



FEATURES

- Factory configurable part for short lead times
- Miniature 3.2 x 2.5 x 1.1mm package
- Frequency Range 1.0MHz to 200.0MHz
- Tristate (Enable/Disable) function as standard
- Supply voltage 1.8, 2.5 or 3.3 Volts
- Jitter 0.9ps typical

DESCRIPTION

EHTF32 miniature SMD oscillators consist of a CMOS-compatible hybrid circuit and a miniature quartz crystal within in a low-profile, industry-standard ceramic package. Providing a fully specified clock oscillator with a very small footprint, this part is factory configurable ensuring short delivery lead times. With low RMS jitter, this is a good choice for development engineers or those seeking custom frequencies in a short space of time.

SPECIFICATION

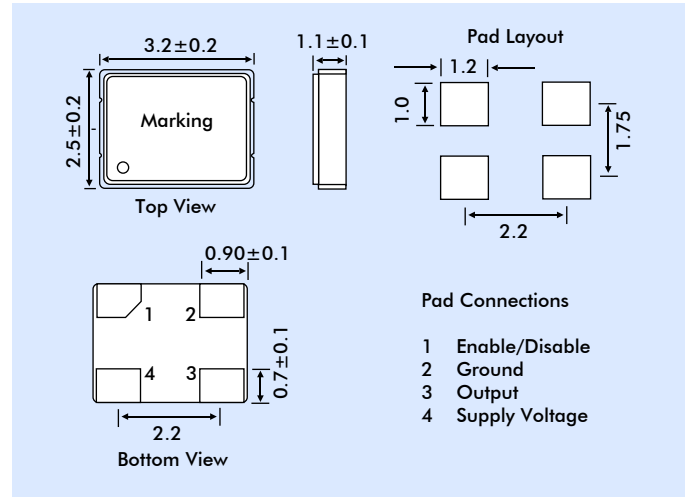
Frequency Range	Supply 1.8 Volts: 1.0MHz to 125.0MHz
	Supply 2.5 Volts: 1.0MHz to 200.0MHz
	Supply 3.3 Volts: 1.0MHz to 200.0MHz
Supply Voltage:	1.8 Volts $\pm 5\%$, 2.5 or 3.3Volts $\pm 10\%$
Output Logic:	LVC MOS
Frequency Stability:	From ± 25 ppm over temperature (See part number table)
Rise / Fall Time:	VDD = 1.8V 2ns typ 5.0ns max. VDD = 2.5V 1.4ns typ 3.0ns max. (10% - 90% waveform) VDD = 3.3V 1.1ns typ 3.0ns max.
Output Voltage:	HIGH '1' Vdd - 0.4V min. LOW '0' +0.4V max.
Output Load	15pF
Duty Cycle:	1MHz tp 150MHz 50% $\pm 5\%$ 150MHz to 200MHz 50% $\pm 10\%$
Supply Current:	VDD=1.8V: 20mA typ 30mA max. VDD=2.5V: 28mA typ 35mA max. VDD=3.3V: 30mA typ 40mA max.
Operating Temperature	Commercial: -10°C to +70°C Industrial: -40°C to +85°C
Start-up Time:	4.5ms typ 10ms max.
Storage Temperature:	-55°C to +150°C
Ageing:	± 3 ppm max. first year at 25°C ± 2 ppm max per year thereafter
O/P Enable/Disable Threshold:	70% of VDD min to enable (Pad 1) 30% of VDD max to disable
Disable Mode	
Power Down Option:	Disable Current 300 μ A typ, 400 μ A max. (Order code P) O/P enable time 4.5ms typ, 10ms max.
Stand-by Option:	Disable Current 18mA typ, 22mA max. (Order code S) O/P enable time 10ns max.
RMS Jitter (12kHz ~ 20MHz):	0.9ps typ 1.5ps max.

Note: Parameters are measured at ambient temperature of 25°C, supply

PHASE NOISE

SSB Phase Noise @ 125MHz 3.3V	Offset	<u>10Hz</u>	<u>100Hz</u>	<u>1kHz</u>	<u>10kHz</u>	<u>100kHz</u>	<u>1MHz</u>	<u>10MHz</u>
	DBc/Hz	-61	-89	-110	-119	-119	-142	-149

OUTLINE & DIMENSIONS



PART NUMBERING

Example: 20.000MHz 3 EHTF32 B T P

Frequency

3 = 3.3V, 25 = 2.5V, 18 = 1.8V

Series Designation EHTF32
Temperature Stability*

Stability	-10~+70°C	-40~+85°C
± 25 ppm	A	D
± 50 ppm	B	E
± 100 ppm	C	F

Output Enable

T = Endable/Disable

Disable Mode

P = Power Down
S = Stand-By

* For other stability requirements enter figure required.
E.g. for ± 20 ppm add '020' after 'EHTF32'.

ENVIRONMENTAL PERFORMANCE SPECIFICATION

RoHS Status:	Compliant
Humidity:	85% RH, 85°C for 48 hours
Hermetic Seal:	Leak rate 2x10 ⁻⁸ ATM -cm ³ /s max.
Solderability:	MIL-STD-202F Method 208E
Reflow:	260°C for 10 sec (see diagram)