



The ECS-2200 Series clock oscillator can drive both HCMOS and TTL logic. This oscillator also features tri-state enable/disable capabilities in an 8 pin DIP package.

## FEATURES

- 50pF HCMOS/TTL logic
- Tri-State enable/disable
- Wide frequency range
- Resistance weld package
- 3.3V operation (optional)

## PART NUMBERING GUIDE

PART NUMBER *	FREQUENCY STABILITY
ECS-2200A	±100 PPM
ECS-2200B	±50 PPM
ECS-2200C	±25 PPM

\* Complete part number to include frequency. i.e. ECS-2200A-100 (100 = 10.000MHz)

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

PARAMETERS	FREQUENCY RANGE	CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
FREQUENCY RANGE ( $f_0$ )	1.000 ~ 150.000		1.000		150.000	MHz
OPERATING TEMP. RANGE ( $T_{OPR}$ )	1.000 ~ 150.000		0		+70	°C
STORAGE TEMP. RANGE ( $T_{STG}$ )	1.000 ~ 150.000		-55		+125	°C
FREQUENCY STABILITY	1.000 ~ 150.000	All conditions*	-100		+100	PPM
INPUT CURRENT ( $I_{DD}$ )	1.000 ~ 25.000			17	25	mA
	25.000 ~ 50.000			33	46	mA
	50.000 ~ 80.000			45	77	mA
	80.000 ~ 150.000			67	82	mA
OUTPUT SYMMETRY	1.000 ~ 80.000	50% $V_{DD}$ level	45	50 ±3	55	%
	80.000 ~ 150.000	50% $V_{DD}$ level	40	50 ±3	60	%
RISE TIME ( $T_R$ )	1.000 ~ 150.000	10% ~ 90% $V_{DD}$ level			5	nS
FALL TIME ( $T_F$ )	1.000 ~ 150.000	90% ~ 10% $V_{DD}$ level			5	nS
OUTPUT VOLTAGE ( $V_{OL}$ ) ( $V_{OH}$ )	1.000 ~ 150.000	$I_{OL} = 16$ mA			0.5	V
	1.000 ~ 150.000	$I_{OH} = -16$ mA	4.5			V
OUTPUT CURRENT ( $I_{OL}$ ) ( $I_{OH}$ )	1.000 ~ 150.000	$V_{OL} = 0.5$ V			16	mA
	1.000 ~ 150.000	$V_{OH} = 4.5$ V			-16	mA
OUTPUT LOAD	1.000 ~ 150.000	TTL			10	TTL
	1.000 ~ 80.000	HCMOS			50	pF
	80.000 ~ 150.000	HCMOS			30	pF
START-UP TIME ( $T_s$ )	1.000 ~ 150.000	0.0V TO 5.0V			10	mS
SUPPLY VOLTAGE ( $V_{DC}$ )		+5.0 ±0.25				V <sub>DC</sub>

\* 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 pin 8 allows active output if pin 1 is left open.

## PACKAGE DIMENSIONS (mm)

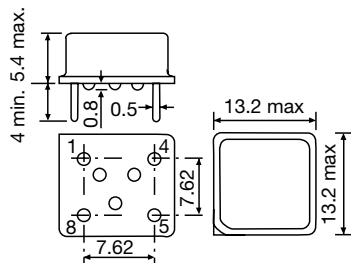


Figure 1) ECS-2200 Series – Side, Bottom and Top views

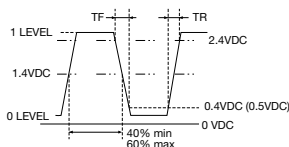


Figure 2) TTL Output Wave Form

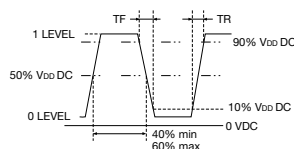


Figure 3) HCMOS Output Wave Form

PIN CONNECTIONS	
#1	TRI-STATE
#4	CASE GROUND
#5	OUTPUT
#8	+5V DC

ENABLE / DISABLE FUNCTION**	
INH (PIN 1)	OUTPUT (PIN 5)
OPEN**	ACTIVE
1 LEVEL $V_{IH} \geq 2.2$ V ( $V_{IH} \geq 2.0$ V ABOVE 70MHz)	ACTIVE
'0' LEVEL $V_{IL} \leq 0.8$ V	HIGH Z