Besides low cost general purpose crystal clock oscillators Mercury also offers high quality and field-proven application-specific oscillators for applications such as

- ♦ CPU, graphics, multimedia A/V clocks
- ♦ MPEG / DVD / HDTV clocks
- ♦ Laser engine pixel / set-top clocks
- ♦ Spread spectrum low EMI clocks
- ♦ OC-3, OC-12, OC-48 and OC-192 clocks
- ♦ Fast Ethernet and Gigabit Ethernet clocks
- ♦ NTSC / PAL encoder/decoder clocks
- ♦ PLL / synthesizer clocks
- ♦ Fibre channel and ADSL clocks
- ♦ SONET / SDH / ATM clocks

Mercury has the right oscillators to meet your specifications and your applications.

"SWO" Series General Specifications

T_A = +25°C, V_{DD} at specified voltage, CL=15 pF

Input Voltage (V_{DD})		V_{DD} = +3.3 V D.C. ±10%	V_{DD} = +5.0 V D.C.±10%
Mercury Model		**3SWO**	**5SWO**
Frequency Range		1.0 ~125.0 MHz	1.0 ~ 125.0 MHz
Output Logic		TTL / HCMOS	TTL / HCMOS
Output Voltage HIGH "1"		2.97 V min.	4.5 V min.
Output Voltage LOW "0"		0.33 V max.	0.5 V max.
Rise Time / Fall Time ($0.1V_{DD}$ ↔ $0.9\ V_{DD}$)		7 n sec. max.	10 n sec. max.
Fanout	**TTL load**	10 LS TTL gates max.	10 LS TTL gates max.
	CMOS load	15 pF	15 pF
Current Consumption		1.8 ~ 32 MHz: 15 mA max. 32+~50 MHz: 16.5 mA max. 50+~100 MHz: 35 mA max.	1.9 ~ 32 MHz: 25 mA max. 32+~50 MHz: 35 mA max. 50+~100 MHz: 40 mA max.
Frequency Stability[1]	**Commercial (0°C to +70°C) Temperature code is 'C"**	±25 ppm over 0°C to +70°C (Stability code is "**A**") ±50 ppm over 0°C to +70°C (Stability code is "**B**") ±100 ppm over 0°C to +70°C (Stability code is "**C**") If non-standard please enter the desired stability after "**C**". For example "C20" represents ±20 ppm over 0 to +70°C	
	Industrial (-40°C to +85°C) Temperature code is 'I"	±25 ppm over -40°C to +85°C (Stability code is "**D**") ±50 ppm over -40°C to +85°C (Stability code is "**E**") ±100 ppm over -40°C to +85°C (Stability code is "**F**") If non-standard please enter the desired stability after "**I**". For example "**I**20" represents ±20 ppm over -40 to +85°C	
Duty Cycle		50%±10%. (50±5% is also available)	
Start-up Time (Ts)		1.0 ~ 32 MHz: 5 m sec. max. 32+ ~ 125 MHz: 10 m sec. max.	
Pad 1 Connection		Note: Pad No. 1 is Tri-State by default for all SWO series. That is: The output (pad No. 3) is active if no connection or voltage of 2.2V or greater is applied to pad 1. The output (pad No. 3) is high impedance when voltage of 0.8V or lower is applied to pad 1. Disable time is 150 n sec. max.; Enable time is 10 m sec. max.	
Aging		±5 ppm per year max.	

[1]Inclusive of 25°C tolerance, operating temperature range, ±10% input voltage variation, load change, aging, shock and vibration.

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Environmental Performance Specifications

RoHS Compliance	Pb (lead) free
Storage temp. range	-50°C to +100°C
Humidity	85% RH, 85°C, 48 hours
Hermetic seal	Leak rate $2x10^{-8}$ ATM-cm^3/sec max.
Solderability	MIL-STD-202F method 208E
Reflow	260°C for 10 sec.
Vibration	MIL-STD-202F method 204, 35G, 50 to 2000 Hz
Shock	MIL-STD-202F method 213B, test condi. E, 1000GG ½ sine wave

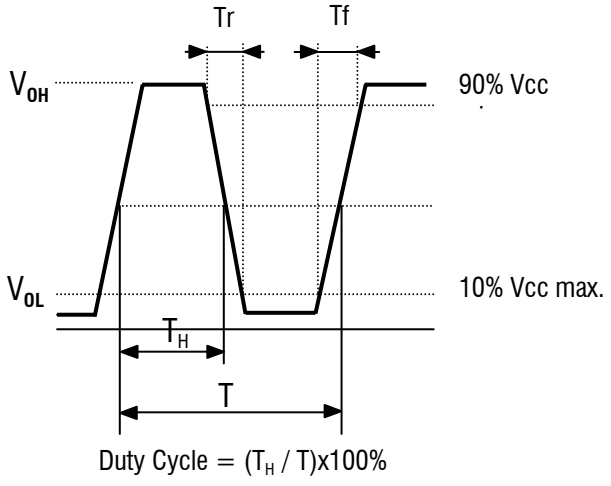
Part Number Format and Example:

Example: 3HSWO-BT-80.000
Explanation: SWO clock oscillator, +3.3 V supply voltage, ±50 ppm frequency stability over 0 to +70°C, 80.000 MHz, Tri-state option on pad 1.

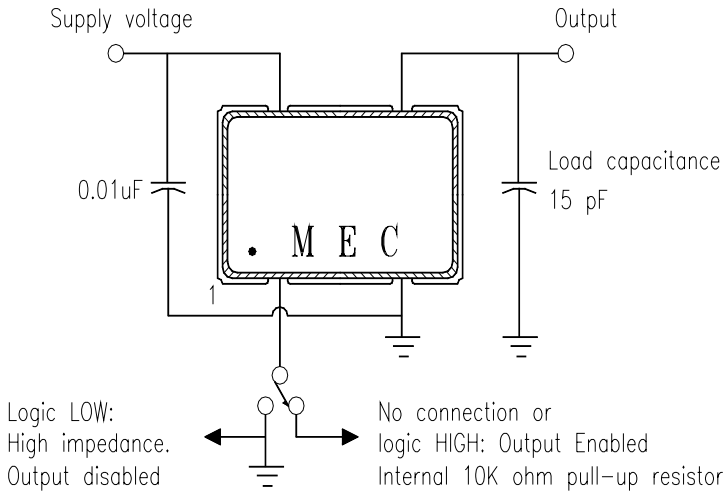
✍			✍	✍		✍		✍	
3	SWO	—	B	T	—	80.000	—	S	
❶	❷		❸	❹		❺		❻	

❶: Voltage codes: "**25**" for +2.5 V; "**3**" for +3.3 V
❷: Product series ❸: Frequency stability code: "**A**" ~ "**F**" or custom. See table above.
❹: "T": Tri-state option on pad 1 (Tri-state is standard if not specified), leave blank if tri-state is not required.
❺ Frequency in MHz ❻ Duty cycle option: Blank for 50%±10%. "S" for 50%±5%.

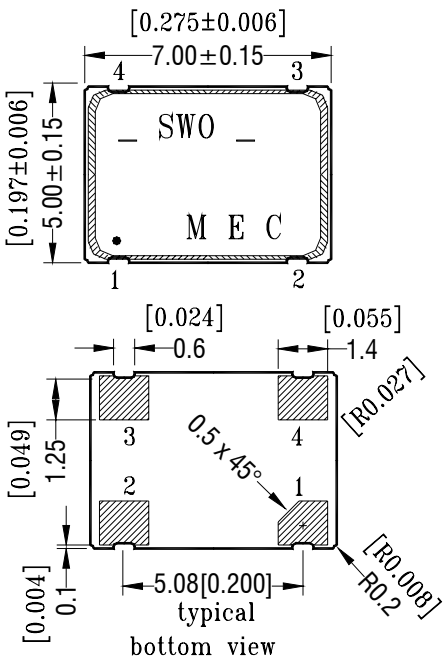
SWO OUTPUT WAVEFORM:



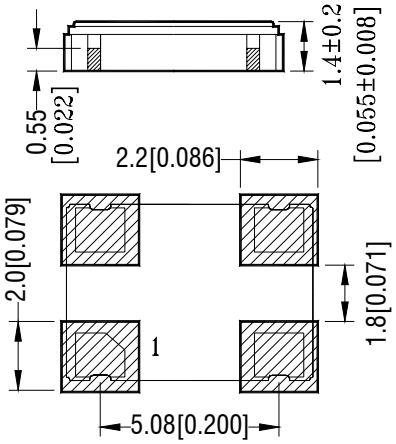
SWO Test Circuit:



SWO Package Dimensions and Recommended Pad Layout: unit mm[inches]



Pad 1	Tri-State or No Connection
Pad 2	Ground
Pad 3	Output
Pad 4	Supply voltage



Chamfered paad is pad No. 1. Count counter-clockwise when looking at top view. Count clockwise when looking at bottom view.

RECOMMENDED REFLOW SOLDERING PROFILE