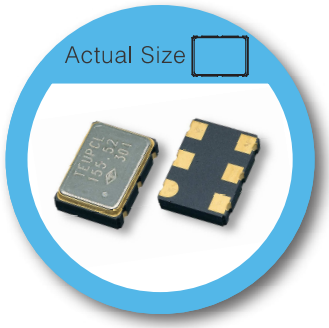
TAITIEN
Our Performance, Your Reputation

VT Type
7.0 x 5.0 mm SMD LVPECL/LVDS Voltage Controlled Crystal Oscillator

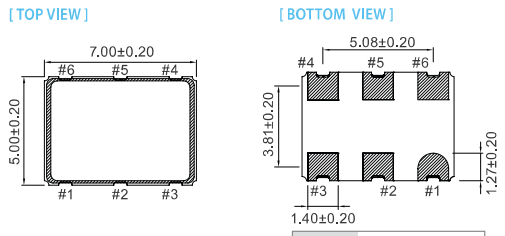


RoHS Compliant

FEATURE
- Typical 7.0 x 5.0 x 1.75 mm 6 pads ceramic SMD package.
- Very low jitter performance: typical 0.3 pS RMS from 12k-20MHz.
- Wide frequency control range.
- Complementary Output.
- Tri-state enable/disable

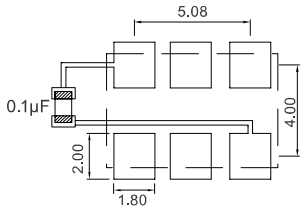
TYPICAL APPLICATION
- Set-top Box, HDTV
- xDSL/ VoIP, Cable modem
- WiMAX/WLAN
- Jitter Attenuator, ADC

DIMENSION (mm)



Pin#	Function
1	Vcon
2	Tri-State
3	GND
4	Output
5	Comp.Output
6	VDD

SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1μF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

Parameter	LVPECL				LVDS				Unit
	3.3 V		2.5V		3.3 V		2.5V		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	VDD-5%	VDD+5%	VDD-5%	VDD+5%	VDD-5%	VDD+5%	VDD-5%	VDD+5%	V
Frequency Range	1.5	200	65	200	1.5	200	65	200	MHz
Standard Frequency	77.76, 106.25, 122.88, 125, 155.52, 156.25, 200								MHz
Absolute Pulling Range (APR)	±50	–	±50	–	±50	–	±50	–	ppm
Control Voltage Range	0.3	3.0	0	2.5	0.3	3.0	0	2.5	V
Supply Current 1.5 MHz ≦ Fo < 65 MHz	–	75	–	75	–	45	–	45	mA
65 MHz ≦ Fo ≦ 200 MHz	–	100	–	100	–	80	–	80	mA
Output Level Output High (Logic"1")	2.275	–	1.475	–	–	1.6	–	1.6	V
Output Low (Logic"0")	–	1.68	–	1.095	0.9	–	0.9	–	V
Transition Time: Rise/Fall Time+	–	1.0	–	1.0	–	1.0	–	1.0	nSec
Start Time	–	3	–	3	–	3	–	3	mSec
Tri-State (input to Pin 2, Enable High)									
Enable (High voltage or floating)	2.31	–	1.75	–	2.31	–	1.75	–	V
Disable (Low voltage or GND)	–	0.99	–	0.75	–	0.99	–	0.75	V
Linearity	–	10	–	10	–	10	–	10	%
Modulation Bandwidth (BW)	15	–	15	–	15	–	15	–	kHz
Input Impedance	10000	–	10000	–	10000	–	10000	–	kΩ
RMS Phase Jitter (Integrated 12kHz~20MHz)									
Fo < 100 MHz	–	1	–	1	–	1	–	1	pSec
100 MHz ≦ Fo < 125 MHz	–	0.7	–	0.7	–	0.7	–	0.7	pSec
125 MHz ≦ Fo < 150 MHz	–	0.5	–	0.5	–	0.5	–	0.5	pSec
150 MHz ≦ Fo	–	0.3	–	0.3	–	0.3	–	0.3	pSec
Phase Noise@153.6 MHz 100 Hz	-85		-85		-85		-85		dBc/Hz
1 kHz	-115		-115		-115		-115		dBc/Hz
10 kHz	-130		-130		-130		-130		dBc/Hz
Aging (@ 25°C 1st year)	–	±3	–	±3	–	±3	–	±3	ppm
Storage Temp. Range	-55	125	-55	125	-55	125	-55	125	°C

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.
+ Transition times are measured between 20% and 80% of VDD.

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C) \ ppm	±25	±50
-10 ~ +60	△	○
-20 ~ +70	△	○
-40 ~ +85	×	○

* ○: Available △:Conditional X: Not available

* Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

Note: not all combination of options are available. Other specifications may be available upon request.

Model Numbering Guide – VCXO

Available options

Type	package (mm)	Supply Voltage(V)	Tri-State Function	Freq.Stability/ APR (ppm)	Temp. Range(°C)	Output Logic and Symmetry	Oscillator Mode	Appearance	Lead Free	Dash	Freq. (MHz)
V: VCXO	W: 5.0x3.2 (6 Pads) T: 7.0x5.0 (6 Pads) K: 14.2x9.3 (6 Pads) L: 14.0x9.0 (4 Pads)	C: 5 (Only for L Package) E: 3.3 J:2.5 K: 1.8 (Only for CMOS and Frequency < 60MHz)	U: Relative Pulling (Refer to Center Voltage) with Tri-State to pin 2 M: Multiplier Frequency with Tri-State to pin 2 S: Enable Low R: Input to pin 5 F: Without Tri-State	M: ±25/±50 (VC=10%Vdd ~90%Vdd) P: ±50/±50 (VC=10%Vdd ~90%Vdd) A: ±50/±50 (VC=0V~Vdd) B: ±25/±50 (VC=0V~Vdd) V: Overall: ±35ppm Pulling: ±35ppm	I: -10~+60 C: -20~+70 L: -40~+85 J:-40~+105	J: CMOS 15pF / 50±5% F: CMOS 50pF / 50±5% L: LVPECL / 50±5% V: LVDS / 50±5% W: Sine Wave	A: AT Fundamental T: AT 3rd Overtone Not selectable by Customer	N: Normal F: Option A G: Option B J: Option C	F: RoHs Compliant	–	XX.XXXXXX

V T E S P C L A N F – 10.000000

*Not all combinations of options are available.

Example: VTESPCLANF-10.000000

Type	VCXO
Package	7.0 x 5.0 mm
Supply Voltage(V)	3.3 V
Tri-State	Enable Low
Freq. Stability / APR	±50ppm / ±50ppm
Temp Range	-20~+70 °C
Output	LVPECL/Symmetry 50±5%
Oscillator Mode	AT Fundamental
Appearance	Normal Appearance
Lead Free	RoHs Compliant
Frequency	10.000000 MHz