



actual size

Oscillator · VX3 · 1.8 V

SMD Oscillator with Stop Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type	VX3 1.8 V
frequency range	0.5 ~ 40.0 MHz
higher frequencies on request	40.1 ~ 125.0 MHz
frequency stability over all*	± 20ppm ~ ± 100ppm see table 1
current consumption	see table 2
supply voltage V_{DC}	1.8V ± 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: 30pF current max.: 2.8mA (<40MHz) / 8.0mA (>40MHz) 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 (<40MHz) / 100µA (>40MHz)
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: Type

stability	± 100 ppm	± 50 ppm	± 30 ppm	± 25 ppm	± 20 ppm
type VX3	V	VH	VS	VQ	VP
output load	30 pF	30 pF	30 pF	30 pF	30 pF
-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.

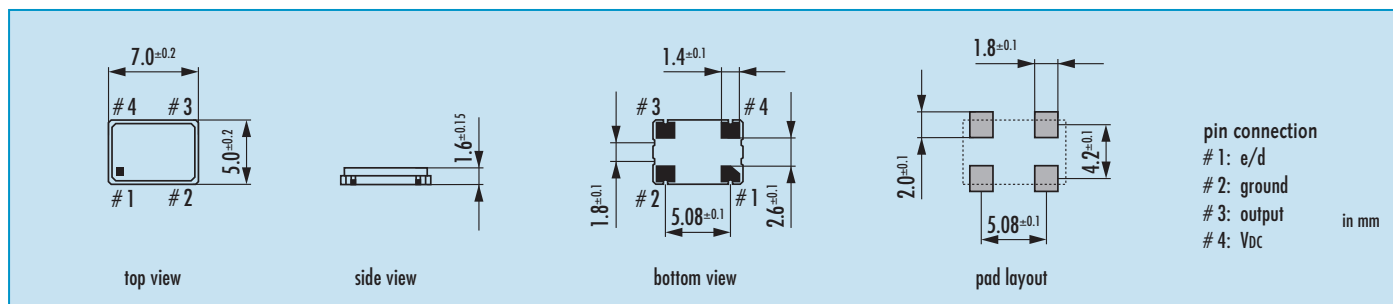
Table 2: Current Consumption max.

Current at 30pF load	
0.50 ~ 19.9 MHz	7 mA
20.0 ~ 39.9 MHz	10 mA
40.0 ~ 69.9 MHz	18 mA
70.0 ~ 94.9 MHz	25 mA
95.0 ~ 125.0 MHz	30 mA

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns:	1.8 ~ 69.90 MHz	
5.0 ns:	70.00 ~ 99.90 MHz	
4.0 ns:	100.00 ~ 125.00 MHz	

Dimensions



Order Information

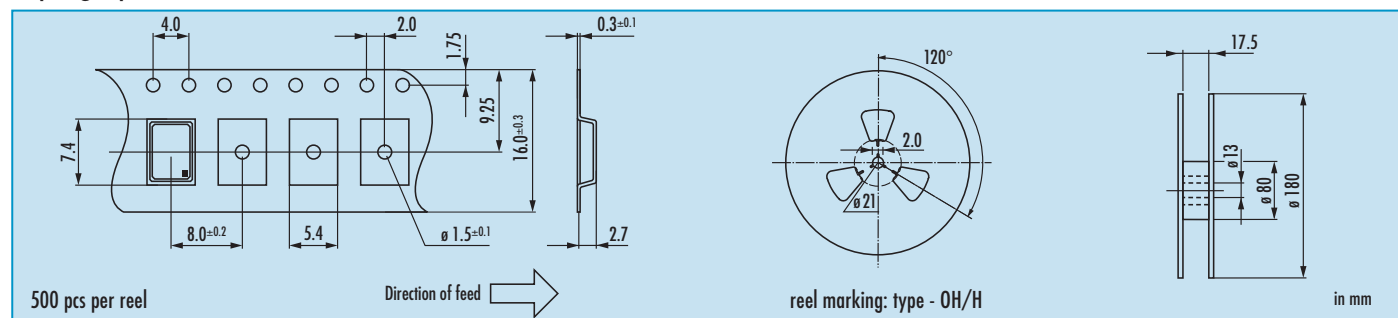
0	frequency	type	option
Oscillator	0.5 ~ 40.0 MHz 40.1 ~ 125.0 MHz on request	VX3V-VX3VP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C
Example: O 20.0-VX3VH (LF = RoHS compliant / Pb free pins or pads)			

Packing Note

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

Oscillator · VX3 · 1.8 V · Stop Function

Taping Specification (JIS-C0806)



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	

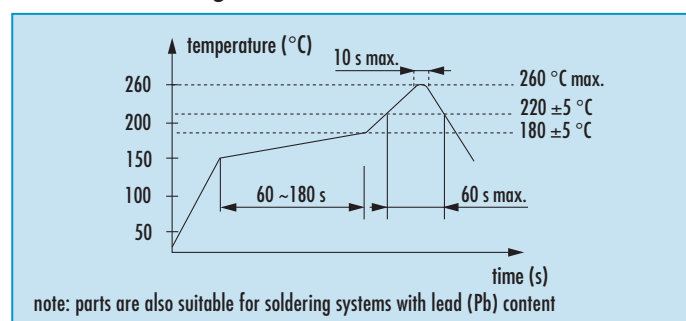
Marking

type / frequency

date code:
 A ~ M: Jan. - Dec.
 0: 2010
 1: 2011
 2: 2012

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





actual size

Oscillator · VX3 · 2.5 V

SMD Oscillator with Stop Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type	VX3 2.5 V
frequency range	0.50 ~ 125.0 MHz (15pF max.) 0.50 ~ 80.0 MHz (30pF max.)
frequency stability over all*	± 20ppm ~ ± 100ppm (table 1)
current consumption	see table 2
supply voltage V_{DC}	2.5 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.	100ns
start-up time max.	10ms
standby function	stop
standby current max.	3pA
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: Type

stability	± 100 ppm		± 50 ppm		± 30 ppm		± 25 ppm		± 20 ppm	
type VX3	U	D	UH	DH	US	DS	UQ	DQ	UP	DP
output load	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF
-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.

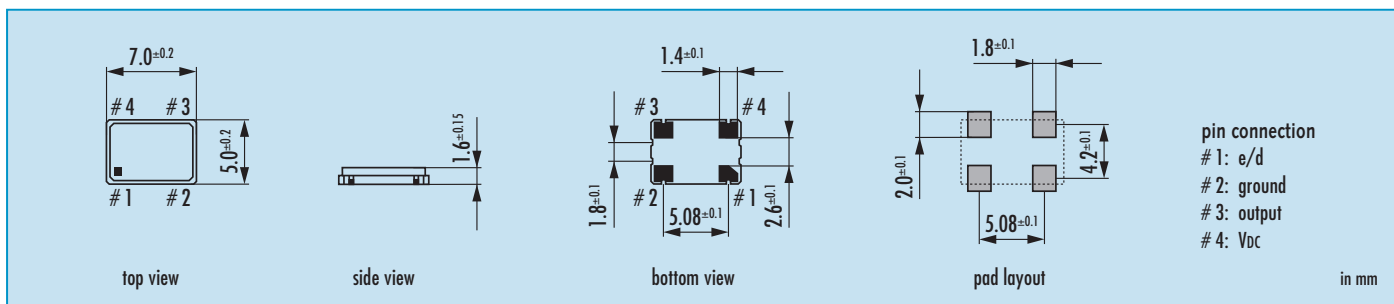
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 33.9 MHz	7 mA	0.5 ~ 19.9 MHz	9 mA
34.0 ~ 49.9 MHz	11 mA	20.0 ~ 49.9 MHz	15 mA
50.0 ~ 79.9 MHz	17 mA	50.0 ~ 80.0 MHz	20 mA
80.0 ~ 125.0 MHz	30 mA		

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns: 1.8 ~ 79.99 MHz	
5.0 ns: 80.0 ~ 99.99 MHz	
3.0 ns: 100.0 ~ 125.00 MHz	

Dimensions



Order Information

0	frequency	type	option
Oscillator	0.5 ~ 125.0 MHz	VX3U-VX3DP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

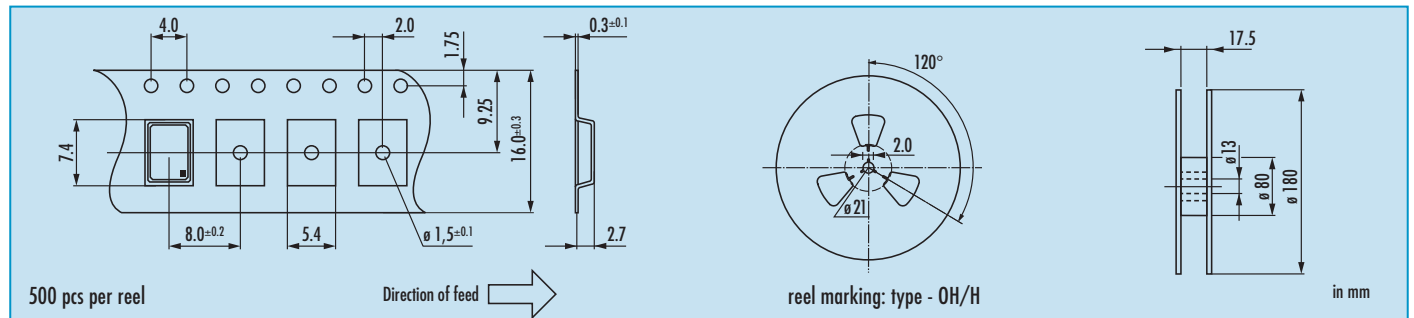
Example: O 20.0-VX3UH (LF = RoHS compliant / Pb free pins or pads)

Packing Note

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

Oscillator · VX3 · 2.5 V · Stop Function

Taping Specification (JIS-C0806)



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	

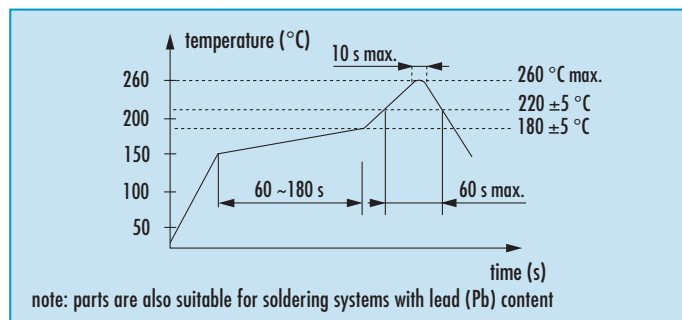
Marking

type / frequency

date code:
 A ~ M: Jan. - Dec.
 0: 2010
 1: 2011
 2: 2012

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





actual size

Oscillator · VX3 · 2.8 V

SMD Oscillator with Stop Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type	VX3 2.8V
frequency range	0.50 ~ 165.0 MHz (15pF max.) 0.50 ~ 100.0 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.: 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.)

Table 1: Type

stability	± 100 ppm		± 50 ppm		± 30 ppm		± 25 ppm		± 20 ppm	
type VX3	P	N	PH	NH	PS	NS	PQ	NQ	PP	NP
output load	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF
-10 °C ~ +70 °C	○	○	○	○	○	○	○	○	△	△
-40 °C ~ +85 °C	○	○	○	○	○	○	○	○		
● standard ○ available △ excludes aging										

● standard ○ available △ excludes aging

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

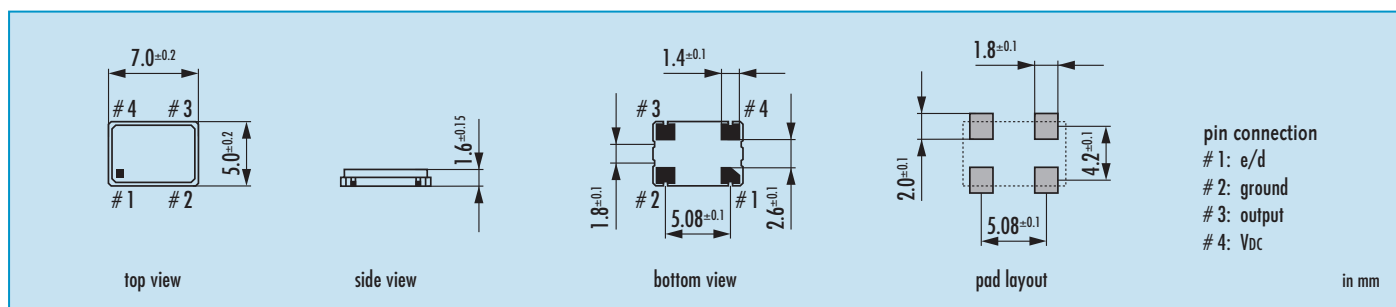
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 33.9 MHz	8 mA	0.5 ~ 19.9 MHz	10 mA
34.0 ~ 49.9 MHz	12 mA	20.0 ~ 49.9 MHz	20 mA
50.0 ~ 79.9 MHz	18 mA	50.0 ~ 79.9 MHz	25 mA
80.0 ~ 99.9 MHz	30 mA	80.0 ~ 100.0 MHz	35 mA
100.0 ~ 124.9 MHz	40 mA		
125.0 ~ 165.0 MHz	60 mA		

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns: 1.8 ~ 79.99 MHz	
5.0 ns: 80.0 ~ 99.99 MHz	
3.0 ns: 100.0 ~ 165.00 MHz	

Dimensions



Order Information

0	frequency	type	option
Oscillator	0.5 ~ 165.0 MHz	VX3P-VX3NP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

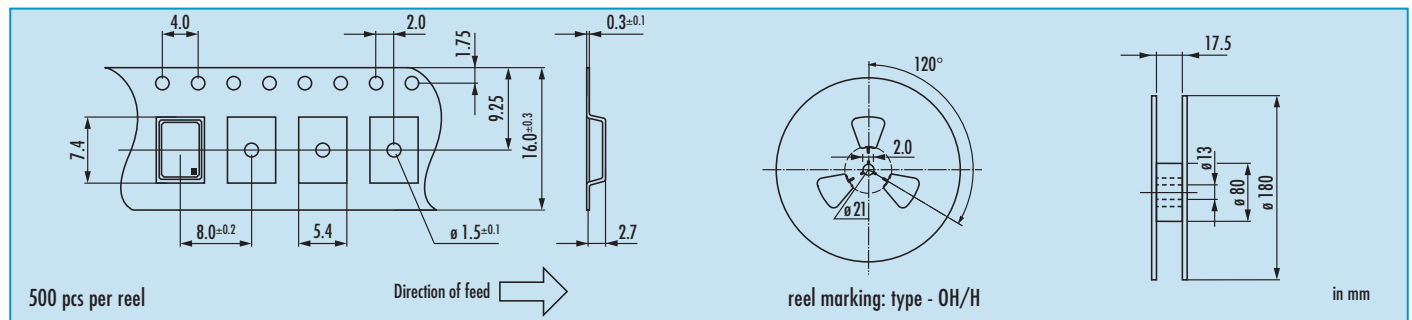
Example: O 20.0-VX3PH (LF = RoHS compliant / Pb free pins or pads)

Packing Note

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

Oscillator · VX3 · 2.8 V · Stop Function

Taping Specification (JIS-C0806)



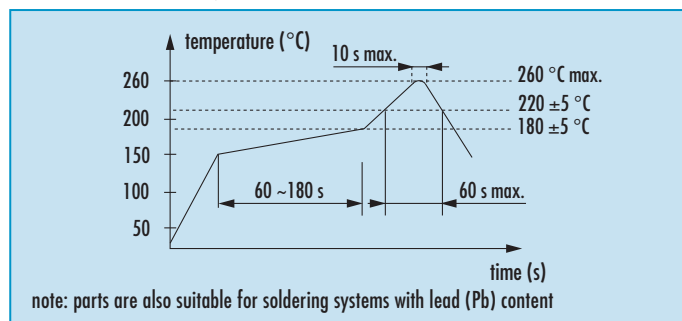
Enable / Disable Function

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

type / frequency						
date code:						
A ~ M: Jan. - Dec.						
0: 2010						
1: 2011						
2: 2012						
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





actual size

Oscillator · VX3 · 3.3 V

SMD Oscillator with Stop Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type		VX3 3.3 V
frequency range	VX3W □	0.50 ~ 100.0 MHz (30pF max.)
	VX3L □	100.0 ~ 165.0 MHz (15pF 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.)

Table 1: Type

stability	± 100 ppm		± 50 ppm		± 30 ppm		± 25 ppm		± 20 ppm	
type VX3	L	W	LH	WH	LS	WS	LQ	WQ	LP	WP
output load	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF
-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.

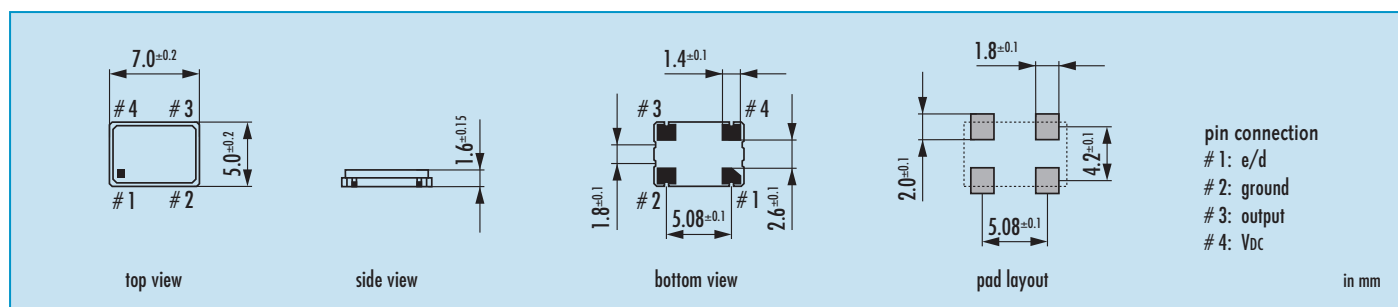
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 19.9 MHz	8 mA	0.5 ~ 19.9 MHz	10 mA
20.0 ~ 49.9 MHz	15 mA	20.0 ~ 49.9 MHz	20 mA
50.0 ~ 79.9 MHz	20 mA	50.0 ~ 79.9 MHz	25 mA
80.0 ~ 99.9 MHz	30 mA	80.0 ~ 100.0 MHz	40 mA
100.0 ~ 124.9 MHz	45 mA		
125.0 ~ 165.0 MHz	60 mA		

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns: 1.8 ~ 79.99 MHz	
5.0 ns: 80.0 ~ 99.99 MHz	
3.0 ns: 100.0 ~ 165.00 MHz	

Dimensions



Order Information

0	frequency	type	option
Oscillator	0.5 ~ 165.0 MHz	VX3L-VX3LP VX3W-VX3WP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

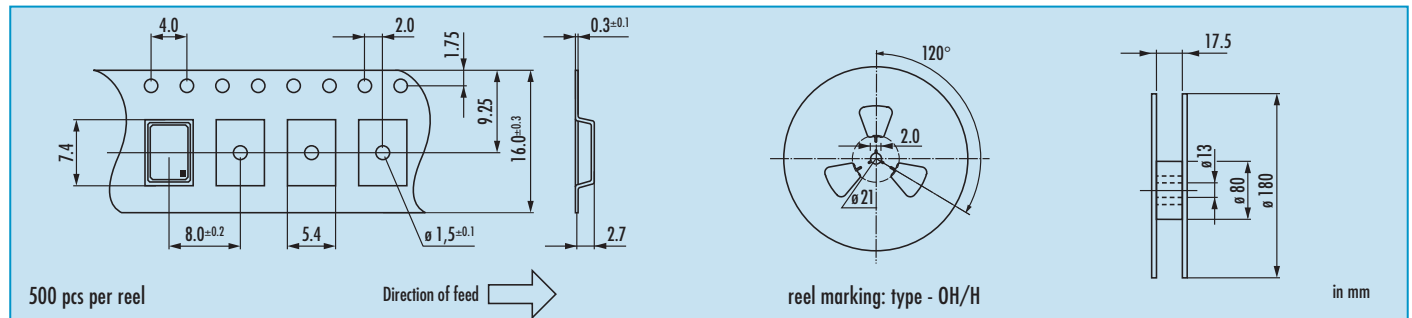
Example: O 100.0-VX3L (LF = RoHS compliant / Pb free pins or pads)

Packing Note

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

Oscillator · VX3 · 3.3 V · Stop Function

Taping Specification (JIS-C0806)



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	

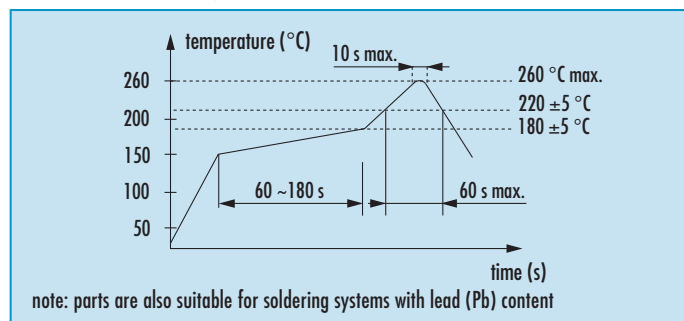
Marking

type / frequency

date code:
 A ~ M: Jan. - Dec.
 0: 2010
 1: 2011
 2: 2012

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





actual size

Oscillator · VX3 · 3.3 V

SMD Oscillator with Tristate Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type	VX3 3.3 V
frequency range	0.50 ~ 70.0 MHz (15pF max.) 0.50 ~ 70.0 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.	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.)

Table 1: Type

stability	± 100 ppm		± 50 ppm		± 30 ppm		± 25 ppm		± 20 ppm	
type VX3	J	M	K	MH	JS	MS	JQ	MQ	JP	MP
output load	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF	15 pF	30 pF
-10 °C ~ +70 °C	○	○	○	●	○	○	○	○	△	△
-40 °C ~ +85 °C	○	○	○	●	○	○	○	○		
● standard ○ available △ excludes aging										

● standard ○ available △ excludes aging

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

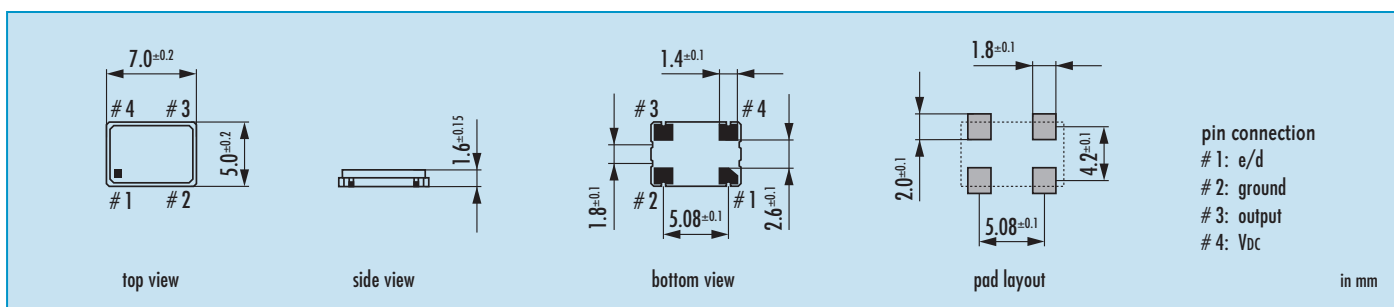
Table 2: Current Consumption max.

Current at 15pF load		Current at 30pF load	
0.5 ~ 33.9 MHz	8 mA	0.5 ~ 33.9 MHz	10 mA
34.0 ~ 49.9 MHz	12 mA	34.0 ~ 49.9 MHz	20 mA
50.0 ~ 70.0 MHz	25 mA	50.0 ~ 70.0 MHz	25 mA

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns: 1.8 ~ 34.99 MHz	
5.0 ns: 35.0 ~ 70.00 MHz	

Dimensions



Order Information

0	frequency	type	option
Oscillator	0.5 ~ 70.0 MHz	VX3J-VX3MP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

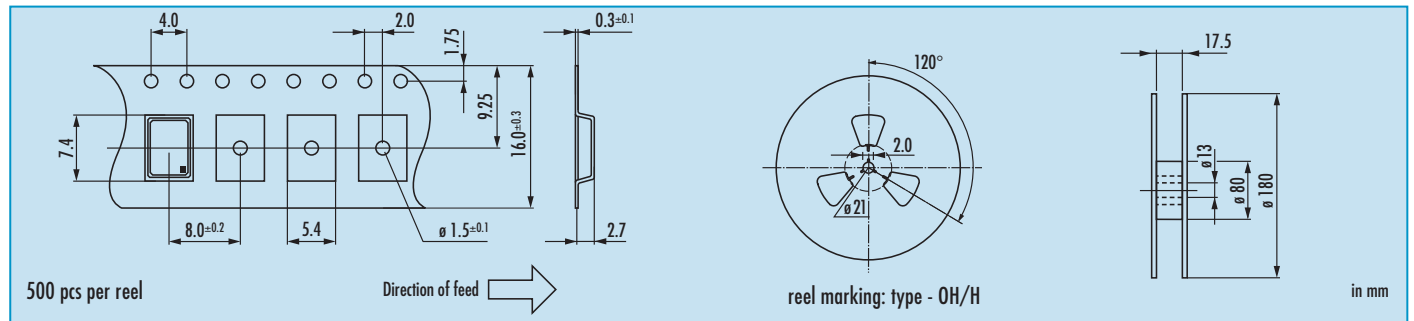
Example: O 20.0-VX3MH (LF = RoHS compliant / Pb free pads)

Preferred Type

VX3MH-T1: ± 50 ppm / 30 pF / -40 °C ~ +85 °C
VX3MH: ± 50 ppm / 30 pF

Oscillator · VX3 · 3.3 V · Tristate Function

Taping Specification (JIS-C0806)



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	

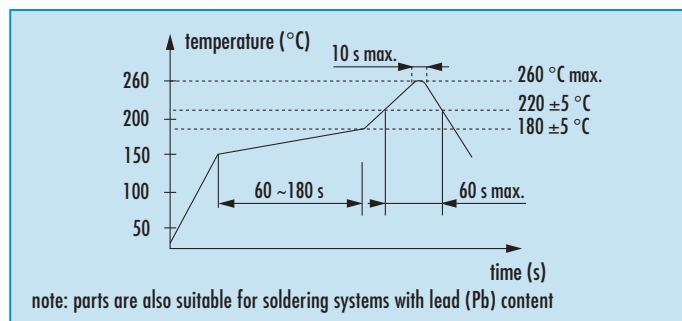
Marking

type / frequency

date code:
 A ~ M: Jan. - Dec.
 0: 2010
 1: 2011
 2: 2012

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 · VX3 · 5.0 V

SMD Oscillator with Tristate Function · 7.0 x 5.0 mm

- preferred type for extended temperature range
- reflow soldering temperature: 260 °C max.
- full ceramic package



General Data

type	VX3 5.0 V
frequency range	0.50 ~ 107.0 MHz (15pF max.) 0.50 ~ 80.0 MHz (50pF max.)
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 / 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.)

Table 1: Type

stability	± 100 ppm		± 50 ppm		± 30 ppm		± 25 ppm		± 20 ppm	
type VX3	E	X	F	Y	FS	YS	EQ	XQ	EP	XP
output load	15 pF	50 pF	15 pF	50 pF	15 pF	50 pF	15 pF	50 pF	15 pF	50 pF
-10 °C ~ +70 °C	●	○	○	○	○	○	○	○	△	△
-40 °C ~ +85 °C	●	○	○	○	○	○	○	○		
● standard ○ available △ excludes aging										

● standard ○ available △ excludes aging

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

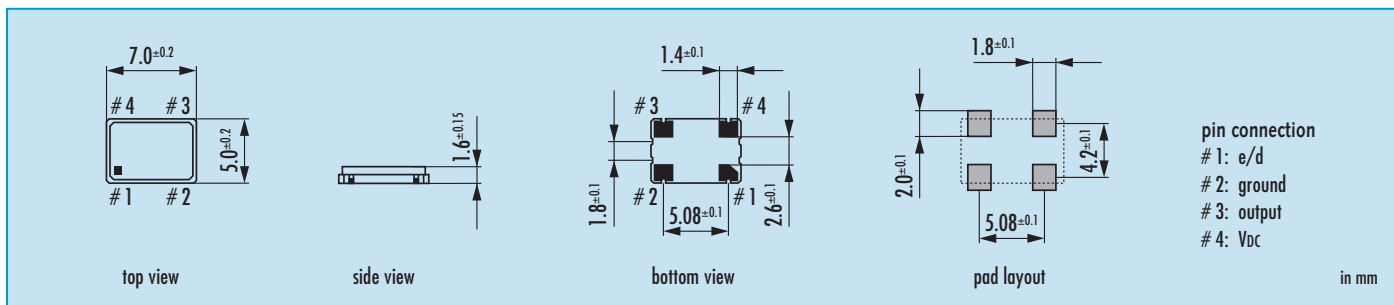
Table 2: Current Consumption max.

Current at 15pF load		Current at 50pF load	
0.5 ~ 29.9 MHz	10 mA	0.5 ~ 19.9 MHz	20 mA
30.0 ~ 34.9 MHz	15 mA	20.0 ~ 49.9 MHz	35 mA
35.0 ~ 65.9 MHz	30 mA	50.0 ~ 80.0 MHz	60 mA
66.0 ~ 79.9 MHz	50 mA		
80.0 ~ 107.0 MHz	60 mA		

Table 3: Rise & Fall Time max.

8.0 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}
6.0 ns: 1.8 ~ 34.99 MHz	
5.0 ns: 35.0 ~ 107.00 MHz	

Dimensions



Order Information

0	frequency	type	option
Oscillator	0.5 ~ 107.0 MHz	VX3E-VX3XP see table 1	blank = -10 °C ~ +70 °C T1 = -40 °C ~ +85 °C

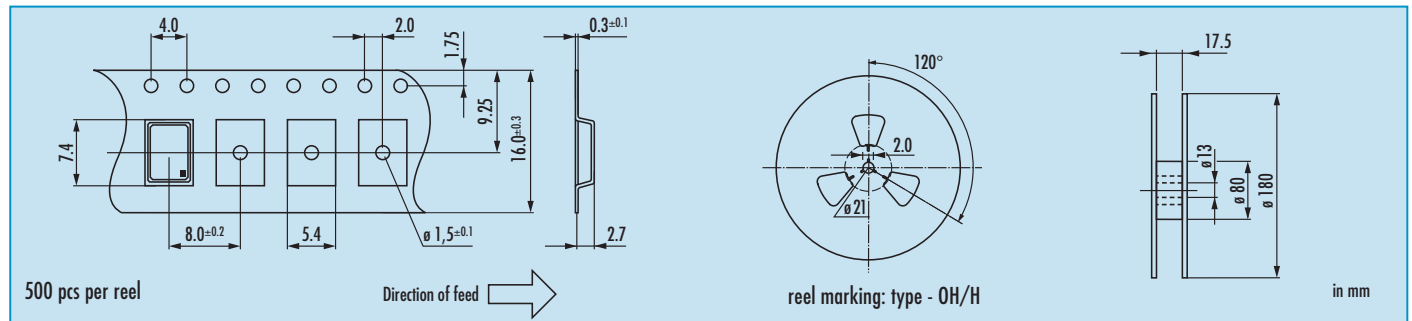
Example: O 20.0-VX3X (LF = RoHS compliant / Pb free pins or pads)

Preferred Type

VX3E-T1: ± 100 ppm / 15 pF / -40 °C ~ +85 °C
VX3E: ± 100 ppm / 15 pF

Oscillator · VX3 · 5.0 V · Tristate Function

Taping Specification (JIS-C0806)



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	

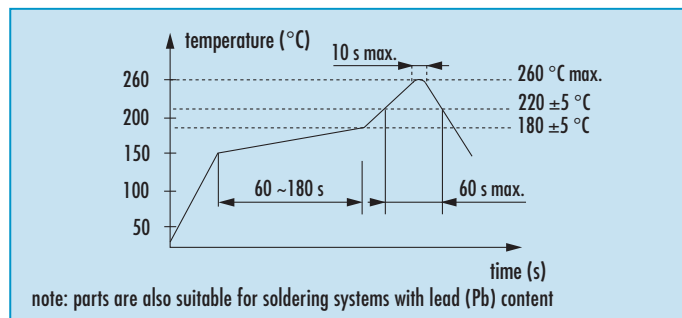
Marking

type / frequency

date code:
 A ~ M: Jan. - Dec.
 0: 2010
 1: 2011
 2: 2012

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