

FULL SIZE CLOCK OSCILLATORS TTL/HCMOS COMPATIBLE



• HO-13&16 Series



The HO - 13 series oscillator is Full Size Tri-state Enable/Disable control. HO-16 series is with 3.3V power supply voltage. The metal package with pin #7 case ground acts as shielding to minimize EMI radiation.

FEATURES

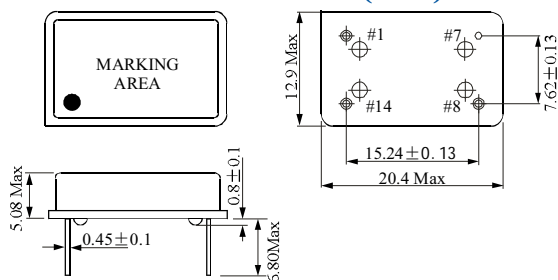
- Tri-State Enable/Disable
- 14 Pin Full Size
- Industry Standard
- Wide Frequency Range
- Low Cost
- Resistance Weld Package
- 3.3V Available

Electrical Specifications

Parameter		Condition	HO-13	HO-16
Frequency Range	F ₀		0.5MHz~150.00MHz	
Frequency Stability*		All Condition*	± 25ppm, ± 50ppm, ± 100ppm	
Operating Temperature Range	T _{OPR}		0°C~70°C (-40°C~+85°C option)	
Storage Temperature Range	T _{STG}		-55°C~+125°C	
Power supply Voltage	V _{DD}		5.0V+/-10%	3.3V+/-10%
Aging(First Year)		25°C ± 3°C	± 5ppm	
Supply Current	I _{DD}	0.5MHz to 23.999MHz	20mA Max	15mA Max
		24.000MHz to 49.999MHz	30mA Max	20mA Max
		50.000MHz to 69.999MHz	40mA Max	30mA Max
		70.000MHz to 150.000MHz	60mA Max	45mA Max
Output Symmetry	Sym	1/2V _{DD}	40/60%(45/55% Option)	
Rise time	T _r	10%V _{DD} ~90%V _{DD}	10 nS Max	8 nS Max
Fall Time	T _f	90%V _{DD} ~10%V _{DD}	10 nS Max	8 nS Max
Output Voltage	V _{OH}		90% V _{DD} min	
	V _{OL}		10% V _{DD} max	
Output load	TTL Load		1~10TTL	1~5TTL
	HCMOS Load		~50M:50pF ~70M:30pF ~150M:15pF	~50M:30pF ~150M:15pF
Start-up Time		T _s	10mS Max	
Pin 1, tri-state function			Pin 1 =H or open....Output active at pin 8 Pin 1 =L....high impedance at pin 8	

*Include: 25°C tolerance, operating temperature range, input voltage change, aging, load change, shock and vibration

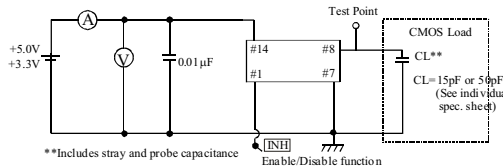
Mechanical Dimensions(mm)



Enable/Disable Function	
Input(Pin1)	Output(Pin8)
Open	Enable
V _{in} ≥ 2.2V _{OC}	Enable

Pin	Connection
#1	Tri-State/NC
#7	GND
#8	Output
#14	V _{DD}

HCMOS Test Circuit



**Includes stray and probe capacitance

Enable/Disable function

HCMOS Output Waveform

