

H22

H32

H53

SWO

SMD

TTL / CMOS

1.0V

1.2V

1.8V

2.5V

3.3V

5.0V

Min.

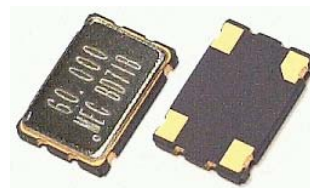
312.5KHz

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

General Specifications [TA = +25°C , V_{DD} = 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		2.0 ~ 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		2.0 ~ 50.0 MHz		2.5V ; 3.3V		T T L / CMOS		2.0 x 2.5 x 0.95 mm					
Supply Voltage (V _{DD})		+1.0V D.C.±5%		+ 1.2V D.C.±5%		+ 1.8V D.C.±5%		+ 2.5V D.C.±5%		+ 3.3 V D.C.±5%		+ 5.0V D.C.±10%	
		code is " 1 "		code is " 12 "		code is " 18 "		code is " 25 "		code is " 3 "		code is " 5 "	
Available Frequency Range by V _{DD}		0.5 ~ 50.0 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 _{DD} 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 _{DD} 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] 2.5 mA max.		[0.5 ~ 32 MHz] 2.5 mA max.		[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.	
		[32.1 ~ 50 MHz] 3.5 mA max.		[32.1 ~ 50 MHz] 3.5 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 on pad No. 1	pad No. 1	No Connection	Tri - state	No Connection	Tri - state	Tri - state		Tri - state		Tri - state		Tri - state	
	Package	H22,H32	H53,SWO	H22,H32	H53,SWO	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 ⁽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 "	
		Commercial (-10°C to +70°C)				A		B		C		For example : " C20 " ±20 ppm over -10°C to +70°C ;	
		Industrial (-40°C to +85°C)				D		E		F		" I20 " ± 20 ppm over -40°C to +85°C	
Load		15 pF ; (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.)											
Storage Temperature		- 50°C to 100°C											
Aging		± 5 ppm per year (max.)											

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

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Clock Oscillators [T T L / CMOS]

Outline Dimensions (Unit : mm) , Suggested pad Layout for SMDs

[Please refer to page 3 for product series selections .]

[H22] Pad Connections : Pad 1 : No Connection [1.0V , 1.2V] Tri - state [1.8V , 2.5V , 3.3V , 5.0V] Pad 2 : Ground Pad 3 : Output Pad 4 : Supply Voltage	[H32] Pad Connections : Pad 1 : No Connection [1.0V , 1.2V] Tri - state [1.8V , 2.5V , 3.3V , 5.0V] Pad 2 : Ground Pad 3 : Output Pad 4 : Supply Voltage						
[H_53] Pad Connections : Pad 1 : Enable / Disable Pad 2 : Ground Pad 3 : Output Pad 4 : Supply Voltage	[SWO] , [H_57] Pad Connections : Pad 1 : Enable / Disable Pad 2 : Ground Pad 3 : Output Pad 4 : Supply Voltage						
[H42 , HF42 , HW42 , HV42] , [H44 , HF44 , HW44 , HV44] Pad Connections : Pad 1 : No connection Pad 2 : Ground Pad 3 : Output Pad 4 : Supply voltage <table border="1"> <thead> <tr> <th>MEC P/N</th> <th>H (height)</th> </tr> </thead> <tbody> <tr> <td>H42</td> <td>2.5 ± 0.2</td> </tr> <tr> <td>H44</td> <td>4.7 ± 0.2</td> </tr> </tbody> </table>	MEC P/N	H (height)	H42	2.5 ± 0.2	H44	4.7 ± 0.2	[HF5761 , HW5761 , HV5761] , [HF5762 , HW5762 , HV5762] Pad Connections : pad 1 : Tri - state (H_5761) or No connection pad 2 : Tri - state (H_5762) or No connection pad 3 : Ground pad 4 : Output pad 5 : No connection pad 6 : Supply Voltage
MEC P/N	H (height)						
H42	2.5 ± 0.2						
H44	4.7 ± 0.2						
[H14 , HF14 , HW14 , HV14] Pin Connections : Pin 1 : (1) No connection (2) Output disabled when low Pin 7 : Ground Pin 8 : Output Pin 14 : Supply voltage	[H8 , HF8 , HW8 , HV8] Pin Connections : Pin 1 : (1) No connection (2) Output disabled when low Pin 4 : Ground Pin 5 : Output Pin 8 : Supply voltage						

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