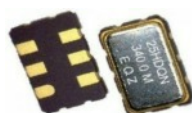


FEATURES

- **Low jitter <1.2ps phase jitter**
- **Wide frequency Range 10.0MHz to 250.0MHz**
- **Very quick delivery leadtime**
- **Supply voltage 2.5 or 3.3Volts**
- **Tristate function to conserve power**



(*536' package displayed)



DESCRIPTION

'GTQF' series oscillators are a precision frequency control component, providing a CMOS output VCXO with low current consumption, a wide frequency range with an integrated phase jitter performance of 1.0ps r.m.s. The part is available in two industry-standard packages, 7 x 5mm SMD and 5 x 3.2mm SMD.

GENERAL SPECIFICATION

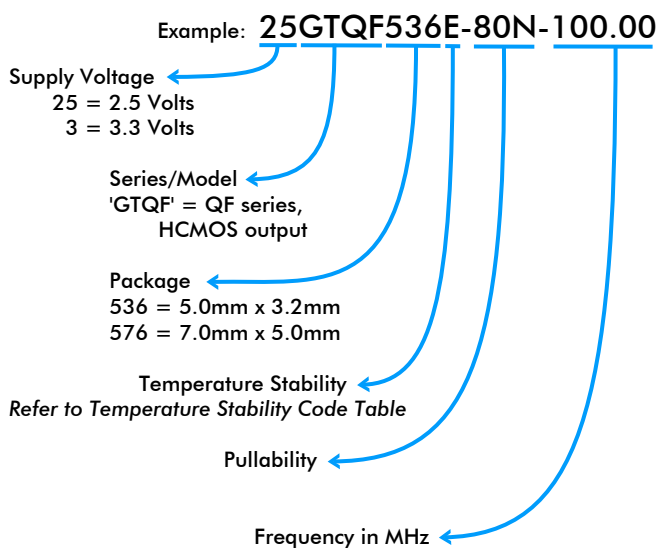
Output Logic Type:	LVC MOS
Frequency Range:	10.0MHz to 250.0MHz
Load:	15pF
Power Supply Voltage:	2.5±5%VDC or +3.3±5%VDC
Output Voltage 'HIGH':	0.9*V _{DD} minimum
Output Voltage 'LOW':	0.1*V _{DD} maximum
Duty Cycle:	50%±5%
Rise Time:	1.5 nsec. typical
Fall Time:	3.0 nsec. maximum
Current Consumption @+3.3V _{DD}	
10~50MHz:	30mA
51~150MHz:	38mA
151~250MHz:	48mA
Current with output disabled:	16mA typical
Start-up Time:	10ms maximum
Ageing:	±2ppm max., first year, ±10ppm max. over 10 years.
OE Control on Pad 2	
Enable:	0.7% V _{DD} min., or no connection
Disable:	0.3%V _{DD} max., (high impedance).
Output Enable Time:	200ns max.
Output Disable Time:	50ns max.
Phase Jitter r.m.s.:	1.2ps typical (12kHz to 20MHz)

Control Voltage Function

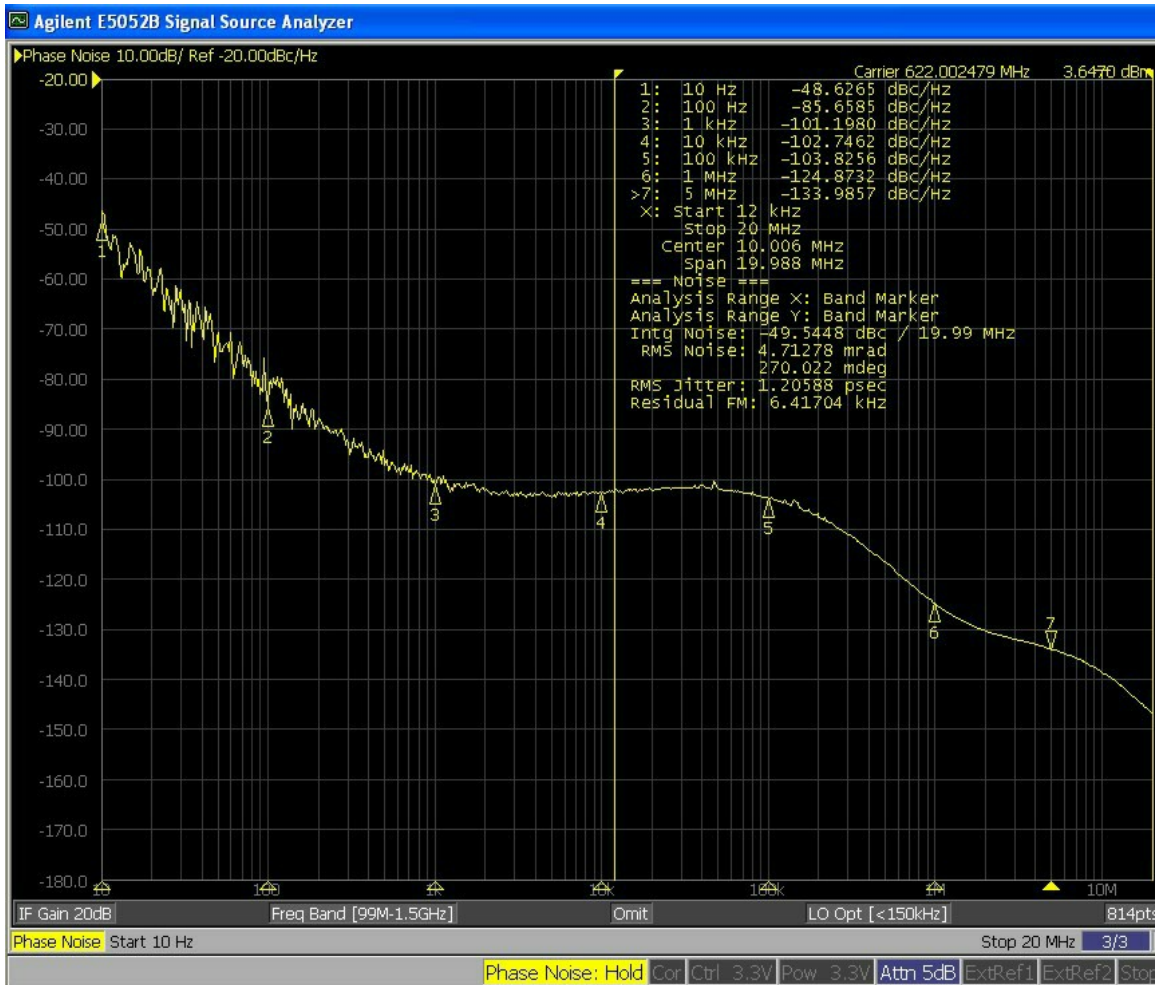
Supply Voltage	+2.5V	+3.3V
Vcon Centre	+1.25V	+1.65V
Vcon Range	+0.25V~+2.25V	+0.3V~+3.0V
Frequency Pulling Range	±80ppm (min.)	
Linearity	5% typ.; 10% max.	
Transfer Function	Positive Transfer	
Input Impedance	1MΩ typ.	
Bandwidth	10kHz min. @-3dB	

Frequency Stability Over Operating Temperature Range	±25ppm	±50ppm	±100ppm
Commercial (-10°C to +70°C)	A	B	C
Industrial (-40°C to +85°C)	D	E	F

PART NUMBERING



GTQF SERIES PHASE NOISE & PHASE JITTER DATA

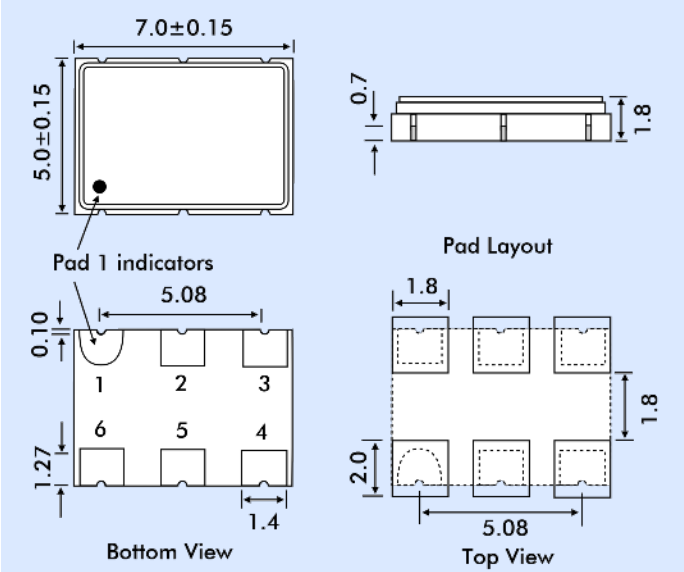


GTQF SERIES PHASE NOISE & PHASE JITTER DATA

Phase Noise [dBc/Hz typ.]	Offset	10Hz	100Hz	1kHz	10kHz	100kHz	1MHz	10MHz
	156.250MHz	-55	-85	-109	-116	-118	-139	-146

OUTLINE & DIMENSIONS

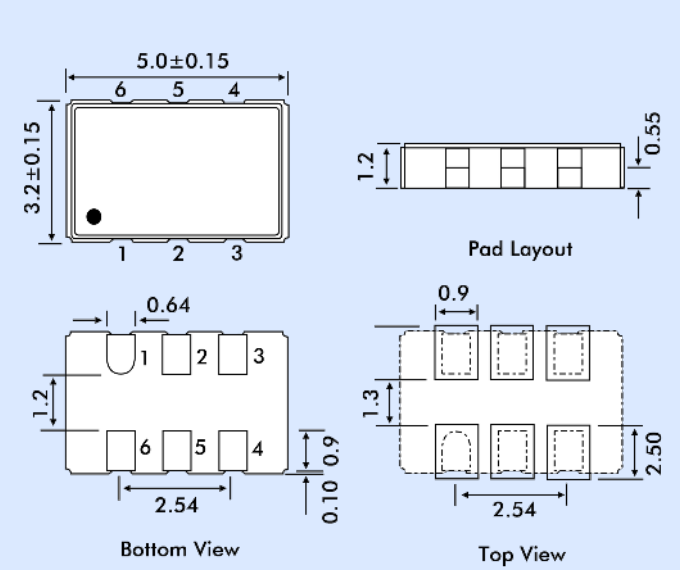
7.0 x 5.0mm SMD Package



Pad Connections

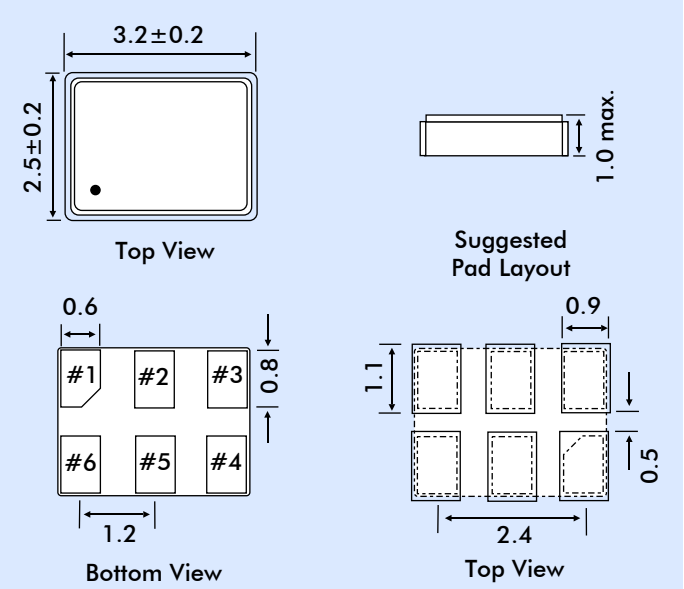
- 1 Control Voltage
- 2 OE High Enable
- 3 Ground
- 4 Output
- 5 No connection
- 6 Supply Voltage

5.0 x 3.2mm SMD Package



Pad Connections

- 1 Control Voltage
- 2 OE High Enable
- 3 Ground
- 4 Output
- 5 No connection
- 6 Supply Voltage

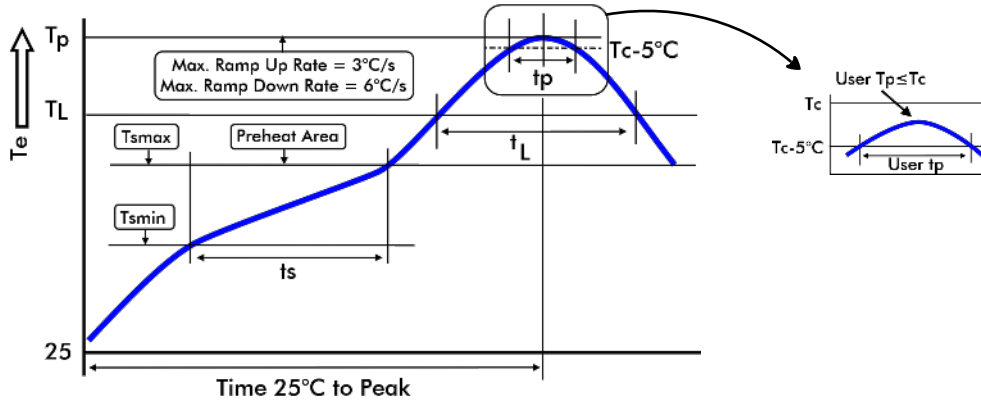


Pad Connections

- 1 Voltage Control
- 2 Tri-state
- 3 Ground
- 4 Output
- 5 No connection
- 6 Supply Voltage

RECOMMENDED SOLDER TEMPERATURE PROFILE

Suggested Reflow Profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak		
- Temperature min. (T_s min.)	100°C	150°C
- Temperature max. (T_s max.)	150°C	200°C
- Time (t_s) (T_s min. to T_s max.)	60 to 120 seconds	60 to 180 seconds
Ramp-up Rate (T_L to T_p)	3°C/second max.	3°C/second max.
Liquidus temperature (T_L)	183°C	217°C
Time (t_L) maintained above T_L	60 to 150 seconds	60 to 150 seconds
Peak package body temperature (T_p)	235°C	260°C
Time (T_p) within 5°C of the classification temperature T_c	10 to 30 seconds	20 to 40 seconds
Ramp-down rate (T_p to T_L)	6°C/second max.	6°C/second max.
Time 25°C to peak temperature	6 minutes max.	8 minutes max.

TEST CIRCUIT

