



**THE DATASHEET OF  
ECS-2200BX-200**

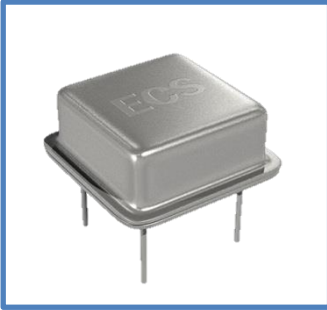


The ECS-2200X Series clock oscillator can drive both HCMOS and TTL logic. This oscillator also features tri-state enable/disable capabilities in an 8 pin DIP package

Request a Sample

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

### ECS-2200X



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

Parameters	Frequency Range	Conditions	MIN	TYP	MAX	Units
Frequency (F <sub>o</sub> )	1.000 ~ 150.000		1.000		150.000	MHz
Operating Temperature Range (T <sub>opr</sub> )	1.000 ~ 150.000		0		+70	°C
Storage Temperature Range (T <sub>stg</sub> )	1.000 ~ 150.000		-55		+125	°C
Frequency Stability	1.000 ~ 150.000	All Conditions*	-100		+100	PPM
Input Current (I <sub>DD</sub> )	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 <sub>DD</sub> level	45	50 ± 3	55	%
	80.000 ~ 150.000	50% V <sub>DD</sub> level	40	50 ± 3	60	%
Rise Time (T <sub>r</sub> )	1.000 ~ 150.000	10% ~ 90% V <sub>DD</sub> level			5	nS
Fall Time (T <sub>f</sub> )	1.000 ~ 150.000	90% ~ 10% V <sub>DD</sub> level			5	nS
Output Voltage (V <sub>OL</sub> ) (V <sub>OH</sub> )	1.000 ~ 150.000	I <sub>OL</sub> = 16 mA			0.5	V
	1.000 ~ 150.000	I <sub>OH</sub> = -16 mA	4.5			V
Output Current (I <sub>OL</sub> ) (I <sub>OH</sub> )	1.000 ~ 150.000	V <sub>OL</sub> = 0.5V			16	mA
	1.000 ~ 150.000	V <sub>OH</sub> = 4.5V			-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 <sub>s</sub> )	1.000 ~ 150.000	0.0V to 5.0V			10	mS
Supply Voltage			+4.75	+5.0	+5.25	V <sub>DC</sub>

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

### Part Numbering Guide: Example ECS-2200AX-100

ECS - Series - Stability - Frequency Abbreviations

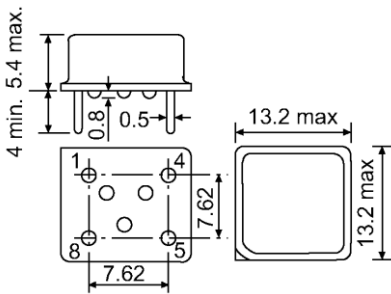
ECS

2200  
+5V HCMOS/TTL  
Half Size w/Tri-  
State

AX = ±100 PPM  
BX = ±50 PPM  
CX = ±25 PPM

100 = 10.000 MHz

**Package Dimensions (mm)**

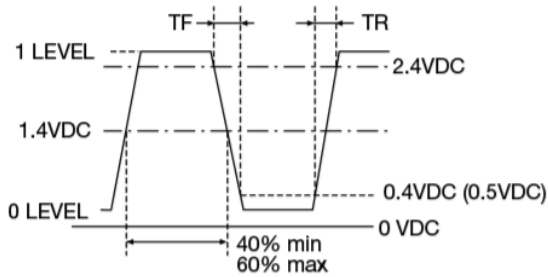


**Figure 1)** Side, Bottom, and Top views

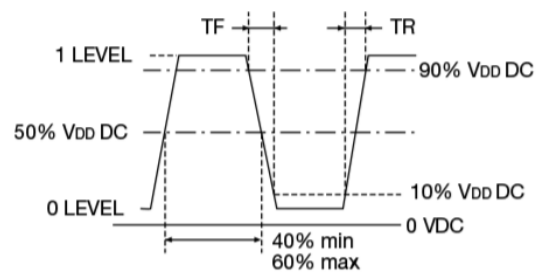
Pin Connections	
#1	TRI-STATE
#4	CASE GROUND
#5	OUTPUT
#8	+5V DC

Enable/ Disable Function**	
$\overline{\text{INH}}$ (Pin 1)	Output (Pin 5)
Open*	Active
1 Level $V_{IH} \geq 2.2V$ ( $V_{IH} \geq 2.0V$ Above 70 MHz)	Active
'O' Level $V_{IL} \leq 0.8V$	High Z

\*\* An internal pullup resistor from pin 1 to pin 8 allows active output if pin 1 is left open.



**Figure 2)** TTL Output Wave Form



**Figure 3)** HCMOS Output Wave Form

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