

The ECS-3951M (5V) and ECS 3953M (3.3V) Series are miniature, crystal controlled, low current clock oscillators in a ceramic SMD package. Package is seam welded with a metal lid. The low profile package is ideal for today's advanced portable PC and instrumentation designs.

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### OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS



- 3.3 or 5.0V version
- Low Power Consumption
- Standby function
- Seam welded package
- Tape & Reel (1,000 pcs)
- PbFree/RoHS Compliant

Parameters	Conditions	ECS-3951M (5V)			ECS-3953M (3.3V)*			Units
		MIN	TYP	MAX	MIN	TYP	MAX	
Frequency Range		1.000		125.0	1.000		125.0	MHz
Temperature Range	Operating	-10		+70	-10		+70	°C
	Storage	-55		+125	-55		+125	°C
Supply Voltage		+4.5	+5.0	+5.5	+3.0	+3.3	+3.6	V DC
Frequency Stability**	Standard	-100	±40	+100	-100	±40	+100	PPM
	Option (B)	-50		+50	-50		+50	PPM
	Option (C)	-25		+25	-25		+25	PPM
Input Current	1.0 ~ 36.0 MHz			20			15	mA
	36.1 ~ 70.0 MHz			55			25	mA
	70.1 ~ 100.0 MHz			60			30	mA
	100.1 ~ 125.0 MHz			65			30	mA
Output Symmetry	@ ½ VCC Level	40/60		60/40	40/60		60/40	%
	@ ½ VCC Level (T Option)			45/55			45/55	%
Rise and Fall Times	1.0 ~ 70.0 MHz			15			5	nS
	70.1 ~ 125.0 MHz			5			5	nS
Logic "0" Level	VCC x 0.1V max.							
Logic "1" Level	VCC x 0.9V min.							
Load	HCMOS			30			15	pF
Start-Up Time	1.0 ~ 36.0 MHz			5			5	ms
	36.1 ~ 70.0 MHz			10			10	ms
	70.1 ~ 125.0 MHz			15			15	ms
Output Current (IOL) (IOH)	VOL=0.5V/0.33			4			4	mA
	VOL=4.5V/2.97V			-4			-4	mA
Enable/Disable Time				100			100	ns

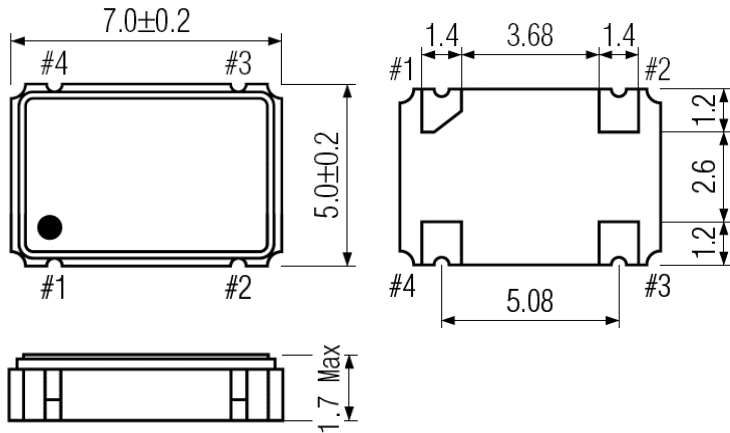
\*ECS-3953M is also compatible with a supply voltage of +3.0V DC ±0.3V  
 \*\*Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging shock and vibration.  
 \*\*\*An internal pullup resistor from pin 1 to 4 allows active output if pin 1 is left open.  
 Note: A 0.01 µF bypass capacitor should be placed between VCC (Pin 4) and GND (Pin2) to minimize power line noise.

### Part Numbering Guide: Example ECS-3951M-500-B-TR

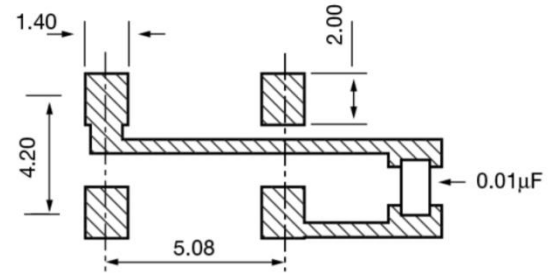
ECS - Series - Frequency Abbreviation - Stability Tolerance - Temperature - Output Symmetry - Packaging

ECS	3951M +5V 3953M +3.3V	500 = 50 MHz	A = ±100 ppm B = ±50 ppm C = ±25 ppm D = ±20 ppm	Blank = -10 ~ 70°C M = -20 ~ +70°C N = -40 ~ +85°C U = -55 ~ +125°C	Blank = 60/40 T = 45/55	TR = Tape & Reel 1K/Reel
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**Package Dimensions (mm)**



**Figure 1) Top, Side, and Bottom views**



**Figure 2) Land Pattern**

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

ECS-3951M/3953M Standby Control Voltage	
Pin #1 = Open***	#3 = Oscillation
Pin #1 = +2.2V Min.	#3 = Oscillation
Pin #1 = 0.8V Max	#3 = High Impedance

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