



**THE DATASHEET OF
ECS-3963-800-BN-TR**

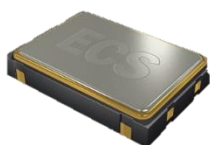


ECS-3961 (5V) and ECS-3963 (3.3V) miniature SMD crystal controlled oscillators. Package is seam welded with a metal lid.

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OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECS-3961/3963



- 3.3 or 5.0V version
- 3.2 x 5 mm Footprint
- Low Current Consumption
- PbFree/RoHS Compliant

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 ~ 9.999 MHz			15			8	mA
	10.0 ~ 34.999 MHz			20			10	mA
	35.0 ~ 49.999 MHz			35			25	mA
	50.0 ~ 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.

Part Numbering Guide: Example ECS-3963-200-BN-TR

ECS - Series - Frequency Abbreviations - Stability Tolerance - Temperature - Symmetry - Packaging

ECS

3961 +5V
3963 +3.3V

200 = 20 MHz

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

Package Dimensions (mm)

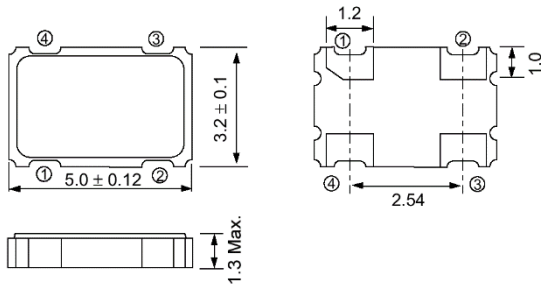


Figure 1) Top, Side, and Bottom views

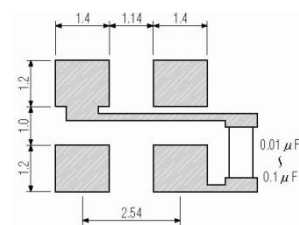
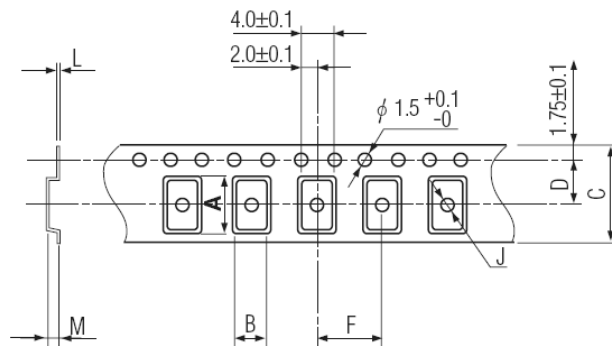


Figure 2) Land Pattern

Pin Connections	
#1	Tri-State**
#2	Ground
#3	Output
#4	V _{DD}

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

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



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.25	3.45	12.0	5.5	8.0	2.0	0.3	1.8	178	1000pcs

Figure 3) Tape Specifications

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