ECS-3961/3963

SMD CLOCK OSCILLATOR

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

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)

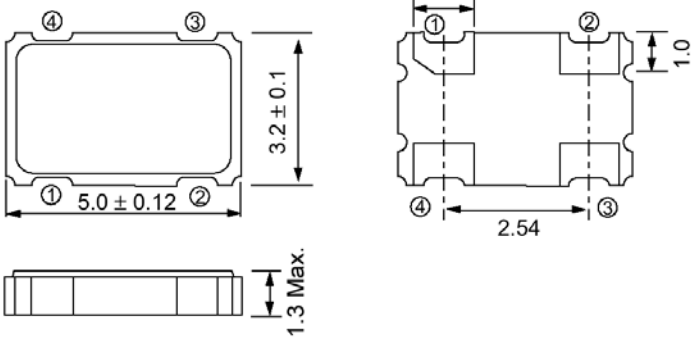

Figure 1) Top, Side and Bottom views

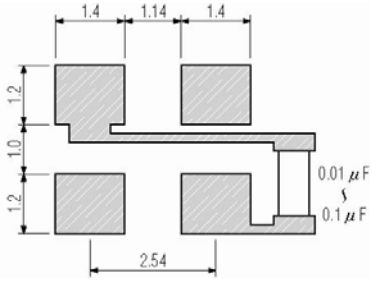

Figure 2) Suggested Land Pattern

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

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

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