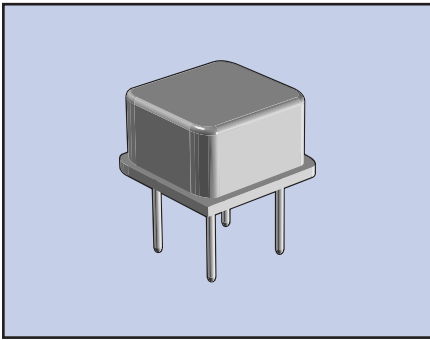


ECS-2200 SERIES 8 PIN DIP CLOCK OSCILLATOR



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	pF
	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 _{DC}

* 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 14 allows active output if pin 1 is left open.

PACKAGE DIMENSIONS (mm)

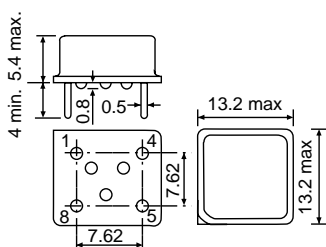


Figure 1) ECS-2200 Series – Side, Bottom and Top views

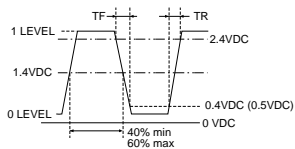


Figure 2) TTL Output Wave Form

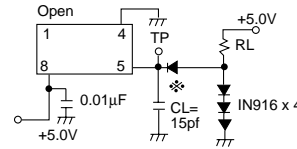


Figure 3) TTL Test Circuit

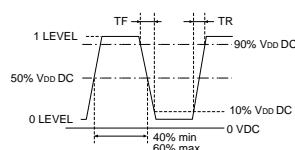


Figure 4) HCMOS Output Wave Form

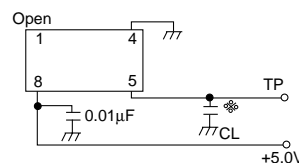


Figure 5) HCMOS Measurement Circuit ($C_L = 15$ pF)

PIN CONNECTIONS		
#1	H or Open	L
#4	Ground	GND/CASE CND
#5	Output	High Impedance
#8	GND	+5VDC

ENABLE / DISABLE FUNCTION**	
INH (PIN 1)	OUTPUT (PIN 8)
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

ESC-2200 STAND-BY-FUNCTION		
#1 (Control Term.)	Open or "H"	"L"
#5 (Output Term.)	Oscillation	"H" Level