

- Industry-standard 8 pin DIL package
- Frequency range 625kHz to 50.0MHz
- CMOS/TTL Output
- Supply Voltage 1.8, 2.5, 3.3 VDC
- Integrated Phase Jitter 1ps maximum



### DESCRIPTION & APPLICATIONS

G8 VCXOs are packaged in the industry-standard 8 pin Dual-in-Line package. G series VCXOs use fundamental mode crystal oscillators for low phase noise. Applications include phase lock loop, SONET/ATM, set-top boxes, MPEG, audio/video modulation, video game consoles, Fibre Channel, FPGAs, Data Acquisition and HDTV.

### SUPPLY VOLTAGE-DEPENDENT SPECIFICATION

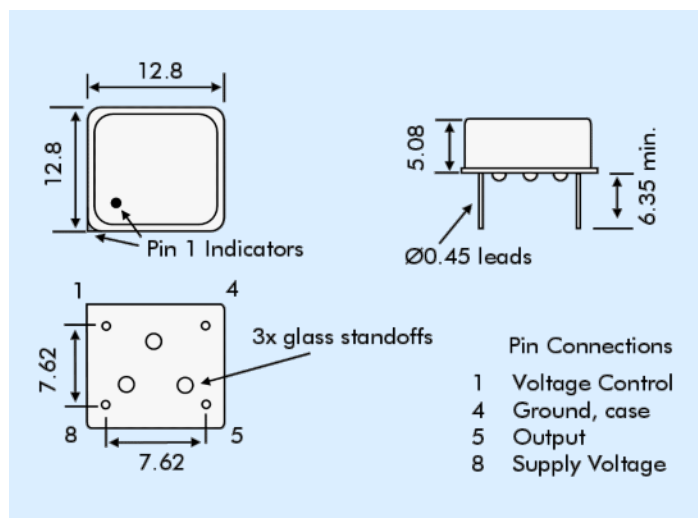
Input Voltage (Vdd):	Vdd = +1.8VDC ±5%	Vdd = +2.5VDC ±5%	Vdd = +3.3VDC ±5%	Vdd = +5.0VDC ±10%
Frequency Range*:	16.0MHz ~ 50.0MHz	0.625MHz ~ 50.0MHz	0.625MHz ~ 50.0MHz	1.0MHz ~ 50.0MHz
Output Waveform:	TTL/CMOS	TTL/CMOS	TTL/CMOS	TTL/CMOS
Initial Frequency Accuracy:	To tune to nominal fr. with Vc=0.9±0.15V	To tune to nominal fr. with Vc=1.25±0.2V	To tune to nominal fr. with Vc=1.65±0.2V	To tune to nominal fr. with Vc=2.5±0.2V
Output Logic HIGH '1'	TTL: - - - -	- - - -	2.4V (min.)	2.4V (min.)
	CMOS: 1.62V (min.)	2.25V (min.)	2.97V (min.)	4.5V (min.)
Output Logic LOW '0'	TTL: - - - -	- - - -	0.4V (max.)	0.4V (max.)
	CMOS: 0.183V (max.)	0.25V (max.)	0.33 (max.)	0.33 (max.)
Frequency Deviation Range:	Standard: ±80ppm (min.)	Standard: ±80ppm (min.)	Standard: ±80ppm (min.)	Standard: ±80ppm (min.) ±100ppm available
Control Voltage Centre	0.9VDC	1.25VDC	1.62VDC	2.5VDC
Control Voltage Range:	0V to 1.8V	0.25V to 2.25V	0.3V to 3.0V	0.5V to 1.5V

5V DISCONTINUED

### GENERAL SPECIFICATION

Frequency Stability:	See table
Frequency Change vs. Input Voltage:	±5ppm max. (V <sub>DD</sub> ±5%)
Input Voltage:	+1.8V±5%, +2.5V±5%, +3.3V±5% or 5.0V±10%
Output Load	TTL: 2TTL gates CMOS: 15pF
Rise/Fall Time	TTL: 6ns max, 4ns typ. (0.4V to 2.4V) CMOS: 6ns max, 4ns typ. (20%~80% V <sub>DD</sub> )
Duty Cycle:	50±10% standard, 50±5% option
Integrated Phase Jitter:	1ps maximum (12kHz to 20MHz)
Period Jitter RMS:	2.0ps typical
Period Jitter Peak to Peak:	14ps
Start-up time:	10ms max., 3ms typical
Current Consumption:	10 to 45mA, frequency dependant (27MHz: 10mA typical at 3.3V, 20mA typical at 5.0VDC)
Linearity:	6% typical, 10% maximum
Modulation Bandwidth:	10kHz min., measured at V <sub>cont</sub> = 1.65V or 2.5V.
Input Impedance:	1MΩ typical
Slope Polarity:	Monotonic and Positive, increasing control voltage increases output frequency.
Ageing:	±3ppm per year maximum
RoHS Status:	RoHS Compliant and lead (Pb) free

### OUTLINE & DIMENSIONS



**PHASE NOISE**

<b>27.0MHz 3.3V supply</b>	<b>Offset:</b>	<b>10Hz</b>	<b>100Hz</b>	<b>1kHz</b>	<b>10kHz</b>	<b>100kHz</b>	<b>1MHz</b>
		-40dBc/Hz	-104dBc/Hz	-132dBc/Hz	-147dBc/Hz	-152dBc/Hz	-150dBc/Hz

**FREQUENCY STABILITY OVER OPERATING TEMPERATURE RANGE PART NUMBER CODES**

Stability	±25ppm	±50ppm	±100ppm
Commercial 'C' -10° to +70°C	A	B	C
Industrial 'I' -40° to +85°C	D	E	F

**PART NUMBERING PROCEDURE**

Example = 3G8B-80N-27.000

