

The ECS-400X Series clock oscillator offers low current drain and is compatible with HCMOS/TTL logic. The metal package with pin #7 case ground acts as shielding to minimize radiation.

## FEATURES

- HCMOS/TTL logic compatible
- Wide frequency range
- Low power consumption
- Resistance weld package
- 3.3V operation (optional)
- PbFree/RoHS Compliant

## PART NUMBERING GUIDE

PART NUMBER *	FREQUENCY STABILITY
ECS-400AX	±100 PPM
ECS-400BX	±50 PPM
ECS-400CX	±25 PPM

\* Complete part number to include frequency, i.e. ECS-400AX-100 (100 = 10.000MHz)

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	FREQUENCY RANGE	CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
FREQUENCY RANGE ( $f_0$ )	.250 ~ 150.000		.250		150.000	MHz
OPERATING TEMP. RANGE ( $T_{OPR}$ )	.250 ~ 150.000		0		+70	°C
STORAGE TEMP. RANGE ( $T_{STG}$ )	.250 ~ 150.000		-55		+125	°C
FREQUENCY STABILITY	.250 ~ 150.000	All conditions*	-100		+100	PPM
INPUT CURRENT ( $I_{DD}$ )	.250 ~ 20.000				12	mA
	20.000 ~ 25.000				15	mA
	25.000 ~ 150.000				30	mA
OUTPUT SYMMETRY		50% $V_{DD}$ level	40	50 ±3	60	%
RISE TIME ( $T_R$ )	.250 ~ 25.000	10% ~ 90% $V_{DD}$ level			10	nS
	25.000 ~ 150.000	10% ~ 90% $V_{DD}$ level			5	nS
FALL TIME ( $T_F$ )	.250 ~ 25.000	90% ~ 10% $V_{DD}$ level			10	nS
	25.000 ~ 150.000	90% ~ 10% $V_{DD}$ level			5	nS
OUTPUT VOLTAGE ( $V_{OL}$ ) ( $V_{OH}$ )	.250 ~ 150.000	$I_{OL} = 4$ mA			0.5	V
	.250 ~ 150.000	$I_{OH} = -4$ mA	4.5			V
OUTPUT CURRENT ( $I_{OL}$ ) ( $I_{OH}$ )	.250 ~ 150.000	$V_{OL} = 0.5$ V			4	mA
	.250 ~ 150.000	$V_{OH} = 4.5$ V			-4	mA
OUTPUT LOAD	.250 ~ 150.000	TTL			10	TTL
	.250 ~ 150.000	HCMOS			15	pF
START-UP TIME ( $T_S$ )	.250 ~ 25.000				5	mS
	25.000 ~ 150.000				10	mS
SUPPLY VOLTAGE		+5.0 ±0.25				V

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

## PACKAGE DIMENSIONS (mm)

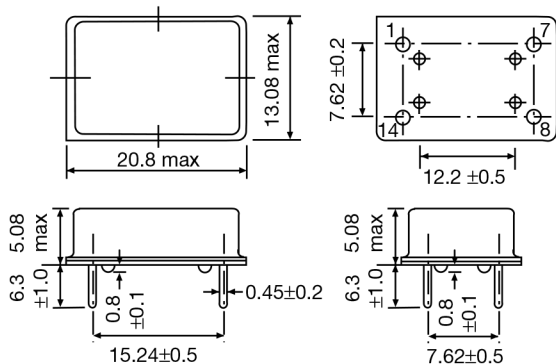


Figure 1) ECS-400X Series – Top, Bottom and Side views

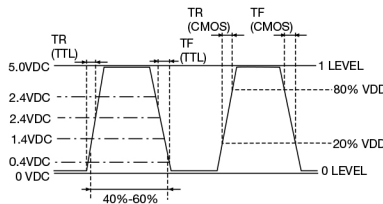


Figure 2) Output Wave Form

PIN CONNECTIONS	
#1	NC
#7	CASE GND
#8	OUTPUT
#14	+5 V DC