



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



- ▶ 3.3 or 5.0V version
- ▶ 3.2 x 5 mm Footprint
- ▶ Low current consumption
- ▶ Pb Free/RoHS Compliant

# ECS-3961/3963

## SMD CLOCK OSCILLATOR

ECS-3961 (5V) and ECS-3963 (3.3V) miniature SMD crystal controlled oscillators. Package is seam welded with a metal lid.

### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-3961 (+5V)			ECS-3963 (+3.3V)			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		1.544		125.000	1.000		125.000	MHz
Operating Temperature	Standard	-10		+70	-10		+70	°C
	Extended (N Option)	-40		+85	-40		+85	°C
Storage Temperature		-55		+125	-55		+125	°C
Supply Voltage		+4.5	+5.0	+5.5	+2.7	+3.3	+3.6	VDC
Frequency Stability *	Option A			± 100			± 100	ppm
	Option B			± 50			± 50	ppm
	Option C			± 25			± 25	ppm
Input Current	1.544 to 9.999 MHz			15			8	mA
	10.0 to 34.999 MHz			20			10	mA
	35.0 to 49.999 MHz			35			25	mA
	50.0 to 125 MHz			40			35	mA
Output Symmetry	@ 50%Vcc level			40/60			40/60	%
	@ 50%Vcc level (T Option)			45/55			45/55	%
Rise and Fall Times	10% Vdd to 90% level			5			5	ns
"0" level	VOL			10% Vdd			10% Vdd	VDC
"1" level	VOH	90% Vdd			90% Vdd			VDC
Output Load	HCMOS			30			15	pF
Startup time				10			10	ms

\* Note: Inclusive of 25°C tolerance, operating temperature, input voltage change, load change, shock and vibration.

### DIMENSIONS (mm)

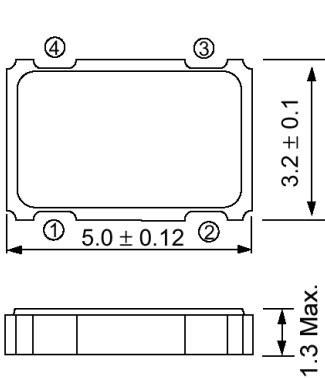


Figure 1) Top, Side and Bottom views

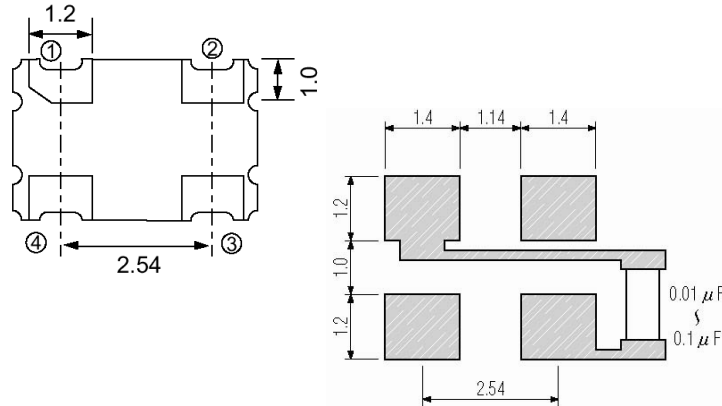


Figure 2) Suggested Land Pattern

Pin Connections	
Pin #1	Tri-State **
Pin #2	Ground
Pin #3	Output
Pin #4	VDD

Tri-State Control Voltage	
Pad 1	Pad 3
Open	Oscillation
70% Vdd Min.	Oscillation
30% Vdd Max.	No Oscillation

\*\* Note: Internal pullup resistor from pin 1 to 4 allows active output if pin 1 is left open.

### PART NUMBERING GUIDE: Example ECS-3963-200-BN-TR

ECS	Series	Frequency Abbreviation	Stability	Temperature	Symmetry	Packaging
	3961 = +5.0V 3963 = +3.3V	200 = 20.000 MHz See Frequency Abbreviations	A = ± 100 ppm B = ± 50 ppm C = ± 25 ppm	Blank = -10 ~ +70°C M = -20 ~ +70°C N = -40 ~ +85°C U = -55 ~ +125°C	Blank = 40/60 T = 45/55	TR = Tape & Reel 1K/Reel