

H22

H32

H53

SWO

SMD

TTL / CMOS

1.8V

2.5V

3.3V

5.0V

Min.

312.5KHz

Max.

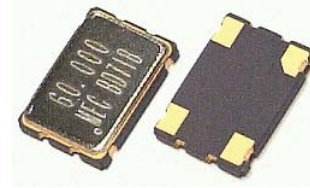
160MHz

## 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 [ TA = +25°C , V<sub>DD</sub> = at specified voltage , Load : 15 pF ]

Model	" H22 " ; " H32 " ; " H53 " and " SWO " series				
	Overall Frequency Range	Supply Voltage Choices	Output Logic	Package Dimensions	
" SWO " series	0.3125 ~ 125.0 MHz	1.8V ; 2.5V ; 3.3V or 5.0V	T T L / CMOS	5.0 x 7.0 x 1.4 mm	
" H53 " series	1.0 ~ 125.0 MHz	1.8V ; 2.5V ; 3.3V or 5.0V	T T L / CMOS	3.2 x 5.0 x 1.2 mm	
" H32 " series	0.5 ~ 50.0 MHz	1.8V ; 2.5V ; 3.3V or 5.0V	T T L / CMOS	2.5 x 3.2 x 1.0 mm	
" H22 " series	0.5 ~ 50.0 MHz	1.8V ; 2.5V ; 3.3V	T T L / CMOS	2.0 x 2.5 x 0.95 mm	
Supply Voltage ( V <sub>DD</sub> )	+ 1.8V D.C.±5%	+ 2.5V D.C.±5%	+ 3.3 V D.C.±5%	+ 5.0V D.C.±10%	
	code is " 18 "	code is " 25 "	code is " 3 "	code is " 5 "	
Available Frequency Range by V <sub>DD</sub>	1.0 ~ 160.0 MHz	0.3 ~ 160.0 MHz	0.3 ~ 160.0 MHz	0.5 ~ 125.0 MHz	
High "1" (90% of V <sub>DD</sub> min.)	1.62 V min.	2.25 V min.	2.97 V min.	4.5 V min.	
Logic Low "0" (10% of V <sub>DD</sub> max.)	0.18 V max.	0.25 V max.	0.33 V max.	0.5 V max.	
Current Consumption	[ 1.0 ~ 1.5 MHz ] 5 mA max.	[ 0.3 ~ 1.5 MHz ] 5 mA max.	[ 0.3 ~ 1.5 MHz ] 5 mA max.	[ 0.3 ~ 1.5 MHz ] 5 mA max.	
	[ 1.5 ~ 20 MHz ] 8 mA max.	[ 1.5 ~ 20 MHz ] 8 mA max.	[ 1.5 ~ 20 MHz ] 8 mA max.	[ 1.5 ~ 20 MHz ] 10 mA max.	
	[ 20.0 ~ 50.0 MHz ] 15 mA max.	[ 20.0 ~ 50.0 MHz ] 15 mA max.	[ 20.0 ~ 50.0 MHz ] 15 mA max.	[ 20.0 ~ 50.0 MHz ] 15 mA max.	
	[ 50.1 ~ 125.0 MHz ] 22 mA max.	[ 50.1 ~ 125.0 MHz ] 25 mA max.	[ 50.1 ~ 125.0 MHz ] 35 mA max.	[ 50.1 ~ 125.0 MHz ] 40 mA max.	
Tri-state Function	Pad No. 1	Tri - state	Tri - state	Tri - state	Tri - state
	on pad No. 1	Package	H22 ,H32 ,H53 ,SWO	H22 ,H32 ,H53 ,SWO	H22 ,H32 ,H53 ,SWO
Rise Time ( Tr ) / Fall Time ( Tf )		7 n sec. ( max. )	7 n sec. ( max. )	10 n sec. ( max. )	10 n sec. ( max. )
		Measured between 10% ↔ 90% of wave form ( CL = 15pF )			
Frequency Stability <sup>(1)</sup> 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 " For example : " C20 " ±20 ppm over -10°C to +70°C ; " I20 " ± 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	
Load	15 pF ; ( 30 pF and 50 pF load are also available for +3.3V and +5.0V V <sub>DD</sub> )				
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. )				
Storage Temperature	- 50°C to 100°C				
Aging	± 5 ppm per year ( max. )				

Note : <sup>(1)</sup> Inclusive of 25°C tolerance , operating temperature range , ±10% input voltage variation , load change , aging , shock and vibration.

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