

Crystal Oscillators [Programmable Quick Turn]



HTF _ _

SMD

CMOS

1.8 V

2.5 V

3.3 V

Min.

1.0 MHz

Max.

200 MHz

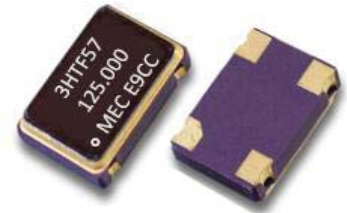
Features

Short lead time. From 1 day to 1 week

Low jitter , RMS jitter is 0.9 ps typical

Custom frequencies can easily be configured

1.8V, 2.5V or 3.3V supply voltages.



General specifications of all available packages , at Ta=+25°C , CL=15pF

Oscillators

Model [Output Logic]		" HTF " series [CMOS]										
Type		HTF21		HTF22		HTF32		HTF53		HTF57		
Dimensions		2.0 * 1.6 * 0.8 mm		2.5 * 2.0 * 0.9 mm		3.2 * 2.5 * 1.1 mm		5.0 * 3.2 * 1.2 mm		7.0 * 5.0 * 1.3 mm		
Supply Voltage (V _{DD})		1.8 V ± 5%			+2.5 V ± 10%			+3.3 V ± 10%				
Available Frequency Range		1.0 ~ 125.0 MHz			1.0 ~ 200.0 MHz			1.0 ~ 200.0 MHz				
Current Consumption		20 mA (typ.)			28 mA (typ.)			30 mA (typ.)				
		30 mA (max.)			35 mA (max.)			40 mA (max.)				
Rise Time (Tr) / Fall Time (Tf)		2.0 ns (typ.)			1.4 ns (typ.)			1.1 ns (typ.)				
10% ∓ 90% Waveform		5.0 ns (max.)			3.0 ns (max.)			3.0 ns (max.)				
Frequency Stability 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 " " ; represents .				
		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	" 30 " ± 30 ppm over -40°C to +85°C				
Output Logic " High " , " 1 "		V _{DD} - 0.4V (min.)										
Output Logic " Low " , " 0 "		0.4V (max.)										
Duty Cycle		1 MHz to 150 MHz : 50% ± 5% 150 MHz to 200 MHz : 50% ± 10%										
Output Load		15 pF										
Start-up Time		4.5 msec (typ.) ; 10 msec (max.)										
Storage Temperature		-55°C to + 150°C										
Aging at Ta=+25°C		± 3 ppm (max.) first year ; ± 2 ppm (max.) per year thereafter										
SSB Phase Noise	Offset	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz				
125.000 MHz @ 3.3 V	dBc/Hz	-61	-89	-110	-119	-119	-142	-149				
RMS Jitter (12kHz ~ 20 MHz)		0.9 psec (typ.)										
Output Enable / Disable Function												
Output Enable / Disable		70% of V _{DD} (min.) to Enable.										
		30% of V _{DD} (max.) to Disable.										
Disable Mode	Power Down Mode (code : PD)	Disable Current : 300 uA (typ.) , 400 uA (max.)										
		Output Enable Time : 4.5 msec. (typ.) ; 10 msec. (max.)										
	Stand-by Mode (code : SB)	Disable Current : 18 mA (typ.) , 22 mA (max.)										
		Output Enable Time : 10 nsec. (max.)										

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Part Number Format and Examples

Examples	[1]	[2]	-	[3]	[4]	-	[5]	-	[6]
	Supply Voltage	Holder Type		Frequency Stability	T		Center Frequency		Disable Mode
(1)	18	HTF57	-	B	T	-	25.000	-	PD
(2)	25	HTF53	-	C30	T	-	100.000	-	SB
(3)	3	HTF32	-	E	T	-	200.000	-	PD

Ex (1) : 18HTF57 - BT - 25.000 - PD [1.8V , HTF57 type , $\pm 50\text{ppm}$ @ -10°C to 70°C , OE , 25.000MHz , Power Down Mode]

Ex (2) : 25HTF53 - C30T - 100.000 - SB [2.5V , HTF53 type , $\pm 30\text{ppm}$ @ -10°C to 70°C , OE , 100.000MHz , Stand-by Mode]

Ex (3) : 3HTF32 - ET - 200.000 - PD [3.3V , HTF32 type , $\pm 50\text{ppm}$ @ -40°C to 85°C , OE , 200.000MHz , Power Down Mode]

[1]	Supply voltage , " 18 " for +1.8V ;" 25 " for +2.5V ; " 3 " for +3.3V		
[2]	Holder Type		
[3]	-10°C ~ 70 °C	" A " ± 25ppm ; " B " ± 50ppm ; " C " ± 100ppm ;	
		If non-standard please enter the desired stability after " C " , example " C15 " : represents ±15ppm over -10 to +70°C	
	-40°C ~ 85 °C	" D " ± 25ppm ; " E " ± 50ppm ; " F " ± 100ppm ;	
		If non-standard please enter the desired stability after " I " , example " I30 " : represents ± 30ppm over -40 to +85°C	
[4]	" T " for Output Enable/Disable Function		
[5]	Frequency in MHz		
[6]	Disable Mode , " PD " Power Down Mode ; " SB " Stand-by Mode		

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

HTF21	HTF22
HTF32	HTF53
HTF57	

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