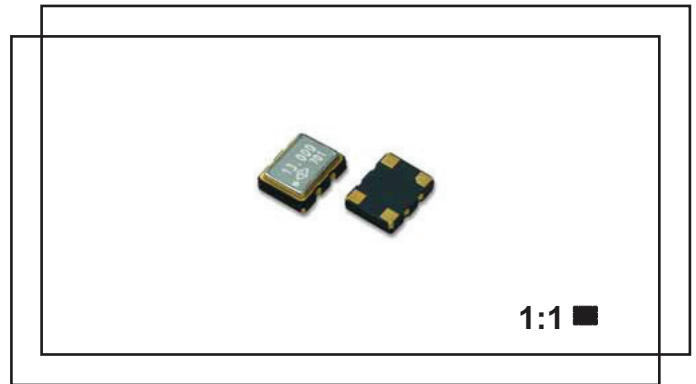


## Type PX smd clock oscillator smd ceramic package (1.00 ~ 200)MHz

- # tight symmetry, low jitter
- # (3.2 x 2.5)mm footprint
- # +(1.8, 2.5, 3.3)Vd.c. supply
- # RoHS compliant



### Electrical specification

Case style X: (3.2 x 2.5)mm, height 1.2mm max.  
 Frequency range (1.00 ~ 133)MHz: 1.8V, (1.00 ~ 166)MHz: 2.5V, (1.00 ~ 200)MHz: 3.3V  
 Stability \*  $\pm(20 \sim 100)$ ppm, temperature range dependent

Supply voltage $V_{DD} \pm 10\%$		+1.8Vd.c.	+2.5Vd.c.	+3.3Vd.c.
Supply current max.	$1\text{MHz} \leq F_0 < 30\text{MHz}$	6mA	8mA	10mA
	$30\text{MHz} \leq F_0 < 75\text{MHz}$	8mA	10mA	15mA
	$75\text{MHz} \leq F_0 < 133\text{MHz}$	12mA	15mA	20mA
	$133\text{MHz} \leq F_0 < 166\text{MHz}$	-	15mA	22mA
	$166\text{MHz} \leq F_0 < 200\text{MHz}$	-	-	25mA

Standby current max.		15 $\mu$ A		
Start time max.		5mSec.		
Absolute clock period jitter (frequency dependent)		(40 ~ 200)pSec		
Rise and fall time max. **	$1\text{MHz} \leq F_0 < 10\text{MHz}$	5nSec	4nSec	3nSec
	$10\text{MHz} \leq F_0$	4nSec	3nSec	2nSec

Operating temperature (-10 +60) $^{\circ}$ C ~ (-40 +85) $^{\circ}$ C  
 Storage temperature (-55 +125) $^{\circ}$ C  
 Output CMOS, 15pF  
 Symmetry (45 ~ 55)%, (40 ~ 60)%  
 Tri-state (input to pin 1) - Output active / High impedance 0.7  $V_{DD}$  min. / 0.3  $V_{DD}$  max.

\* inclusive of calibration tolerance at +25 $^{\circ}$ C, temperature tolerance, supply voltage variation, load variation, first year ageing(10 years for types S and J), shock and vibration.  
 \*\* measured, with an output load of 15pF, between (10 ~ 90)%  $V_{DD}$

### Ordering information

Example .... type PX oscillator, 13.00MHz, +3.3Vd.c., tri-state,  $\pm 25$ ppm(-20 +70) $^{\circ}$ C, CMOS 15pF, (45 ~ 55)%

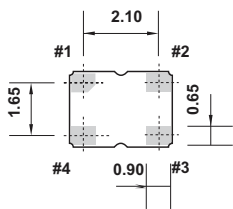
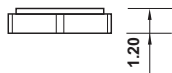
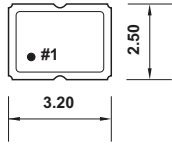
TFC PART NUMBER .... PX 13.00M E T D C J

'PX' .... type number: PX = smd clock oscillator type PX  
 '13.0M' .... frequency: 13.0M = 13.00MHz, frequency range from (1.0 ~ 200)MHz  
 'E' .... supply voltage: E = +3.3Vd.c., J = +2.5Vd.c., K = +1.8Vd.c.  
 'T' .... tri state: T = tri-state with programmed frequency, tri-state function on pin #1  
 'D' .... frequency stability: D =  $\pm 25$ ppm  
 'C' .... temperature range: C = (-20 +70) $^{\circ}$ C  
 'J' .... output logic and symmetry: J = CMOS 15pF, (45 ~ 55)%

Frequency stability .... C:  $\pm 20$ ppm, D:  $\pm 25$ ppm, G:  $\pm 50$ ppm, H:  $\pm 100$ ppm  
 Temperature range .... I: (-10+60) $^{\circ}$ C, C: (-20 +70) $^{\circ}$ C, D: (-30 +80) $^{\circ}$ C, L: (-40 +85) $^{\circ}$ C  
 Output .... J: CMOS 15pF(45 ~ 55)%, F: CMOS 50pF(45 ~ 55)%  
 K: CMOS 15pF(40 ~ 60)%, G: CMOS 50pF(40 ~ 60)%

## Type PX clock oscillator

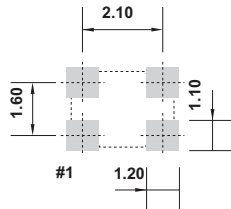
### PX dimensions(mm) shown twice full size



#### Suggested land pattern

Pads are gold, 2.5 min., over nickel, suitable for vapour phase or reflow soldering, preheat +150 C for 90 seconds, peak temperature +260 C for 15 seconds max.

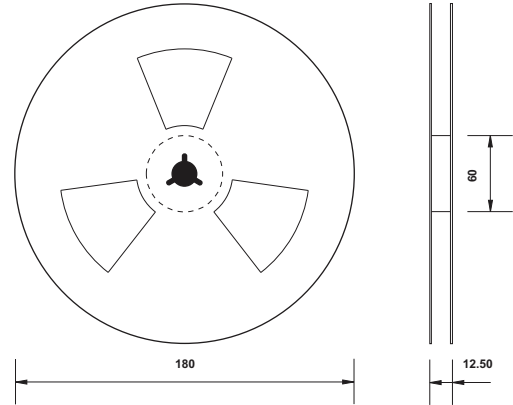
Connect 0.1 F capacitor between  $V_{DD}$  and ground



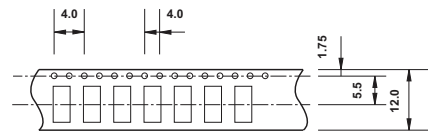
#### Pads viewed from bottom

- #1 tri-state
- #2 ground
- #3 output
- #4  $V_{DD}$

### Tape and reel dimensions(mm)



Centre hole diameter 13.5mm, slot width 2mm spaced at 120  
Reel quantity 1000 pieces, leader tape 400mm minimum  
Trailer tape: 10 empty compartments minimum



Tape transport hole diameter 1.5mm  
Compartment size 3.40mm x 2.70mm, depth 1.40mm  
Component spacing 4.0mm