

H22

H32

H53

SWO

SMD

TTL / CMOS

1.0V

1.2V

1.8V

2.5V

3.3V

5.0V

Min.

312.5KHz

Max.

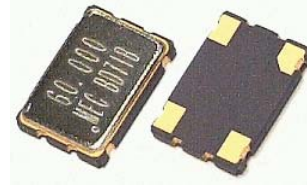
125MHz

## 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  | 1.0V ; 1.2V ; 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   | 1.0V ; 1.2V ; 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  | 1.0V ; 1.2V ; 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  | 1.0V ; 1.2V or 1.8V                      |   | T T L / CMOS  | 2.0 x 2.5 x 0.95 mm   |   |
| Supply Voltage ( V <sub>DD</sub> )                    |           | <b>+1.0V D.C.±5%</b><br>code is " 1 "   | <b>+ 1.2V D.C.±5%</b><br>code is " 12 "  | <b>+ 1.8V D.C.±5%</b><br>code is " 18 "                                 | <b>+ 2.5V D.C.±5%</b><br>code is " 25 "                                 | <b>+ 3.3 V D.C.±5%</b><br>code is " 3 "                                 | <b>+ 5.0V D.C.±10%</b><br>code is " 5 "   |
| Available Frequency Range by V <sub>DD</sub>          |           | 0.5 ~ 40.0 MHz  | 0.5 ~ 50.0 MHz                           | 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.)                |           | 0.9 V min.  | 0.9 V 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.)           |           | 0.1 V max.  | 0.1 V max.                               | 0.18 V max.   | 0.25 V max.   | 0.33 V max.   | 0.5 V max.  |
| Current Consumption                                   |           | [ 0.5 ~ 32 MHz ]<br>2.0 mA max.   | [ 0.5 ~ 32 MHz ]<br>2.5 mA max.          | [ 1.0 ~ 1.5 MHz ]<br>5 mA max.<br>[ 1.5 ~ 20 MHz ]<br>8 mA max.         | [ 0.3 ~ 1.5 MHz ]<br>5 mA max.<br>[ 1.5 ~ 20 MHz ]<br>8 mA max.         | [ 0.3 ~ 1.5 MHz ]<br>5 mA max.<br>[ 1.5 ~ 20 MHz ]<br>8 mA max.         | [ 0.3 ~ 1.5 MHz ]<br>5 mA max.<br>[ 1.5 ~ 20 MHz ]<br>10 mA max.  |
|   |           | [ 32.1 ~ 40 MHz ]<br>3.0 mA max.  | [ 32.1 ~ 50 MHz ]<br>3.5 mA max.         | [ 20.0 ~ 50.0 MHz ]<br>15 mA max.<br>[ 50.1 ~ 125.0 MHz ]<br>22 mA max. | [ 20.0 ~ 50.0 MHz ]<br>15 mA max.<br>[ 50.1 ~ 125.0 MHz ]<br>25 mA max. | [ 20.0 ~ 50.0 MHz ]<br>15 mA max.<br>[ 50.1 ~ 125.0 MHz ]<br>35 mA max. | [ 20.0 ~ 50.0 MHz ]<br>15 mA max.<br>[ 50.1 ~ 125.0 MHz ]<br>40 mA max.   |
| Tri-state Function<br>on pad No. 1                    | Pad No. 1 | Not Available   | Tri - state                              | Not Available   | Tri - state   | Tri - state   | Tri - state   |
|   | Package   | H22,H32   | H53,SWO                                  | H22,H32   | H53,SWO   | H22 ,H32 ,H53 ,SWO  | H22 ,H32 ,H53 ,SWO  |
| Rise Time ( Tr ) / Fall Time ( Tf )                   |           | 6 n sec. ( max. )   | 6 n sec. ( max. )                        | 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 " .<br>For example :<br>" C20 " ±20 ppm over -10°C to +70°C ;<br>" 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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