

A miniature, 32.768kHz, low profile, smd crystal clock oscillator. Tight symmetry, low ageing, combined tolerance from ± 20 ppm. Built in ASIC to reduce current consumption.

A standard package for new designs and volume applications combining small size and tight tolerance over an extended temperature range.

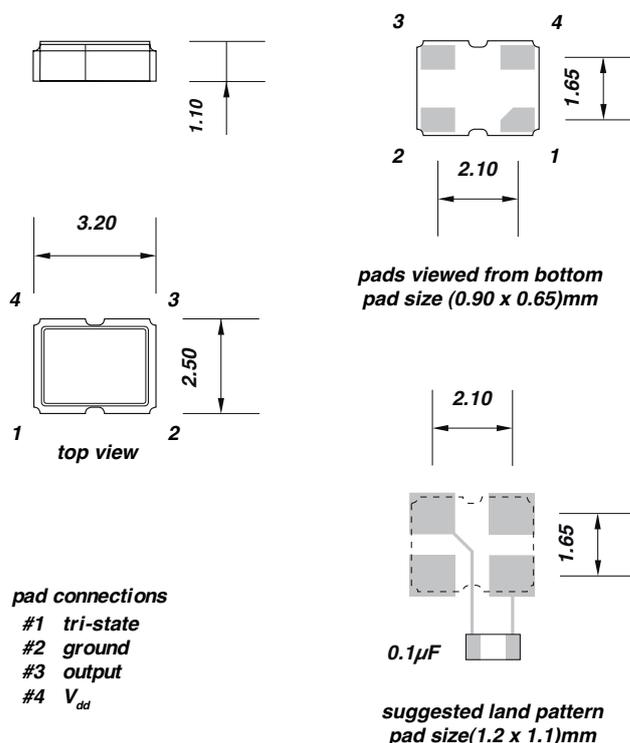
Supplied on tape and reel 3000, pieces per reel.

Frequency stability -vs- temperature:

temp. range	combined tolerance		
$(-10 +60)^{\circ}\text{C}$	$\pm 20\text{ppm}$	$\pm 25\text{ppm}$	$\pm 50\text{ppm}$
$(-20 +70)^{\circ}\text{C}$		$\pm 25\text{ppm}$	$\pm 50\text{ppm}$
$(-40 +85)^{\circ}\text{C}$			$\pm 50\text{ppm}$

Tolerance inclusive of calibration tolerance at $+25^{\circ}\text{C}$, temperature tolerance, load variation and supply voltage variation, first year ageing, vibration and shock

Dimensions(mm)



Electrical specification:

	3.3Vd.c.		2.5Vd.c.		1.8Vd.c.		
	min.	max.	min.	max.	min.	max.	
supply voltage $\pm 10\%$	2.97	3.63	2.25	2.75	1.62	1.98	Vd.c.
frequency	32.768kHz						MHz
supply current	-	65	-	62	-	60	μA
duty cycle	45% ~ 55%						%
CMOS o/p high	$90\% V_{DD}$	-	$90\% V_{DD}$	-	$90\% V_{DD}$	-	V
CMOS o/p low	-	$10\% V_{DD}$	-	$10\% V_{DD}$	-	$10\% V_{DD}$	V
t_r rise and fall time	-	50	-	50	-	50	nano sec.
start up time	-	2	-	2	-	2	milli sec.
tri-state: active o/p	$0.7V_{DD}$	-	$0.7V_{DD}$	-	$0.7V_{DD}$	-	V
tri-state: high impedance o/p	-	$0.3V_{DD}$	-	$0.3V_{DD}$	-	$0.3V_{DD}$	V
ageing first year @ 25°C	-	± 3	-	± 3	-	± 3	ppm
storage temperature range	$(-55 +125)^{\circ}\text{C}$						$^{\circ}\text{C}$

Ordering information

EXAMPLE	<i>type OX clock oscillator, 32.768kHz, ±25ppm(-20 +70)°C, +3.3Vd.c., output CMOS</i>
TFC PART NUMBER	OX 32.768k E D C
OX	<i>type: OX = clock oscillator type OX, smd</i>
32.768k	<i>frequency: 32.768k = frequency in kHz</i>
E	<i>supply voltage: E = +3.3Vd.c.,</i>
D	<i>frequency stability: D = ±25ppm</i>
C	<i>temperature range: C = (-20 +70)°C</i>
OPTIONS	
supply voltage	<i>K = 1.8Vd.c., J = 2.5Vd.c., E: +3.3Vd.c.</i>
frequency stability	<i>C: ±20ppm, : D = ±25ppm, G = ±50ppm</i>
temperature range	<i>I: (-10 +60)°C, C: (-20 +70)°C, L:(-40 +85)°C</i>