



- 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

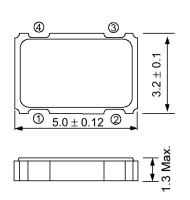
ECS-3961 (5V) and ECS-3963 (3.3V) miniature SMD crystal controlled oscillators. Package is seam welded with a metal lid.

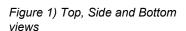
OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

DADAMETERS	CONDITIONS	ECS-3961 (+5V)			ECS-3963 (+3.3V)			LINITO
PARAMETERS		MIN	TYP	MAX	MIN	TYP	MAX	UNITS
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)





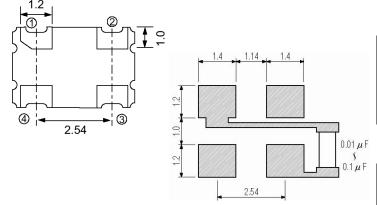


Figure 2) Suggested Land Pattern

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 3961 = +5.0V 3963 = +3.3V **Frequency Abbreviation** 200 = 20.000 MHz See Frequency

Abbreviations

 $A = \pm 100 \text{ ppm}$ $B = \pm 50 ppm$ $C = \pm 25 ppm$

Stability

Temperature Blank = -10 ~ +70°C $M = -20 \sim +70^{\circ}C$ $N = -40 \sim +85^{\circ}C$ U = -55 ~ +125°C

Symmetry **Packaging** TR = Tape & Reel Blank = 40/60T = 45/551K/Reel