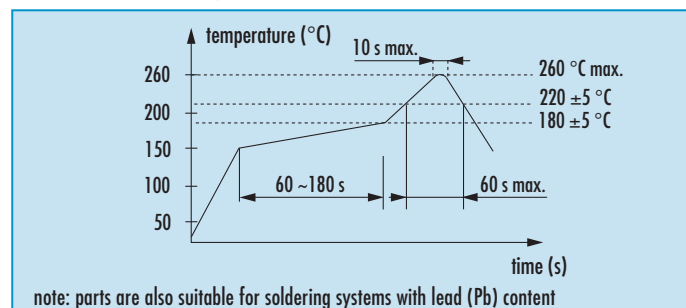
1: 2011 4: 2014

2: 2012 5: 2015

3: 2013 6: 2016

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



actual size

Oscillator · JO32H · 3.3 V

High Stability Oscillator with Stop Function · 3.2 x 2.5 mm

- low cost high stability SMD oscillator
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260 °C max.



General Data

type	JO32H 3.3V
frequency range	2.50 ~ 60.0 MHz (15 pF max.)
frequency stability over all*	± 8 ppm ~ ± 20 ppm (table 1)
aging 1st year	+/-2 ppm max.
current consumption	8 mA max.
supply voltage V _{DC}	3.3 V ± 10%
temperature	
operating	-20 °C ~ +70 °C up to -40 °C ~ +105 °C
storage	-40 °C ~ +85 °C
output	
rise & fall time	5 nsec max.
load max.	15 pF
current max.	4 mA
low level max.	0.1 x V _{DC}
high level min.	0.9 x V _{DC}
output enable time max.	1 ms
output disable time max.	250 ns
start-up time max.	2 ms
standby function	stop
standby current max.	5 µA
jitter	< 3.0 ps RMS typ.
symmetry at 0.5 x VDC	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D	E	F	H	
	± 20 ppm	± 15 ppm	± 10 ppm	± 8 ppm	
-20 °C ~ +70 °C	○	○	○	○	
-40 °C ~ +85 °C	○	○	○		
-40 °C ~ +105 °C	○				
○ available					

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

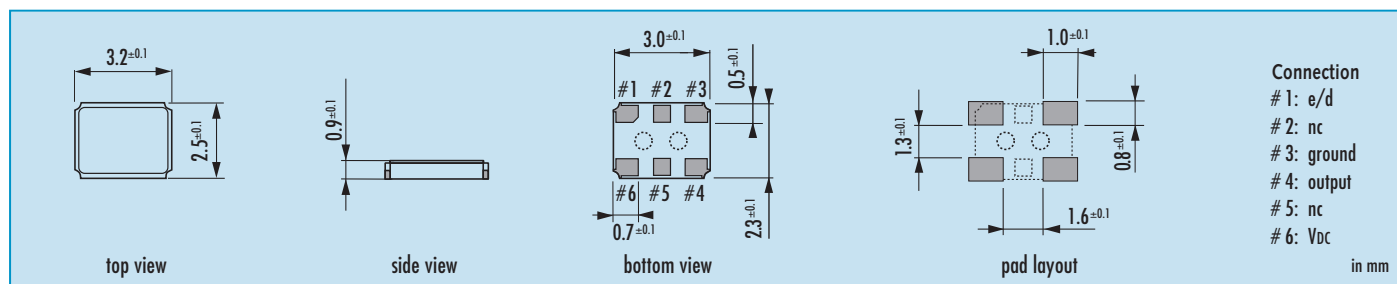
Table 2: Rise & Fall Time max.

5 ns: 2.5 ~ 60.0 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
----------------------	--

Enable / Disable Function

pin #1 (e/d control)	pin #4 (output)
open	active
high "1" (V _{IH} ≥ 0.7 V _{DC})	active
low "0" (V _{IL} ≤ 0.3 V _{DC})	high impedance
stop function: • oscillator stops / • output high impedance	

Dimensions



Note: please leave pins # 2, # 5 and the area underneath the package unconnected

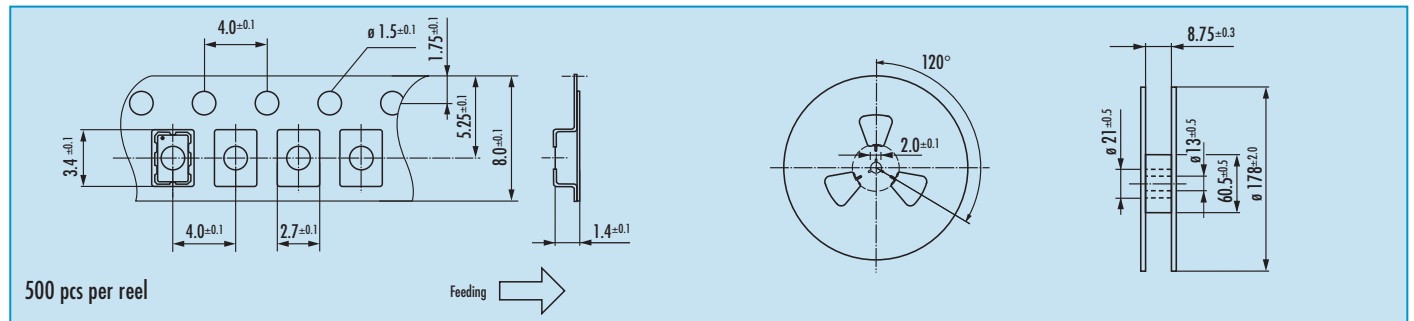
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	2.50 ~ 60.0 MHz	JO32H	see table 1	3.3 = 3.3 V	1 = 15 pF	blank = -20°C ~ +70°C T1 = -40°C ~ +85°C T2 = -40°C ~ +105°C

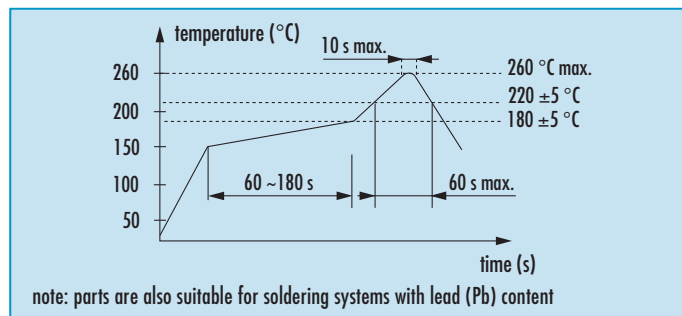
Example: O 20.0-JO32H-F-3.3-1-T1-LF (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO32H · 3.3 V · Low Power

Taping Specification



Reflow Soldering Profile



Marking

frequency	
company code / frequ. stability code / date code	
date code:	
A ~ M: Jan. - Dec.	
0: 2010 3: 2013	
1: 2011 4: 2014	
2: 2012 5: 2015	

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

Packing Note

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



actual size

Oscillator · JO53 · 1.8 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- high temperature version available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 1.8 V
frequency range	0.50 ~ 125.0 MHz (15 pF max.)
	0.50 ~ 40.0 MHz (30 pF max.)
	2.00 ~ 50.0 MHz (15 pF max. for T2 & T3*)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	1.8 V ± 5%
temperature	operating
	-10 °C ~ +70 °C
	-40 °C ~ +85 °C
	-40 °C ~ +105 °C
	-40 °C ~ +125 °C ask if available
	storage
	-55 °C ~ +125 °C
output	rise & fall time
	see table 3
	load max.
	15 pF / 30 pF (≤ +85 °C and ≤ 40.0 MHz)
	current max.
	4 mA
	low level max.
	0.4 V
	high level min.
	V _{DC} - 0.4 V
output enable time max.	10 ms
output disable time max.	50 ns / 200 ns (T2 & T3*)
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V _{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

● standard ○ available ■ ask if available △ excludes aging

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

Table 2: Current Consumption max.

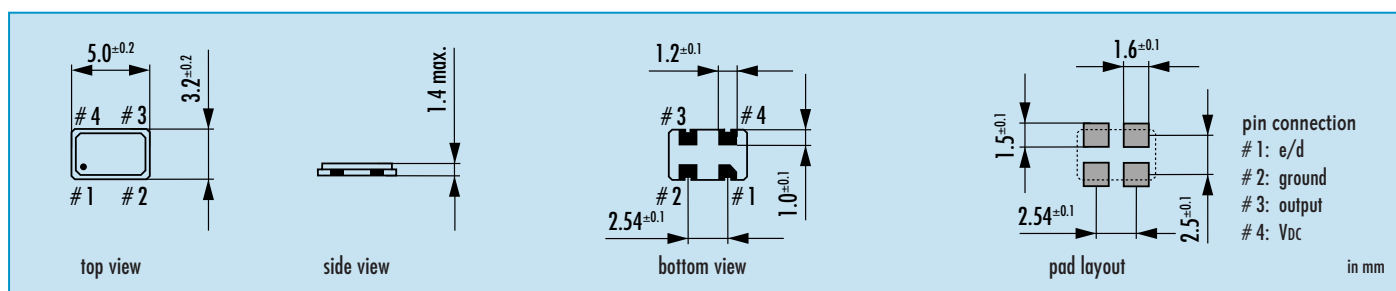
Current at 15 pF load		Current at 30 pF load	
0.5 ~ 29.9 MHz	7 mA	0.5 ~ 29.9 MHz	10 mA
30.0 ~ 39.9 MHz	7 mA	30.0 ~ 40.0 MHz	10 mA
40.0 ~ 89.9 MHz	20 mA		
90.0 ~ 125.0 MHz	25 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 29.99 MHz	8 ns: 0.50 ~ 40.00 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 ~ 125.00 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



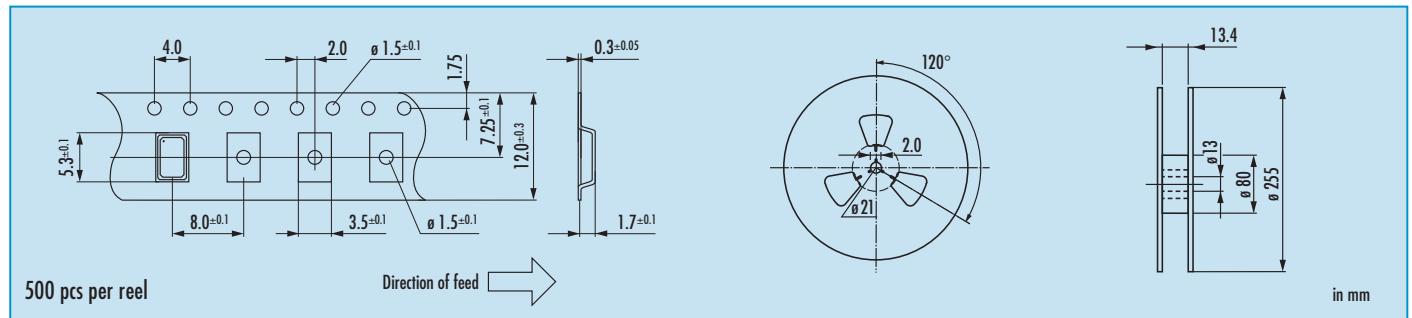
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 125.0 MHz	JO53	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: O 20.0-JO53-B-1.8-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 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
type / date code

date code:

A ~ M: Jan. - Dec.

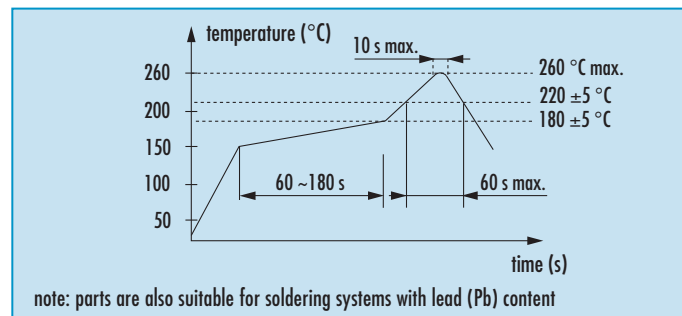
2: 2012 5: 2015

3: 2013 6: 2016

4: 2014 7: 2017

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



actual size

Oscillator · JO53 · 2.5 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- high temperature version available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 2.5 V
frequency range	0.50 ~ 80.0 MHz (15 pF max.)
	0.50 ~ 50.0 MHz (30 pF max.)
	2.00 ~ 50.0 MHz (15 pF max. for T2 & T3*)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	2.5 V ± 5%
temperature	operating -10 °C ~ +70 °C
	-40 °C ~ +85 °C
	-40 °C ~ +105 °C
	-40 °C ~ +125 °C ask if available
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. 4 mA
	low level max. $0.1 \times V_{DC} / 0.4 \text{ V}$ (T2 & T3*)
	high level min. $0.9 \times V_{DC} / V_{DC} - 0.4 \text{ V}$ (T2 & T3*)
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 / 20 µA (T2 & T3*)
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at $0.5 \times V_{DC}$	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

● standard ○ available ■ ask if available △ excludes aging

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

Table 2: Current Consumption max.

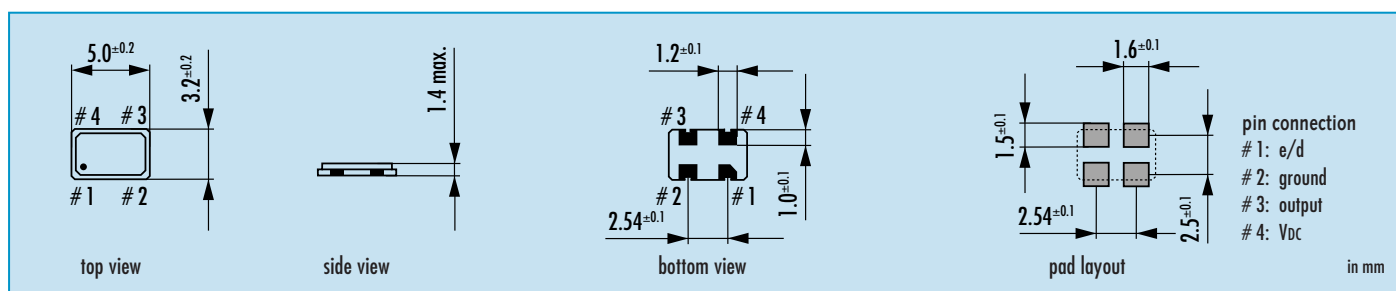
Current at 15 pF load		Current at 30 pF load	
0.5 ~ 14.9 MHz	6 mA	0.5 ~ 14.9 MHz	8 mA
15.0 ~ 29.9 MHz	8 mA	15.0 ~ 29.9 MHz	10 mA
30.0 ~ 39.9 MHz	10 mA	30.0 ~ 39.9 MHz	13 mA
40.0 ~ 49.9 MHz	13 mA	40.0 ~ 50.0 MHz	15 mA
50.0 ~ 59.9 MHz	16 mA		
60.0 ~ 80.0 MHz	20 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 1.79 MHz	8 ns: 0.50 ~ 50.00 MHz
5 ns: 1.80 ~ 49.99 MHz	
4 ns: 50.00 ~ 80.00 MHz	

note: rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ / fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
specific data on request

Dimensions



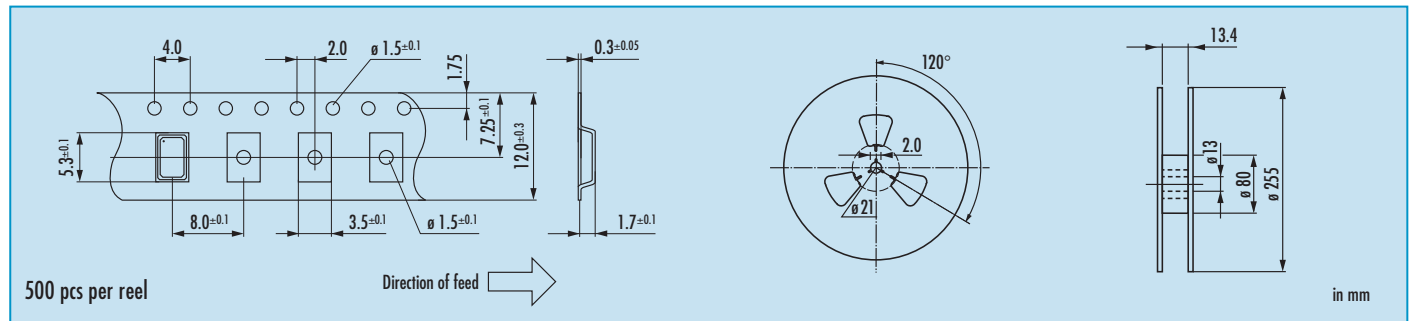
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 80.0 MHz	JO53	see table 1	2.5 = 2.5 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: O 20.0-JO53-B-2.5-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 2.5 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
type / date code

date code:

A ~ M: Jan. - Dec.

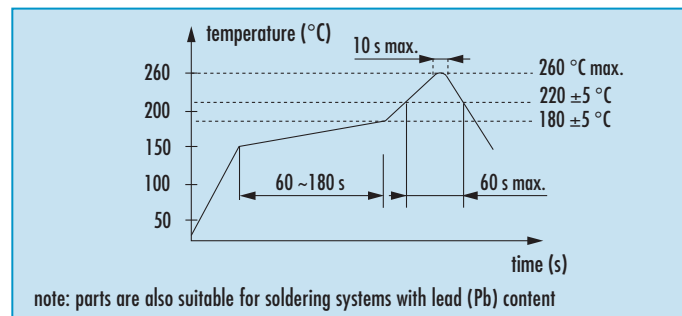
2: 2012 5: 2015

3: 2013 6: 2016

4: 2014 7: 2017

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



actual size

Oscillator · JO53H · 2.5 V

High Stability Oscillator with Stop Function · 5.0 x 3.2 mm

- high stability temp. compensated oscillator CMOS output
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260°C max.



General Data

type		JO53H 2.5V
frequency range		4.0 ~ 54.0 MHz
frequency stability over all*		± 8ppm ~ ± 13ppm (table 1)
aging 1st year		± 2ppm max.
current consumption		7mA max.
supply voltage VDC		2.5V ± 10%
temperature	operating	-20°C ~ +70°C / -40°C ~ +85°C
	storage	-40°C ~ +85°C
output	rise & fall time	see table 2
	load max.	15pF
	current max.	4mA
	low level max.	0.1 x VDC
	high level min.	0.9 x VDC
output enable time max.		1ms
output disable time max.		250ns
start-up time max.		2ms
standby function		stop
standby current max.		5µA
phase jitter 12kHz~20MHz		< 0.1ps RMS typ.
symmetry at 0.5 x VDC		45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	K	F	H			
	± 13 ppm	± 10 ppm	± 8 ppm			
-20 °C ~ +70 °C	○	○	○			
-40 °C ~ +85 °C	○	○	○			
○ available						

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

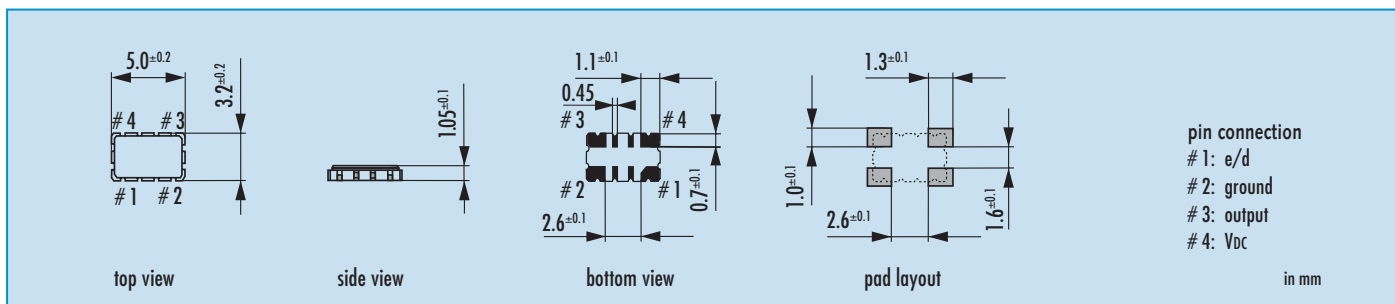
Table 2: Rise & Fall Time max.

5.0 ns: 4.0 ~ 54.0 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
------------------------	--

Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" (V _{IH} ≥ 0.7 V _{DC})	active
low "0" (V _{IL} ≤ 0.3 V _{DC})	high impedance
stop function: • oscillator stops • output high impedance	

Dimensions



Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	4.0 ~ 54.0 MHz	JO53H	see table 1	2.5 = 2.5 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

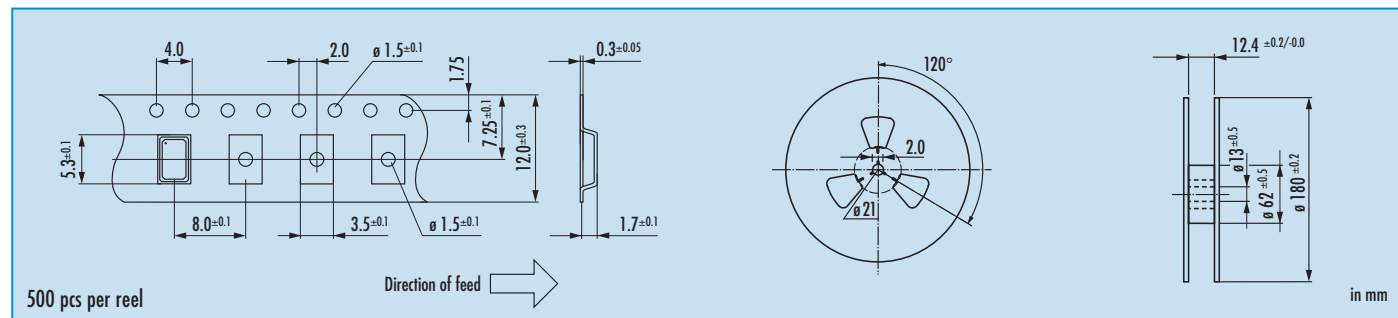
Example: O 26.0-JO53H-F-2.5-1 (LF = RoHS compliant / Pb free pads)



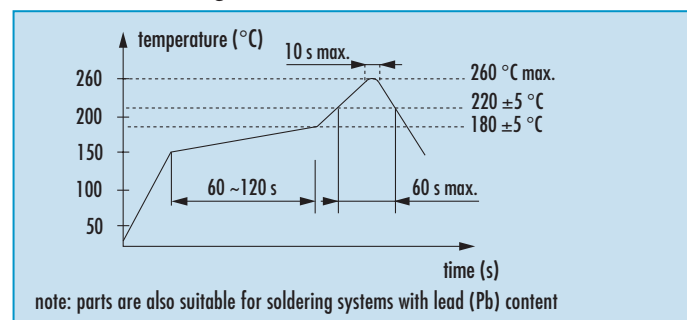
Jauch Quartz GmbH • e-mail: info@jauch.de
 full data can be found under: www.jauch.de / www.jauch.fr / www.jauchusa.com
 All specifications are subject to change without notice

Oscillator · JO53H · 2.5 V · High Stability

Taping Specification



Reflow Soldering Profile



Marking

frequency / company code / frequency stability code / 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

Packing Note

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



actual size

Oscillator · JO53 · 2.8 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- high temperature version available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 2.8 V
frequency range	0.50 ~ 80.0 MHz (15 pF max.)
	0.50 ~ 50.0 MHz (30 pF max.)
	2.00 ~ 50.0 MHz (15 pF max. for T2 & T3*)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	2.8 V ± 5%
temperature	operating
	-10 °C ~ +70 °C
	-40 °C ~ +85 °C
	-40 °C ~ +105 °C
	-40 °C ~ +125 °C ask if available
	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.
	5 mA / 4 mA (T2 & T3*)
	low level max.
	0.1 x V_{DC} / 0.4 V (T2 & T3*)
	high level min.
	0.9 x V_{DC} / V_{DC} - 0.4 V (T2 & T3*)
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 / 20 µA (T2 & T3*)
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

● standard ○ available ■ ask if available △ excludes aging

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

Table 2: Current Consumption max.

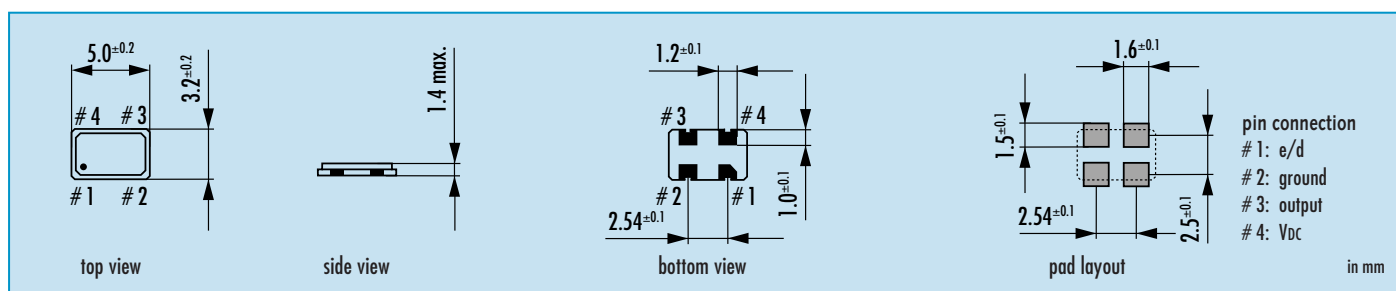
Current at 15 pF load		Current at 30 pF load	
0.5 ~ 14.9 MHz	6 mA	0.5 ~ 14.9 MHz	10 mA
15.0 ~ 29.9 MHz	8 mA	15.0 ~ 29.9 MHz	12 mA
30.0 ~ 39.9 MHz	12 mA	30.0 ~ 39.9 MHz	15 mA
40.0 ~ 49.9 MHz	15 mA	40.0 ~ 50.0 MHz	20 mA
50.0 ~ 59.9 MHz	20 mA		
60.0 ~ 80.0 MHz	30 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 1.79 MHz	8 ns: 0.50 ~ 50.00 MHz
5 ns: 1.80 ~ 49.99 MHz	
4 ns: 50.00 ~ 80.00 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



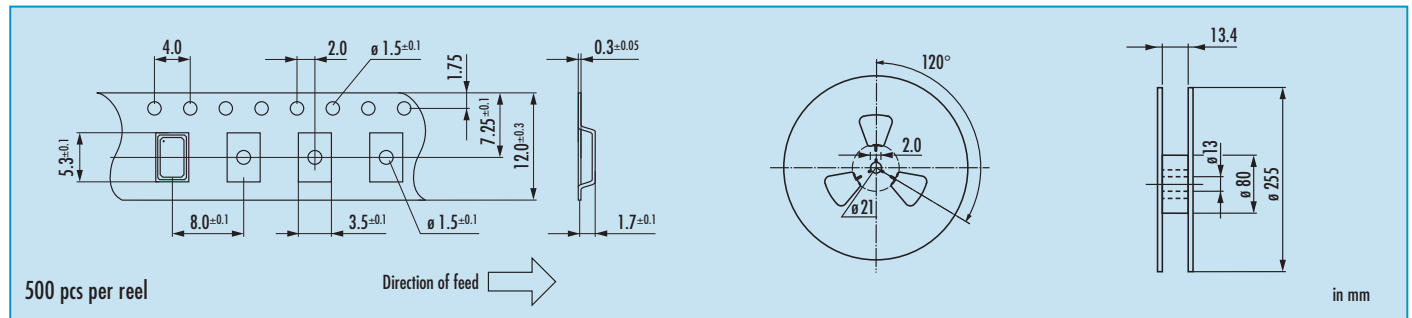
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 80.0 MHz	JO53	see table 1	2.8 = 2.8 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: O 20.0-JO53-B-2.8-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 2.8 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

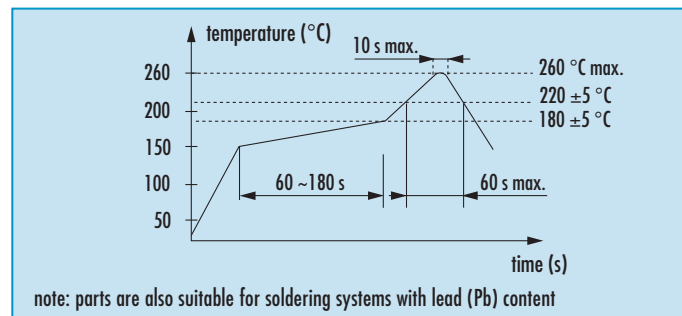
frequency
type / date code

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

2: 2012 5: 2015
3: 2013 6: 2016
4: 2014 7: 2017

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



actual size

Oscillator · JO53 · 3.0 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- high temperature version available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 3.0 V
frequency range	0.50 ~ 125.0 MHz (15 pF max.)
	0.50 ~ 50.0 MHz (30 pF max.)
	2.00 ~ 50.0 MHz (15 pF max. for T2 & T3*)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	3.0 V ± 5%
temperature	operating
	-10 °C ~ +70 °C
	-40 °C ~ +85 °C
	-40 °C ~ +105 °C
storage	-40 °C ~ +125 °C ask if available
	-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.
low level max.	5 mA / 4 mA (T2 & T3*)
	0.1 x V _{DC} / 0.4 V (T2 & T3*)
	high level min.
	0.9 x V _{DC} / V _{DC} - 0.4 V (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.	10 µA / 20 µA (T2 & T3*)
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V _{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

stability code		A	B	G	C	D
		± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm	± 20 ppm
-20 °C ~ +70 °C	STD.		●	○	○	△
-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.

Table 2: Current Consumption max.

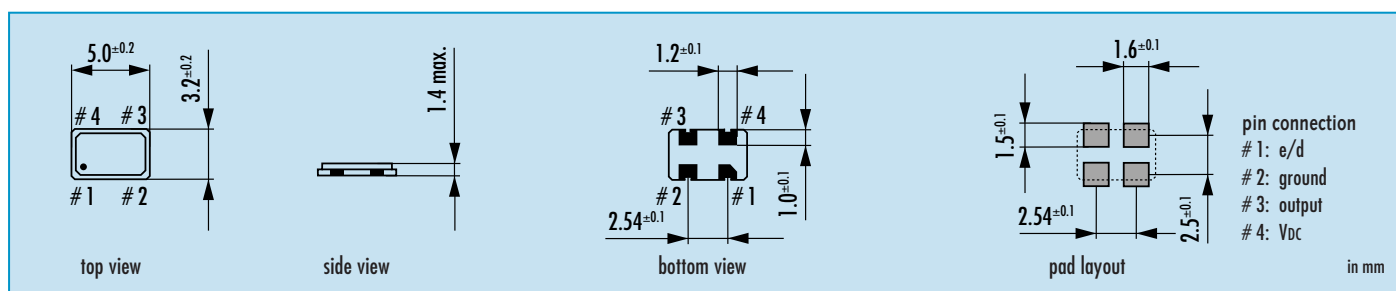
Current at 15 pF load	Current at 30 pF load
0.5 ~ 29.9 MHz 10 mA	0.5 ~ 29.9 MHz 10 mA
30.0 ~ 49.9 MHz 20 mA	30.0 ~ 50.0 MHz 25 mA
50.0 ~ 79.9 MHz 30 mA	
80.0 ~ 125.0 MHz 40 mA	

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 1.79 MHz	7 ns: 0.50 ~ 50.00 MHz
5 ns: 1.80 ~ 49.99 MHz	
4 ns: 50.00 ~ 125.00 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



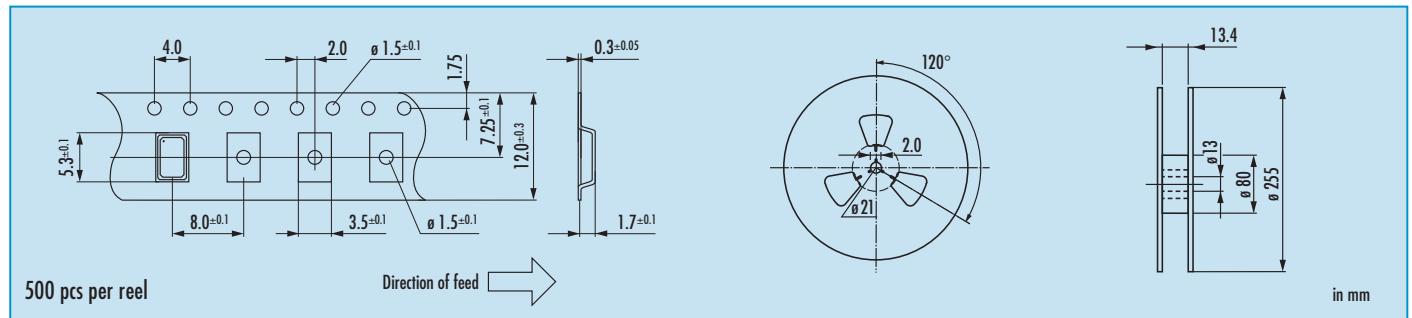
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 125.0 MHz	JO53	see table 1	3.0 = 3.0 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: O 20.0-JO53-B-3.0-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 3.0 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
type / date code

date code:

A ~ M: Jan. - Dec.

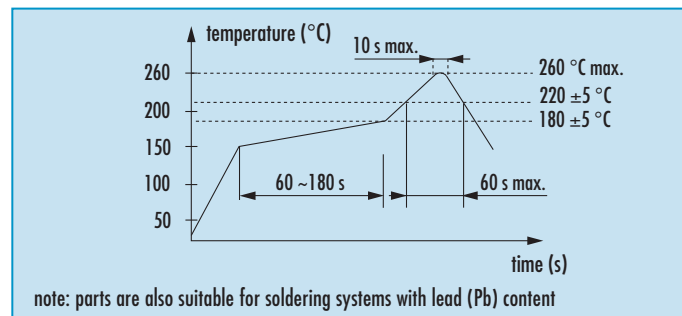
2: 2012 5: 2015

3: 2013 6: 2016

4: 2014 7: 2017

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



actual size

Oscillator · JO53 · 3.3 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- high temperature version available
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 3.3 V
frequency range	0.50 ~ 125.0 MHz (15 pF max.)
	0.50 ~ 50.0 MHz (30 pF max.)
	2.00 ~ 50.0 MHz (15 pF max. for T2 & T3*)
frequency stability over all**	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	3.3 V ± 5%
temperature	operating
	-10 °C ~ +70 °C
	-40 °C ~ +85 °C
	-40 °C ~ +105 °C
	-40 °C ~ +125 °C ask if available
	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.
	5 mA / 4 mA (T2 & T3*)
	low level max.
	0.1 x V _{DC} / 0.4 V (T2 & T3*)
	high level min.
	0.9 x V _{DC} / V _{DC} - 0.4 V (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.	10 µA / 20 µA (T2 & T3*)
phase jitter 12 kHz ~ 20.0 MHz	< 1.0 ps RMS
symmetry at 0.5 x V _{DC}	45% ~ 55% (40% ~ 60% max.)

* ask if available

Table 1: Frequency Stability Code

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

● standard ○ available ■ ask if available △ excludes aging

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

Table 2: Current Consumption max.

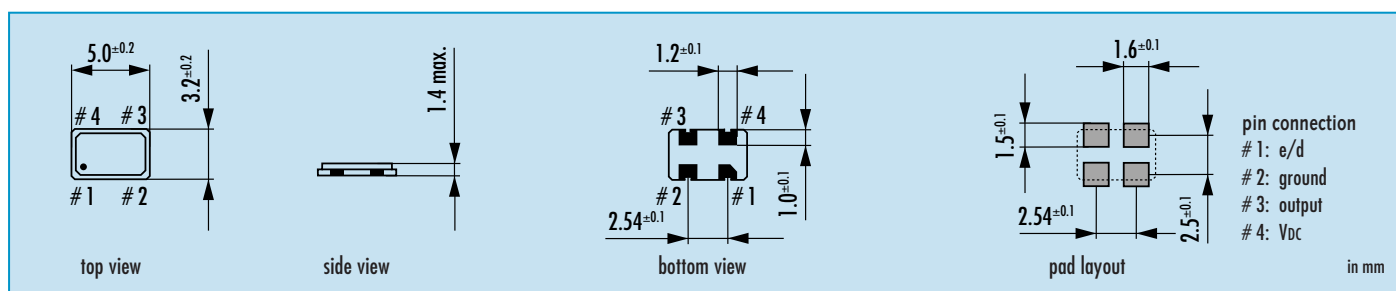
Current at 15 pF load		Current at 30 pF load	
0.5 ~ 29.9 MHz	10 mA	0.5 ~ 29.9 MHz	10 mA
30.0 ~ 49.9 MHz	20 mA	30.0 ~ 50.0 MHz	25 mA
50.0 ~ 79.9 MHz	30 mA		
80.0 ~ 125.0 MHz	45 mA		

Table 3: Rise & Fall Time max.

at 15 pF	at 30 pF
6 ns: 0.50 ~ 1.79 MHz	7 ns: 0.50 ~ 50.00 MHz
5 ns: 1.80 ~ 49.99 MHz	
4 ns: 50.00 ~ 125.00 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



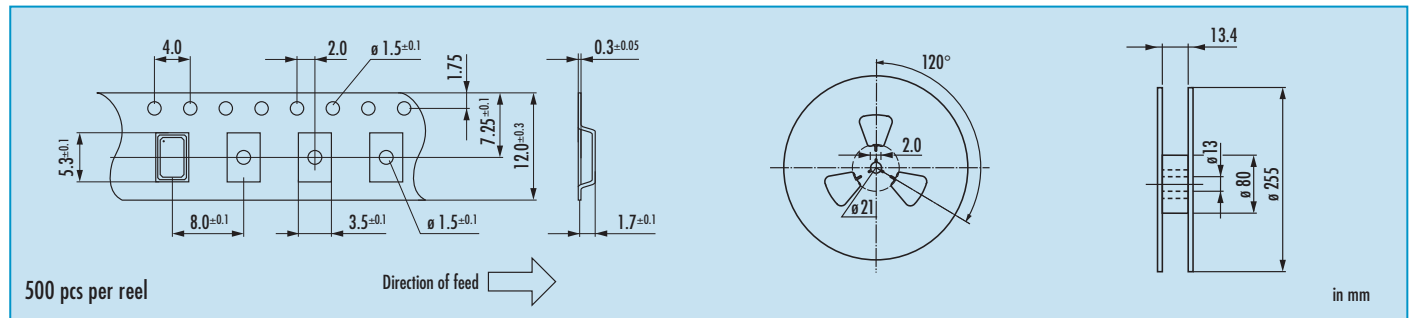
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 125.0 MHz	JO53	see table 1	3.3 = 3.3 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: O 20.0-JO53-B-3.3-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 3.3 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
type / date code

date code:

A ~ M: Jan. - Dec.

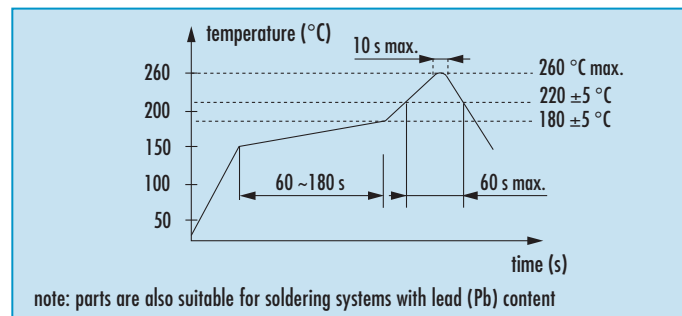
2: 2012 5: 2015

3: 2013 6: 2016

4: 2014 7: 2017

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



actual size

Oscillator · JO53H · 3.3 V

High Stability Oscillator with Stop Function · 5.0 x 3.2 mm

- high stability temp. compensated oscillator with CMOS output
- stability meets spec for WiMax and WLAN
- RoHS compliant, ceramic/metal package
- reflow soldering temperature: 260°C max.



General Data

type		JO53H 3.3V
frequency range		4.0 ~ 54.0 MHz
frequency stability over all*		± 8ppm ~ ± 13ppm (table 1)
aging 1st year		± 2ppm max.
current consumption		7mA max.
supply voltage VDC		3.3V ±10%
temperature	operating	-20°C ~ +70°C / -40°C ~ +85°C
	storage	-40°C ~ +85°C
output	rise & fall time	see table 2
	load max.	15pF
	current max.	4mA
	low level max.	0.1 x VDC
	high level min.	0.9 x VDC
output enable time max.		1ms
output disable time max.		250ns
start-up time max.		2ms
standby function		stop
standby current max.		5µA
phase jitter 12kHz~20MHz		< 0.1ps RMS typ.
symmetry at 0.5 x VDC		45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	K	F	H			
	± 13 ppm	± 10 ppm	± 8 ppm			
-20 °C ~ +70 °C	○	○	○			
-40 °C ~ +85 °C	○	○	○			
○ available						

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

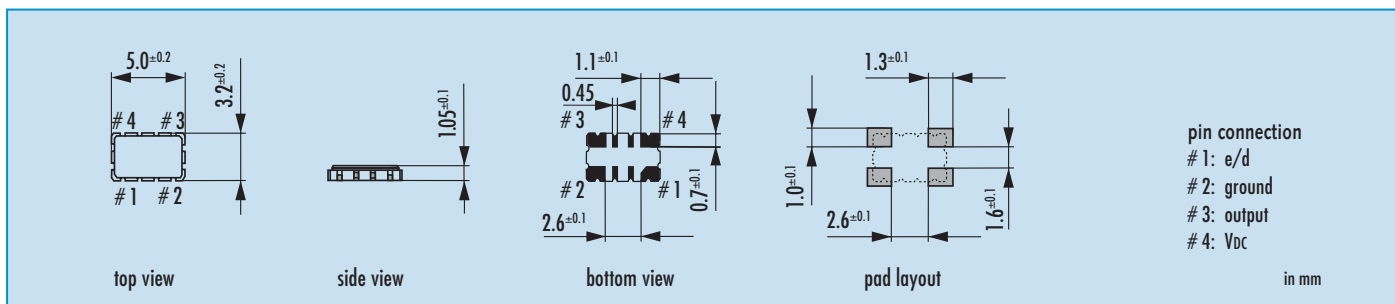
Table 2: Rise & Fall Time max.

5.0 ns: 4.0 ~ 54.0 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
------------------------	--

Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	active
high "1" (V _{IH} ≥ 0.7 V _{DC})	active
low "0" (V _{IL} ≤ 0.3 V _{DC})	high impedance
stop function: • oscillator stops • output high impedance	

Dimensions



Order Information

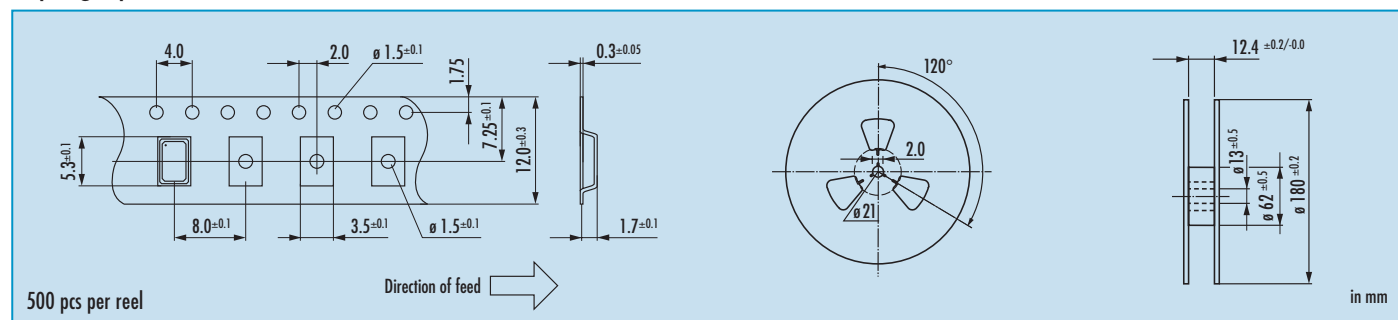
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	4.0 ~ 54.0 MHz	JO53H	see table 1	3.3 = 3.3 V	1 = 15 pF	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 26.0-JO53H-F-3.3-1 (LF = RoHS compliant / Pb free pads)

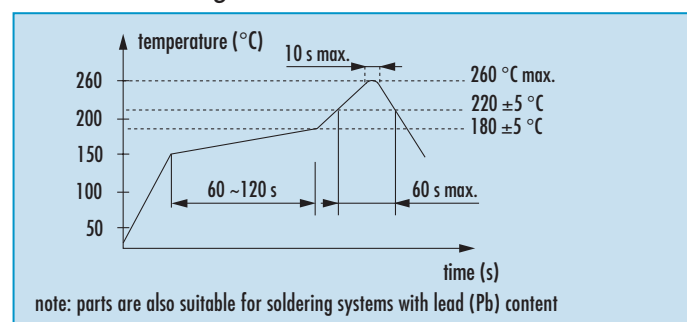


Oscillator · JO53H · 3.3 V · High Stability

Taping Specification



Reflow Soldering Profile



Marking

frequency / company code / frequency stability code / 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

Packing Note

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



actual size

Oscillator · JO53 · 5.0 V

SMD Oscillator with Stop Function · 5.0 x 3.2 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO53 5.0 V
frequency range	0.50 ~ 110.0 MHz (15 pF max.) 0.50 ~ 50.00 MHz (30 pF max.)
frequency stability over all*	± 20 ppm ~ ± 100 ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	5.0 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15 pF / 30 pF current max.: 8 mA low level max.: $0.1 \times V_{DC}$ high level min.: $0.9 \times V_{DC}$
output enable time max.	10 ms
output disable time max.	100 ns
start-up time max.	10 ms
standby function	stop
standby current max.	10 µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps RMS
symmetry at $0.5 \times V_{DC}$	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		●	○	○	△
-40 °C ~ +85 °C	●	●	○	○	
● standard ○ available △ excludes aging					

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

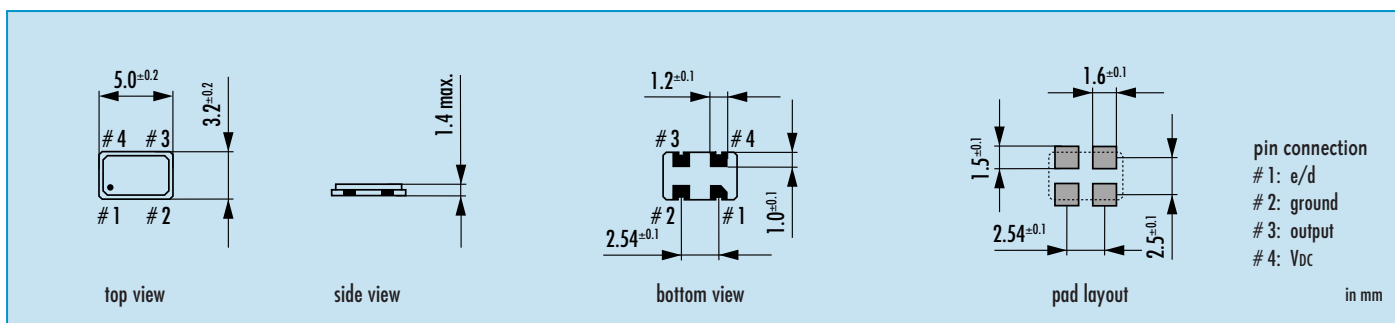
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 14.9 MHz	10 mA	0.5 ~ 14.9 MHz	15 mA
15.0 ~ 29.9 MHz	15 mA	15.0 ~ 29.9 MHz	20 mA
30.0 ~ 39.9 MHz	25 mA	30.0 ~ 50.0 MHz	40 mA
40.0 ~ 49.9 MHz	35 mA		
50.0 ~ 59.9 MHz	40 mA		
60.0 ~ 79.9 MHz	45 mA		
80.0 ~ 110.0 MHz	50 mA		

Table 3: Rise & Fall Time max.

6 ns: 0.5 ~ 1.79 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
5 ns: 1.80 ~ 49.99 MHz	
4 ns: 50.0 ~ 110.00 MHz	

Dimensions



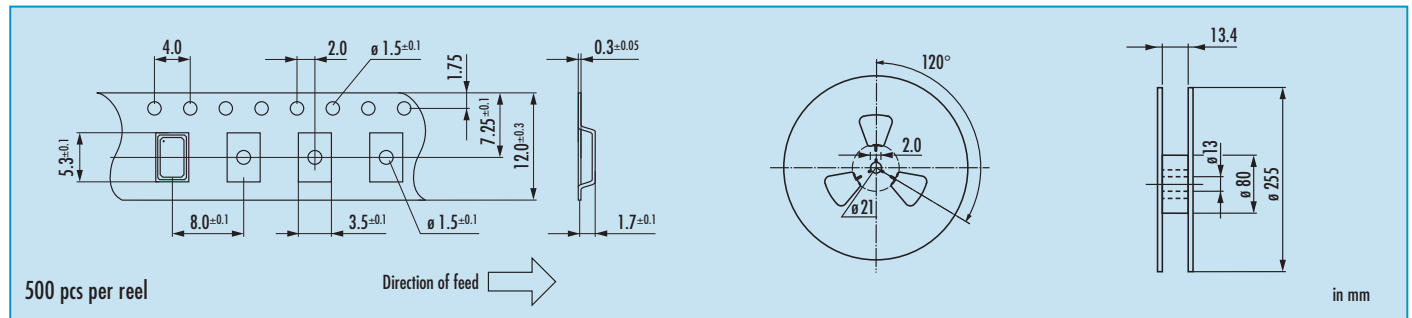
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 110.0 MHz	JO53	see table 1	5.0 = 5.0 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO53-B-5.0-1 (LF = RoHS compliant / Pb free pins or pads)

Oscillator · JO53 · 5.0 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

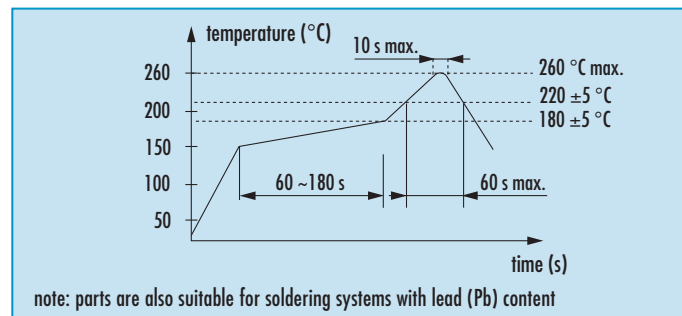
frequency
type / date code

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

2: 2012 5: 2015
3: 2013 6: 2016
4: 2014 7: 2017

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



actual size

Oscillator · JO75 · 1.8 V

SMD Oscillator with Stop Function · 7.5 x 5.0 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75 1.8V
frequency range	0.50 ~ 160.0 MHz (15pF max.) 0.50 ~ 50.0 MHz (30pF max.)
frequency stability over all*	± 20ppm ~ ± 100ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	1.8V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max.: 15pF / 30pF current max.: 2mA / 2.8mA low level max.: 0.2 x V _{DC} high level min.: 0.8 x V _{DC}
output enable time max.	10ms
output disable time max.	250ns
start-up time max.	10ms
standby function	stop
standby current max.	10µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps 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
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm
-10 °C ~ +70 °C		●	○	○
-40 °C ~ +85 °C	●	○	○	△
● standard ○ available △ excludes shock and vibration				

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

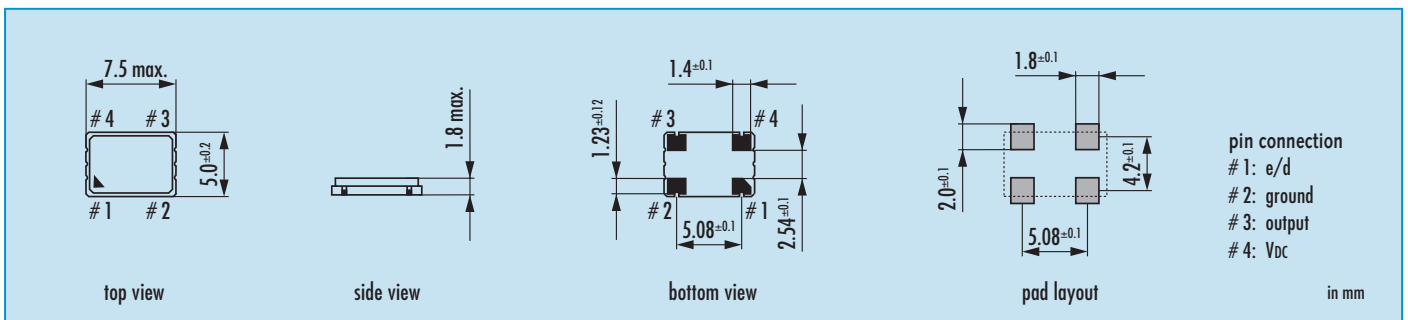
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 19.9 MHz	5 mA	0.5 ~ 19.9 MHz	8 mA
20.0 ~ 49.9 MHz	8 mA	20.0 ~ 50.0 MHz	18 mA
50.0 ~ 79.9 MHz	15 mA		
80.0 ~ 124.9 MHz	25 mA		
125.0 ~ 160.0 MHz	35 mA		

Table 3: Rise & Fall Time max.

8 ns: 0.5 ~ 1.79 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
7 ns: 1.8 ~ 49.99 MHz	
5 ns: 50.0 ~ 79.99 MHz	
4 ns: 80.0 ~ 124.99 MHz	
3 ns: 125.0 ~ 160.00 MHz	

Dimensions



Order Information

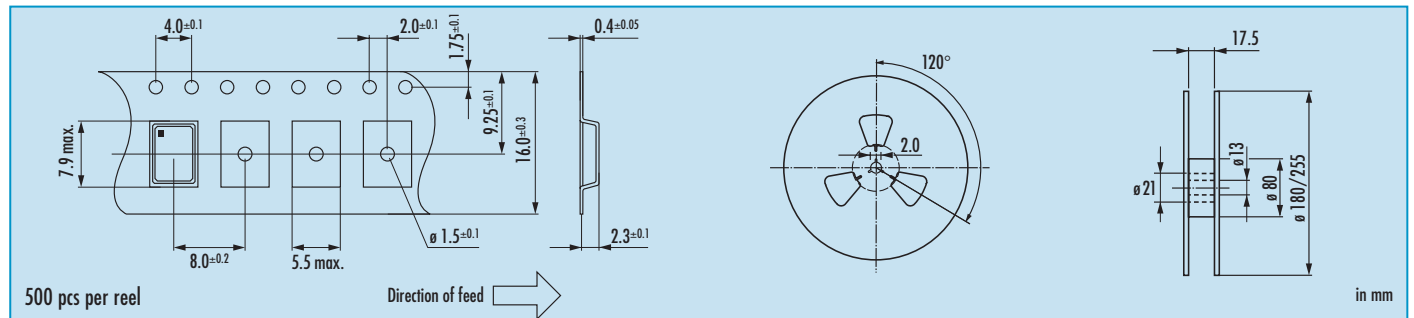
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 160.0 MHz	JO75	see table 1	1.8 = 1.8 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO75-B-1.8-1 (LF = RoHS compliant / Pb free pins or pads)



Oscillator · JO75 · 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	

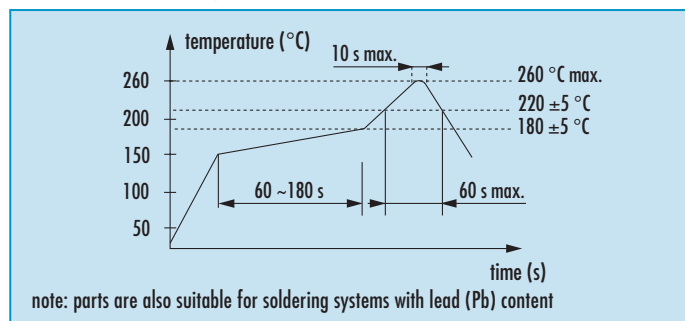
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75 · 2.5 V

SMD Oscillator with Stop Function · 7.5 x 5.0 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75 2.5 V
frequency range	0.50 ~ 160.0 MHz (15pF max.) 0.50 ~ 50.00 MHz (30pF max.)
frequency stability over all*	± 20ppm ~ ± 50ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	2.5 V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15pF / 30pF current max.: 4mA / 8mA low level max.: 0.1 x V _{DC} high level min.: 0.9 x V _{DC}
output enable time max.	10ms
output disable time max.	150ns
start-up time max.	10ms
standby function	stop
standby current max.	10µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps 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
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm
-10 °C ~ +70 °C		○	○	○
-40 °C ~ +85 °C	○	○	○	△
● standard ○ available △ excludes shock and vibration				

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

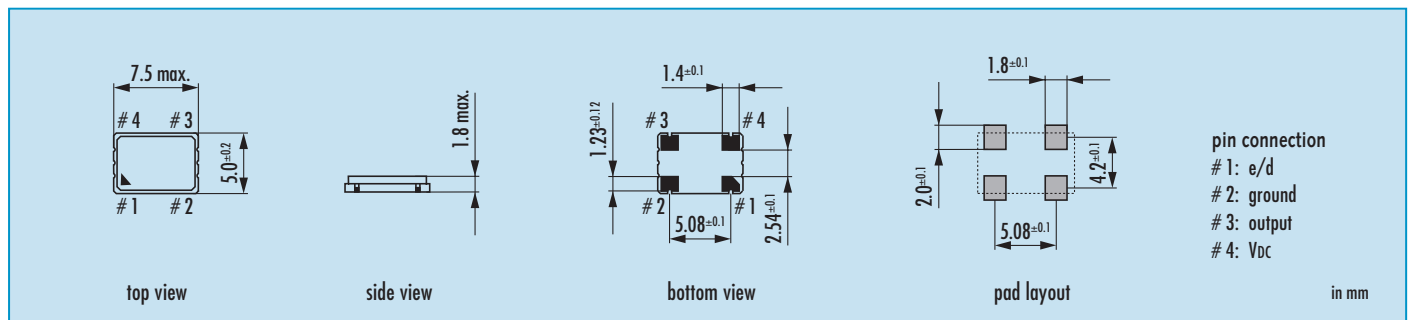
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 19.9 MHz	6 mA	0.5 ~ 19.9 MHz	10 mA
20.0 ~ 49.9 MHz	11 mA	20.0 ~ 50.0 MHz	20 mA
50.0 ~ 79.9 MHz	17 mA		
80.0 ~ 124.9 MHz	28 mA		
125.0 ~ 160.0 MHz	38 mA		

Table 3: Rise & Fall Time max.

8 ns: 0.5 ~ 1.79 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
6 ns: 1.8 ~ 49.99 MHz	
5 ns: 50.0 ~ 79.99 MHz	
4 ns: 80.0 ~ 124.99 MHz	
3 ns: 125.0 ~ 160.00 MHz	

Dimensions



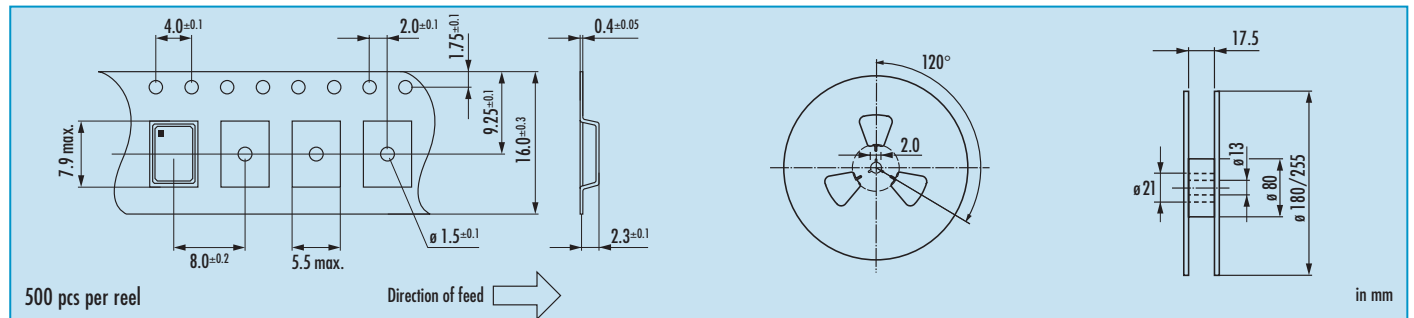
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.5 ~ 160.0 MHz	JO75	see table 1	2.5 = 2.5 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C
Example: O 20.0-JO75-B-2.5-1 (LF = RoHS compliant / Pb free pads)						



Oscillator · JO75 · 2.5 V · Stop Function

Taping Specification



Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	use external pull-up resistor
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	

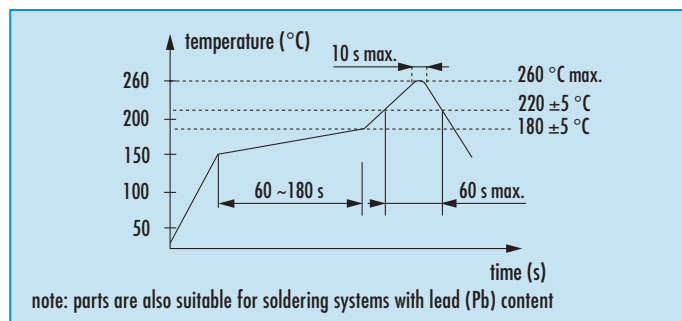
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75 · 2.8 V

SMD Oscillator with Stop Function · 7.5 x 5.0 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75 2.8V
frequency range	0.50 ~ 165.0 MHz (15pF max.) 0.50 ~ 50.0 MHz (30pF max.)
frequency stability over all*	± 20ppm ~ ± 100ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	2.8V ± 5%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15pF / 30pF current max.: 4mA / 8mA low level max.: 0.1 x V _{DC} high level min.: 0.9 x V _{DC}
output enable time max.	10ms
output disable time max.	150ns
start-up time max.	10ms
standby function	stop
standby current max.	10µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps 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	
	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm	
-10 °C ~ +70 °C		○	○	○	
-40 °C ~ +85 °C	○	○	○	△	
● standard ○ available △ excludes shock and vibration					

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

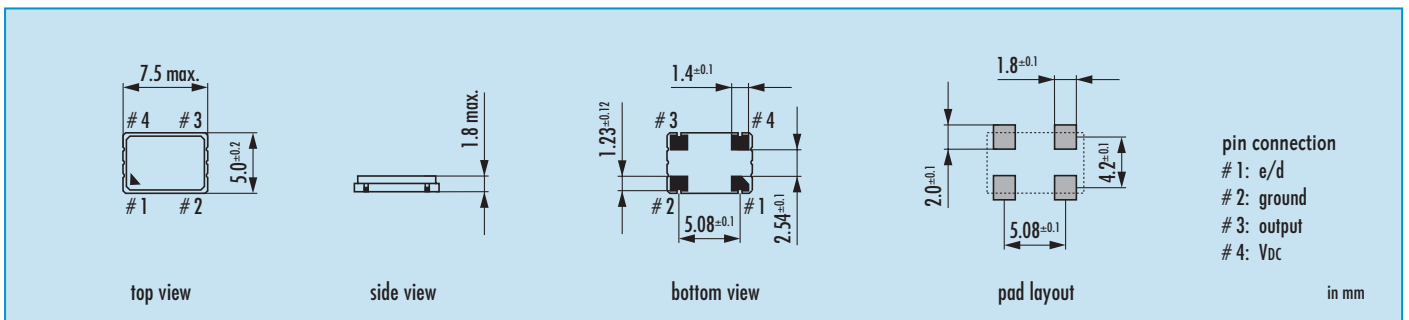
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 19.9 MHz	7 mA	0.5 ~ 19.9 MHz	12 mA
20.0 ~ 49.9 MHz	12 mA	20.0 ~ 50.0 MHz	25 mA
50.0 ~ 79.9 MHz	20 mA		
80.0 ~ 124.9 MHz	30 mA		
125.0 ~ 165.0 MHz	50 mA		

Table 3: Rise & Fall Time max.

8 ns: 0.5 ~ 1.79 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
6 ns: 1.8 ~ 49.99 MHz	
5 ns: 50.0 ~ 79.99 MHz	
4 ns: 80.0 ~ 124.99 MHz	
3 ns: 125.0 ~ 165.00 MHz	

Dimensions



Order Information

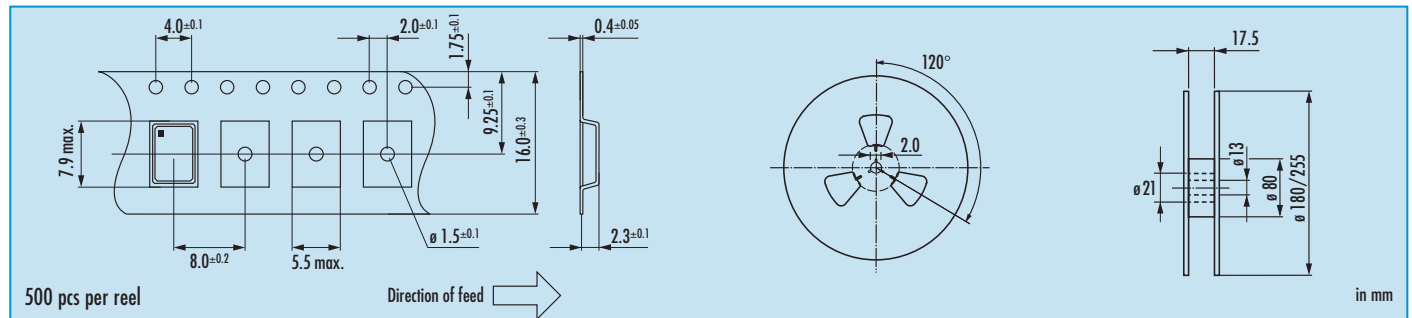
0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.50 ~ 165.0 MHz	JO75	see table 1	2.8 = 2.8 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO75-B-2.8-1 (LF = RoHS compliant / Pb free pads)



Oscillator · JO75 · 2.8 V · Stop Function

Taping Specification



Enable / Disable Function

pin #1 (e/d control)	pin #3 (output)
open	use external pull-up resistor
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	

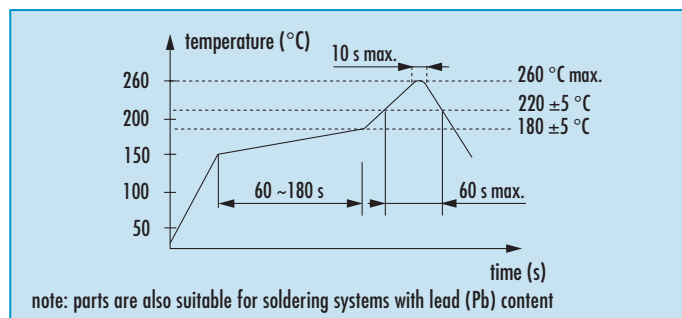
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75 · 3.3 V

SMD Oscillator with Stop Function · 7.5 x 5.0 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75 3.3 V
frequency range	1.0 ~ 170.0 MHz (15pF max.) 1.0 ~ 80.0 MHz (30pF max)
frequency stability over all*	± 20ppm ~ ± 100ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	3.3 V ± 10%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15pF / 30pF current max.: 8mA low level max.: 0.1 x V_{DC} high level min.: 0.9 x V_{DC}
output enable time max.	10ms
output disable time max.	200ns
start-up time max.	10ms
standby function	stop
standby current max.	10µA
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps RMS
symmetry at 0.5 x V_{DC}	45% ~ 55% typ. (40% ~ 60% max.)

note: Suffix "X" includes 10 years aging, for A, B, G available.

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		●	○	○	△
-40 °C ~ +85 °C	○	●	○	△	

● standard ○ available △ excludes shock and vibration

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

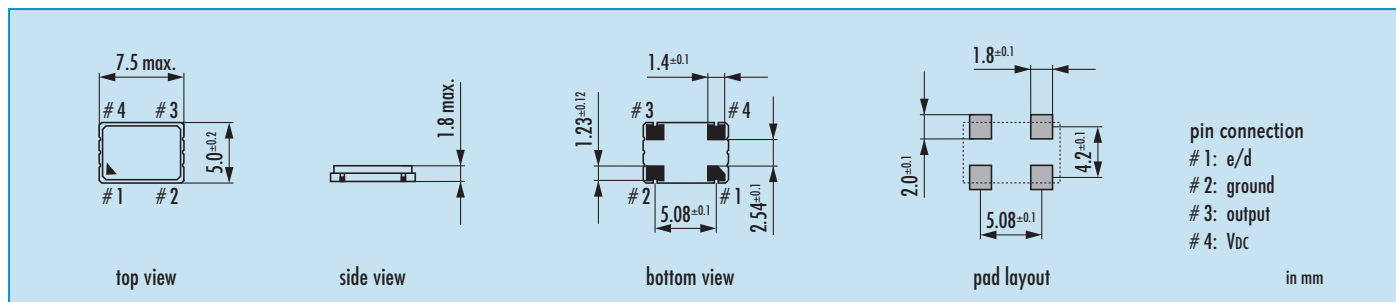
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
1.0 ~ 19.9 MHz	8 mA	1.0 ~ 19.9 MHz	15 mA
20.0 ~ 49.9 MHz	15 mA	20.0 ~ 49.9 MHz	25 mA
50.0 ~ 79.9 MHz	25 mA	50.0 ~ 80.0 MHz	35 mA
80.0 ~ 99.9 MHz	35 mA		
100.0 ~ 124.9 MHz	45 mA		
125.0 ~ 170.0 MHz	60 mA		

Table 3: Rise & Fall Time max.

6.0 ns: 1.0 ~ 9.9 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
5.0 ns: 10.0 ~ 39.9 MHz	
4.0 ns: 40.0 ~ 69.9 MHz	
3.0 ns: 70.0 ~ 170.0 MHz	

Dimensions



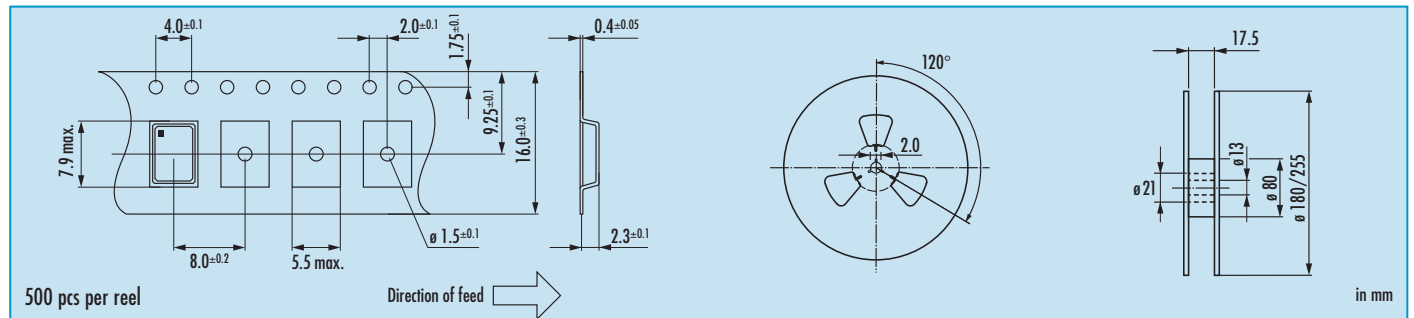
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.0 ~ 170.0 MHz	JO75	see table 1	3.3 = 3.3 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO75-B-3.3-1 (LF = RoHS compliant / Pb free pads)

Oscillator · JO75 · 3.3 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	

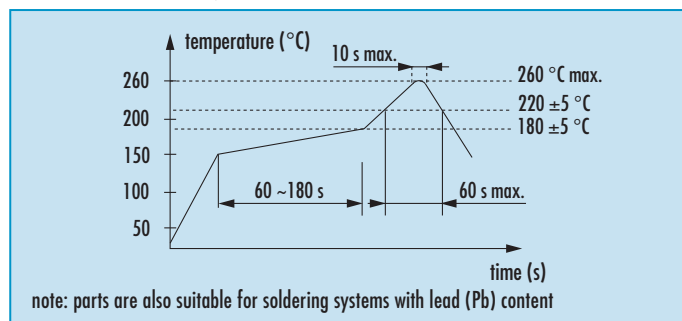
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75H · 3.3 V

High Stability Oscillator with Stop Function · 7.5 x 5.0 mm

- tight tolerance down to ± 10 ppm
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75H 3.3 V high stability
frequency range	1.80 ~ 50.0 MHz
frequency stability over all*	± 10 ppm ~ ± 20 ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	3.3 V $\pm 5\%$
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15pF / 30pF current max.: 4mA low level max.: $0.1 \times V_{DC}$ high level min.: $0.9 \times V_{DC}$
output enable time max.	5ms
output disable time max.	150ns
start-up time max.	5ms
standby function	stop
standby current max.	50 μ A
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps RMS
symmetry at $0.5 \times V_{DC}$	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm		
-10 °C ~ +70 °C	○	△	△		
-40 °C ~ +85 °C	○	△			
○ available △ excludes shock and vibration					

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

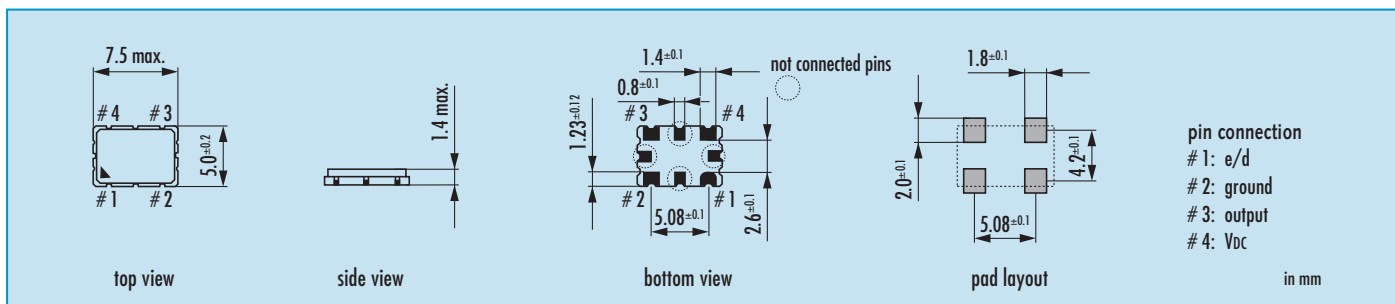
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
1.8 ~ 19.9 MHz	10 mA	1.8 ~ 19.9 MHz	15 mA
20.0 ~ 50.0 MHz	22 mA	20.0 ~ 50.0 MHz	25 mA

Table 3: Rise & Fall Time max.

5.0 ns: 1.80 ~ 50.0 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
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Dimensions



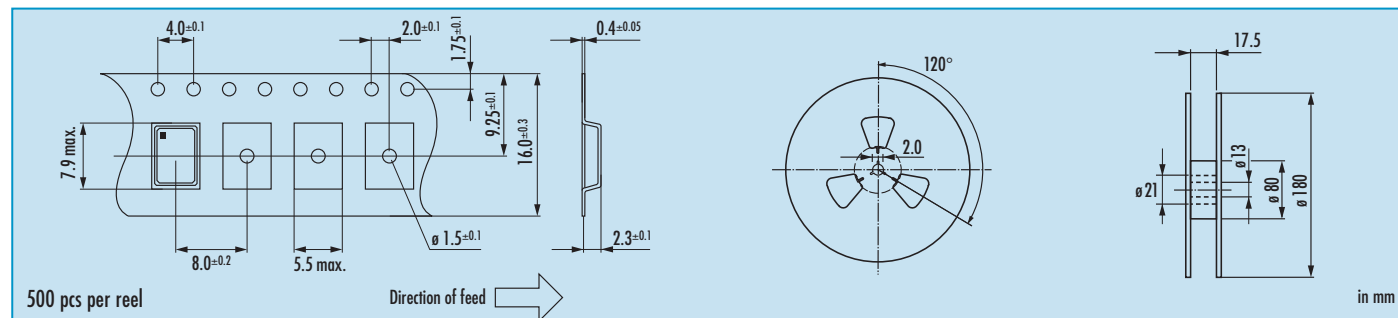
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.80 ~ 50.0 MHz	JO75H	see table 1	3.3 = 3.3 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO75H-D-3.3-1 (LF = RoHS compliant / Pb free pads)

Oscillator · JO75H · 3.3 V · High Stability

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	

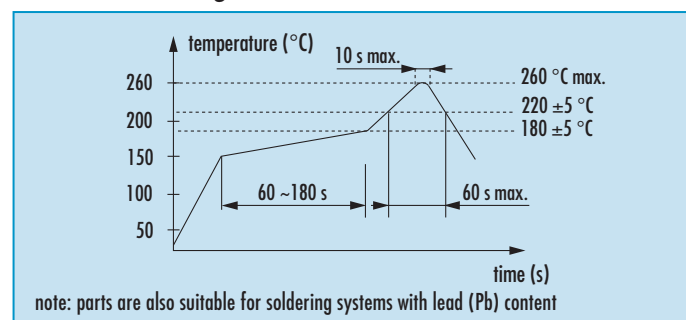
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75 · 3.3 V

Low Frequency Oscillator with Stop Function · 7.5 x 5.0 mm

- high stability type for RTC application
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type		JO75 3.3 V
frequency range		12.0 kHz ~ 1.0 MHz (30pF max.)
frequency stability over all*		± 20ppm ~ ± 100ppm
		see table 1
current consumption		see table 2
supply voltage V_{DC}		3.3 V ± 10%
temperature	operating	-10 °C ~ +70 °C / -40 °C ~ +85 °C
	storage	-55 °C ~ +125 °C
output	rise & fall time	see table 3
	load max.	15pF / 30pF
	current max.	2mA
	low level max.	0.1 x V_{DC}
	high level min.	0.9 x V_{DC}
output enable time max.		5ms
output disable time max.		150ns
start-up time max.		5ms
standby function		stop
standby current max.		10µA
symmetry at 0.5 x V_{DC}		45% ~ 55% 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	○	○	○	○	△
-40 °C ~ +85 °C	○	○	○	△	
● standard ○ available △ excludes shock and vibration					

* 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	Current at 30pF load
12.0 kHz ~ 1.0 MHz 10 mA	12.0 kHz ~ 1.0 MHz 16 mA

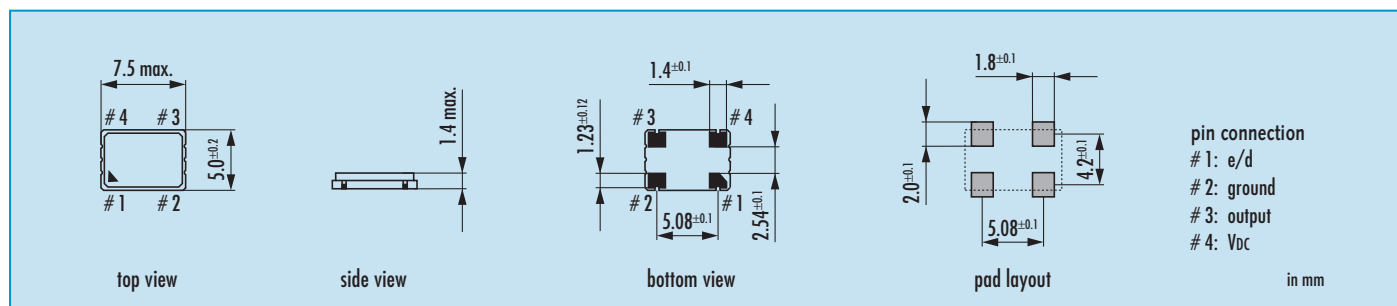
Table 3: Rise & Fall Time max.

6.0 ns: 12.0 kHz ~ 1.0 MHz	note: - specific data on request - rise time: 0.1 V_{DC} ~ 0.9 V_{DC} - fall time: 0.9 V_{DC} ~ 0.1 V_{DC}
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Standard Frequency

32.768 KHz

Dimensions



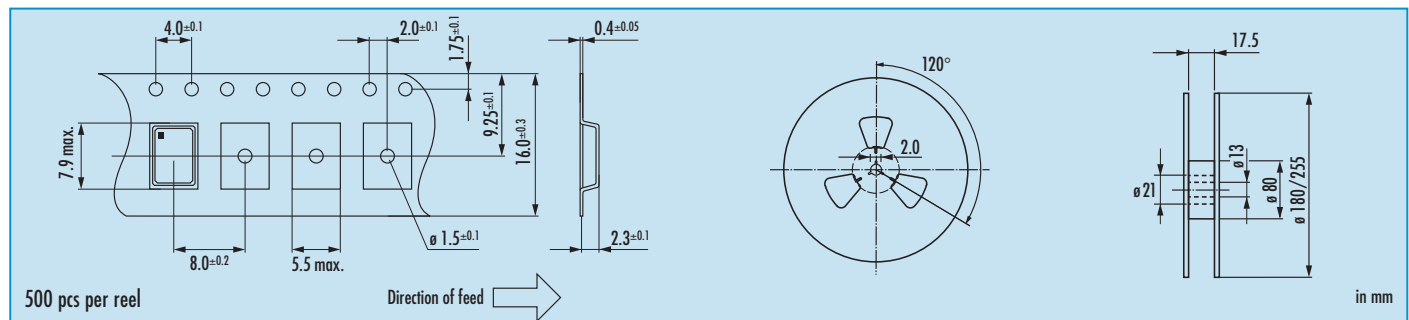
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	0.012 ~ 1.0 MHz	JO75	see table 1	3.3 = 3.3 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 0.032768-JO75-B-3.3-1 (LF = RoHS compliant / Pb free pads)

Oscillator · JO75 · 3.3 V · Low Frequency

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	

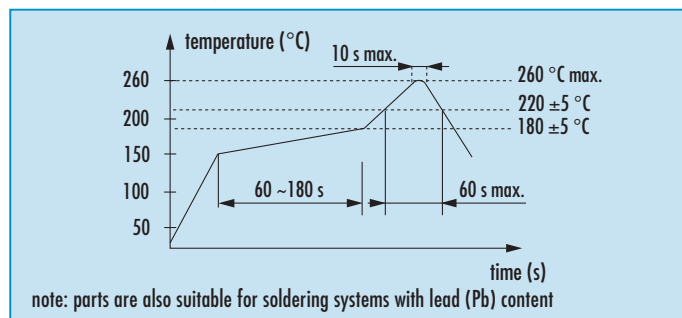
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
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 1: 2011

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



actual size

Oscillator · JO75 · 5.0 V

SMD Oscillator with Tristate Function · 7.5 x 5.0 mm

- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75 5.0 V
frequency range	1.8 ~ 80.0 MHz (15pF/30pF/50pF opt.) 80.0 ~ 107.0 MHz (15pF) on request
frequency stability over all*	± 20ppm ~ ± 100ppm (table 1)
current consumption	see table 2
supply voltage V _{DC}	5.0 V ± 10%
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max.: 15pF / 30pF / 50pF current max.: 16mA low level max.: 0.1 x V _{DC} high level min.: 0.9 x V _{DC}
output enable time max.	100ns
output disable time max.	100ns
start-up time max.	10ms
standby function	tristate
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps RMS
symmetry at 0.5 x V _{DC}	45% ~ 55% typ. (40% ~ 60% max.)

note: Suffix "X" includes 10 years aging, for A, B, G available.

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		●	○	○	△
-40 °C ~ +85 °C	○	●	○	△	

● standard ○ available △ excludes shock and vibration

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

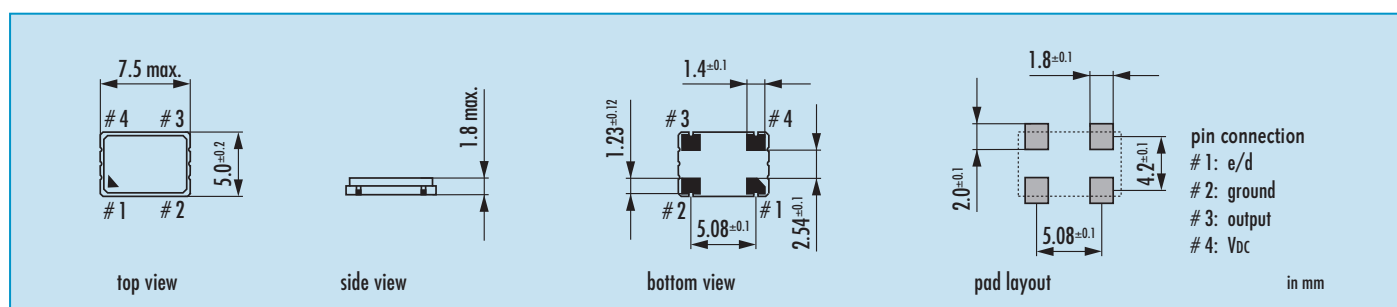
Table 2: Current Consumption max.

Current at 15pF load	Current at 30pF load	Current at 50pF load
1.8 ~ 19.9 MHz 12 mA	1.8 ~ 19.9 MHz 15 mA	1.8 ~ 19.9 MHz 20 mA
20.0 ~ 39.9 MHz 20 mA	20.0 ~ 39.9 MHz 28 mA	20.0 ~ 39.9 MHz 35 mA
40.0 ~ 59.9 MHz 30 mA	40.0 ~ 59.9 MHz 35 mA	40.0 ~ 59.9 MHz 40 mA
60.0 ~ 79.9 MHz 45 mA	60.0 ~ 80.0 MHz 52 mA	60.0 ~ 80.0 MHz 60 mA
80.0 ~ 107.0 MHz 60 mA		

Table 3: Rise & Fall Time max.

6.0 ns: 1.8 ~ 9.9 MHz	note: - specific data on request - rise time: 0.1 V _{DC} ~ 0.9 V _{DC} - fall time: 0.9 V _{DC} ~ 0.1 V _{DC}
5.0 ns: 10.0 ~ 39.9 MHz	
4.0 ns: 40.0 ~ 69.9 MHz	
3.0 ns: 70.0 ~ 107.0 MHz	

Dimensions



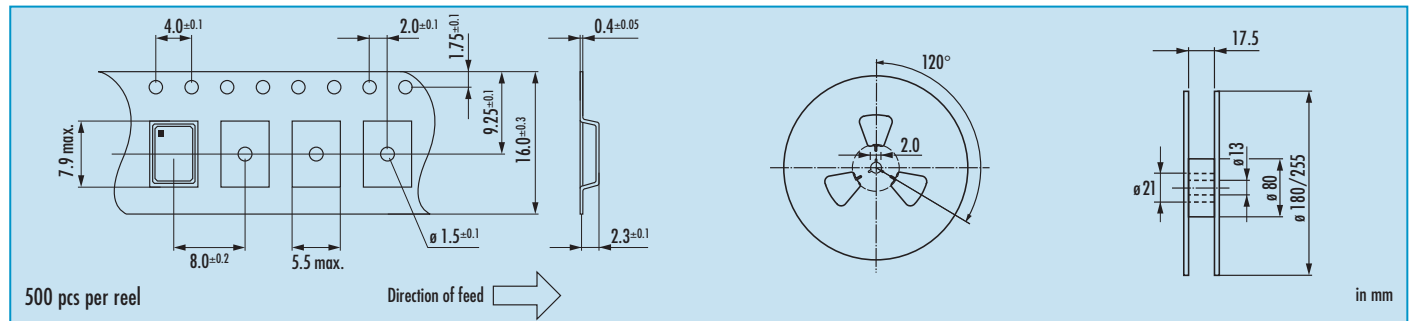
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.8 ~ 80.0 MHz 80.0 ~ 107.0 MHz on req.	JO75	see table 1	5.0 = 5.0 V	1 = 15 pF std. > 80 MHz 2 = 30 pF std. < 80 MHz 3 = 50 pF opt. < 80 MHz	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

Example: O 20.0-JO75-B-5.0-1 (LF = RoHS compliant / Pb free pads)

Oscillator · JO75 · 5.0 V · Tristate 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
disabled conditions: • oscillator active • output high impedance	

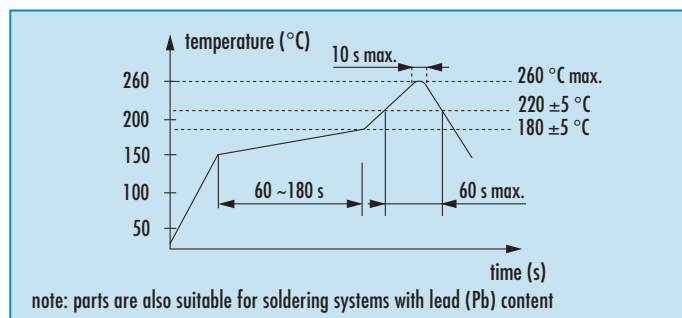
Marking

frequency type / date code

date code:
 A ~ M: Jan. - Dec.
 9: 2009
 0: 2010
 1: 2011

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



actual size

Oscillator · JO75H · 5.0 V

High Stability Oscillator with Stop Function · 7.5 x 5.0 mm

- tight tolerance down to ± 10 ppm
- reflow soldering temperature: 260 °C max.
- ceramic/metal package



General Data

type	JO75H 5.0 V high stability
frequency range	1.80 ~ 50.0 MHz
frequency stability over all*	± 10 ppm ~ ± 20 ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	5.0 V $\pm 5\%$
temperature	operating: -10 °C ~ +70 °C / -40 °C ~ +85 °C storage: -55 °C ~ +125 °C
output	rise & fall time: see table 3 load max: 15pF / 30 pF current max.: 4mA low level max.: $0.1 \times V_{DC}$ high level min.: $0.9 \times V_{DC}$
output enable time max.	5ms
output disable time max.	150ns
start-up time max.	5ms
standby function	stop
standby current max.	50 μ A
phase jitter 12 kHz ~ 20.0 MHz	< 1.0ps RMS
symmetry at $0.5 \times V_{DC}$	45% ~ 55% max.

Table 1: Frequency Stability Code

stability code	D ± 20 ppm	E ± 15 ppm	F ± 10 ppm		
-10 °C ~ +70 °C	○	△	△		
-40 °C ~ +85 °C	○	△			
○ available △ excludes shock and vibration					

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

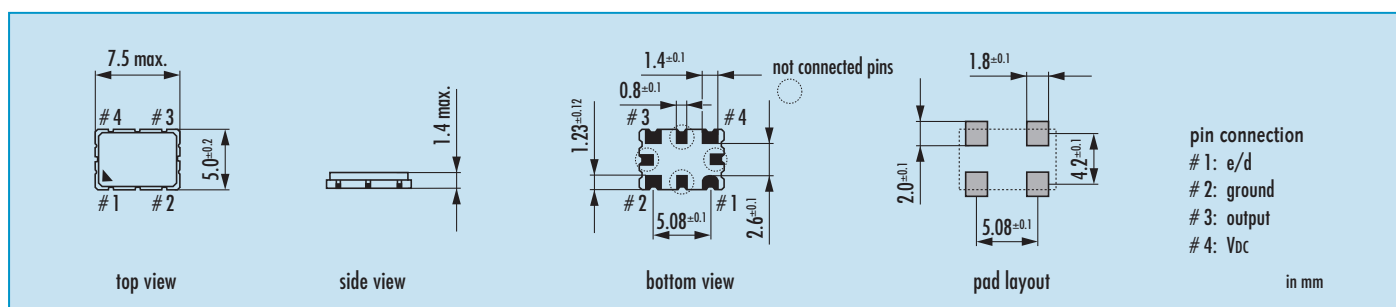
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
1.8 ~ 19.9 MHz	10 mA	1.8 ~ 19.9 MHz	18 mA
20.0 ~ 50.0 MHz	22 mA	20.0 ~ 50.0 MHz	35 mA

Table 3: Rise & Fall Time max.

5.0 ns: 1.80 ~ 50.0 MHz	note: - specific data on request - rise time: $0.1 V_{DC} \sim 0.9 V_{DC}$ - fall time: $0.9 V_{DC} \sim 0.1 V_{DC}$
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Dimensions



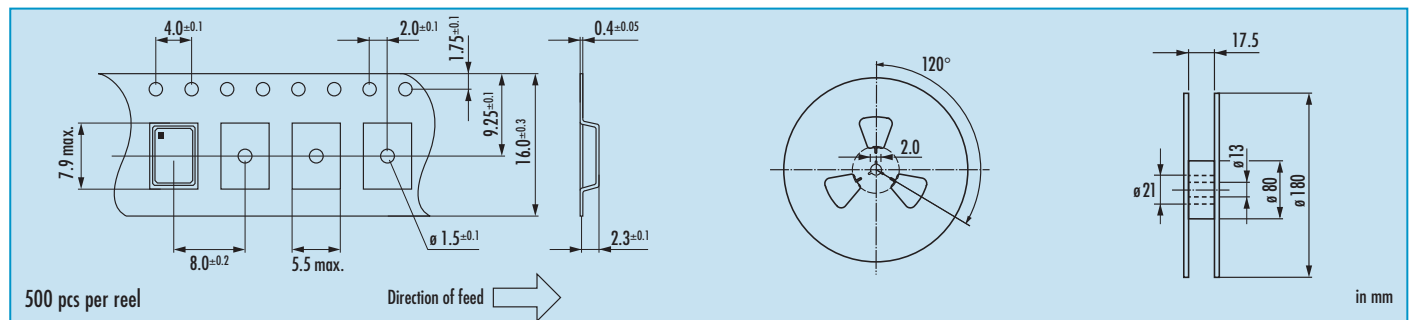
Order Information

0	frequency	type	frequency stability code	supply voltage code	output load code	option
Oscillator	1.80 ~ 50.0 MHz	JO75H	see table 1	5.0 = 5.0 V	1 = 15 pF 2 = 30 pF	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C
Example: O 20.0-JO75H-D-5.0-1 (LF = RoHS compliant / Pb free pads)						



Oscillator · JO75H · 5.0 V · High Stability

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	

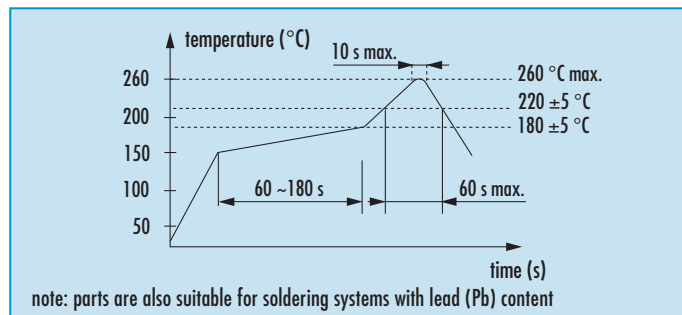
Marking

frequency type / date code

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