

### FEATURES

- Factory configurable part for short lead times
- Miniature 5.0 x 3.2 x 1.2mm 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

EHTF53 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:	LVCMS
Frequency Stability:	From $\pm 25$ 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. VDD = 3.3V 1.1ns typ 3.0ns max.
(10% - 90% waveform)	
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.
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:	$\pm 3$ ppm max. first year at 25°C $\pm 2$ 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 $\mu$ A typ, 400 $\mu$ 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.

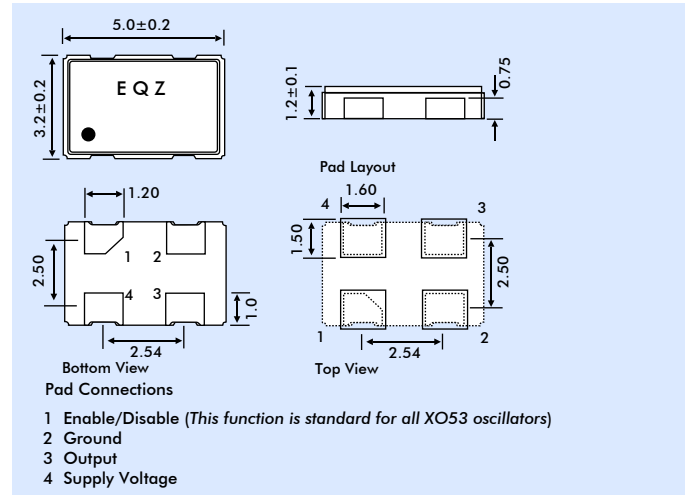
Note: Parameters are measured at ambient temperature of 25°C, supply voltage as stated and a load of 15pF

### PHASE NOISE

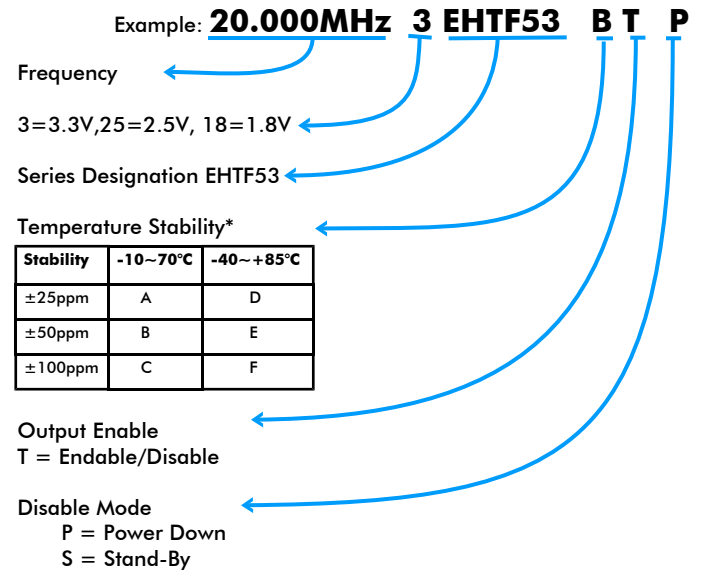
SSB Phase Noise @ 125MHz 3.3V	Offset	<b>10Hz</b>	<b>100Hz</b>	<b>1kHz</b>	<b>10kHz</b>	<b>100kHz</b>	<b>1MHz</b>	<b>10MHz</b>
	DBc/Hz	-61	-89	-110	-119	-119	-142	-149



### OUTLINE & DIMENSIONS



### PART NUMBERING



\* For other stability requirements enter figure required. E.g. for  $\pm 20$ ppm add '020' after 'EHTF53'.

### ENVIRONMENTAL PERFORMANCE SPECIFICATION

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