Applications :

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

RoHS Compliance

General Specifications

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

Model		" **H** " series			
Input Voltage (V_{DD})		V_{DD} = +1.8V D.C.±5% Voltage code is " 18 "	V_{DD} = +2.5V D.C.±5% Voltage code is " 25 "	V_{DD} = +3.3 V D.C.±5% Voltage code is " 3 "	V_{DD} = +5.0V D.C.±10% Voltage code is " 5 "
Frequency Range		1.8 MHz ~ 60.0 MHz	0.3 MHz ~ 125.0 MHz	20.0 KHz ~ 130.0 MHz	20.0 KHz ~ 160.0 MHz
Output Wave Form		CMOS	CMOS	T T L / CMOS	T T L / CMOS
Output Logic High " 1 "	T T L			2.4 V	2.4 V
	CMOS	1.62 V	2.25 V	2.97 V	4.5 V
Output Logic Low " 0 "	T T L			0.4 V	0.4 V
	CMOS	0.18 V	0.25 V	0.33 V	0.5 V

Frequency Stability [1] Codes	Frequency Stability over Operating Temperature Range	± 25 ppm	± 50 ppm	± 100 ppm	If non-standard , please enter the desired stability after the " C " or " I " represents (e.g. "C20" ±20 ppm over 0°C to +70°C ; " I20 " represents ± 20 ppm over -40°C to +85°C)
	Commercial (*-10°C to +70°C*)	*A*	*B*	*C*	
	Industrial (*-40°C to +85°C*)	*D*	*E*	*F*	

Output Load	T T L	2 ~ 10 (LS) T T L gates
	CMOS	15 pF typical; 30 pF load for frequencies up to 70 MHz; 50 pF load available as an option.
Rise Time (Tr) Fall Time (Tf)	T T L	10 n sec.(max.) ; 3 n sec.(typical) . Measured between 0.4V_{DC} ↔ 2.4V_{DC} (RL=390Ω ; CL = 15pF)
	CMOS	10 n sec.(max.) ; 3 n sec.(typical) . Measured between 10% to 90% wave form (CL=15pF)
Duty Cycle	T T L	40% (min.) , 60%(max.) Measured at +1.4V
	CMOS	40% (min.) , 60%(max.) Measured at 50% of wave form [50% ± 5% is also available , add " S " for suffix .
Start -Up Time (Ts)		10 m sec. (max.) ; 5 m sec. (typical)
Current Consumption		10 ~ 45 mA (frequency dependent)
Storage Temperature		- 50°C to 100°C
Aging		±5 ppm per year (max.)
Tri-State Option.		Output is high impedance when " 0 " is applied to pin 1 . Disable time is 150 n sec. max. Add " T " in part number for Tri-State option

Clock Oscillators (HCMOS / Square Wave ; Ceramic SMD ; Under 125 MHz)

" SWO " series ; " H53 " series and " H32 " series

Mercury
Since 1973

RoHS Compliance

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- NTSC / PAL encoder / decoder clocks
- PLL / synthesizer clocks
- Fibre channel and ADSL clocks

General Specifications

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

Model	" **SWO** " ; " **H53** " and " **H32** " series			
	Overall Frequency Range	Supply Voltage Choices	Output Logic	Package Dimensions
" **SWO** " series	0.3125 ~ 125 MHz	1.8 V; 2.5 V; 3.3 V or 5.0 V	CMOS	5.0 x 7.0 x 1.4 mm
" **H53** " series	1.0 ~ 125 MHz	1.8 V; 2.5 V; 3.3 V or 5.0 V	CMOS	3.2 x 5.0 x 1.2 mm
" **H32** " series	1.0 ~ 54 MHz	1.8 V; 2.5 V; 3.3 V or 5.0 V	CMOS	2.5 x 3.2 x 1.0 mm
Supply Voltage (V_{DD})	V_{DD} = **+1.8V** D.C.±5% Voltage code is " 18 "	V_{DD} = **+2.5V** D.C.±5% Voltage code is " 25 "	V_{DD} = **+3.3 V** D.C.±5% Voltage code is " 3 "	V_{DD} = **+5.0V** D.C.±10% Voltage code is " 5 "
Available Frequency Range by V_{DD}	1.0 ~ 160.0MHz	0.3 ~ 160.0 MHz	0.3 ~ 160.0 MHz	0.5 ~ 125.0 MHz
Output Logic High "1" (90% of V_{DD} min.)	1.62 V min.	2.25 V min.	2.97 V min.	4.5 V min.
Output Logic Low "0" (10% of V_{DD} max.)	0.18 V max.	0.25 V max.	0.33 V max.	0.5 V max.
Current Consumption	1.0 ~ 1.5MHz : 5 mA max.	0.3 ~ 1.5MHz : 5 mA max.	0.3 ~ 1.5MHz : 5 mA max.	0.3 ~ 1.5MHz : 5 mA max.
	1.5 ~ 20MHz : 8 mA max.	1.5 ~ 20MHz : 8 mA max.	1.5 ~ 20MHz : 8 mA max.	1.5 ~ 20MHz : 10 mA max.
	20 ~ 50MHz : 15 mA max.	20 ~ 50MHz : 15 mA max.	20 ~ 50MHz : 15 mA max.	20 ~ 50MHz : 25 mA max.
	50 ~ 60MHz : 22 mA max.	50 ~ 125MHz : 25 mA max.	50 ~ 125MHz : 35 mA max.	50 ~ 125MHz : 40 mA max.
Frequency Stability [1] Codes	Frequency Stability over Operating Temperature Range	± 25 ppm	± 50 ppm	± 100 ppm
	Commercial (*-10°C to +70°C*)	*A*	*B*	*C*
	Industrial (*-40°C to +85°C*)	*D*	*E*	*F*
	If non-standard , please enter the desired stability after the " C " or " I " represents (e.g. "C20" ±20 ppm over 0°C to +70°C ; " I20 " represents ± 20 ppm over -40°C to +85°C)			
Load	15 pF max. ; (30 pF and 50 pF load are also available for +3.3V and +5.0V V_{DD})			
Duty Cycle (at 50% of wave form)	Standard: 50% ± 10%; Option: 50% ± 5%. Please add "**-S**" at the end of the part number for ± 5% .			
Start -up Time (Ts)	1.0 ~ 32.0 MHz : 5 m sec. (max.) ; 32.0 ~ 125.0 MHz : 10 m sec. (max.)			
Rise Time (Tr) / Fall Time (Tf)	5 n sec. (max.)	7 n sec. (max.)	10 n sec. (max.)	10 n sec. (max.)
	Measured between 10% ↔ 90% of wave form (CL = 15pF)			
Storage Temperature	- 50°C to 100°C			
Aging	± 5 ppm per year (max.)			
Tri-state Function on pad No. 1 [For SWO , H53 , H32 is standard series]	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 The output (pad No. 3) is high impedance when voltage of 0.8V or Disable time is 150 n sec. max.; Enable time is 10 m sec. max.			

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