

VFGC

Crystal Oscillators HCMOS 3.3V or 5V 5X3.2mm Surface Mount 500 KHz to 135 MHz

Features

- Wide frequency range with 3.3V or 5V supply options
- High speed-Low jitter CMOS output with tristate
- Small SMD package-5X3.2mm
- Extra low profile for slimline applications
- Stability options: 100, 50 or 25ppm
- Commercial or industrial temperature range
- Rugged, hermetic package for automated assembly

Typical Applications

Telecom/networking systems that require low jitter clocks

- ✓ DSL
- ✓ Gigabit Ethernet,
- ✓ Fibre channel
- ✓ Optical networking

Mobile systems requiring small size

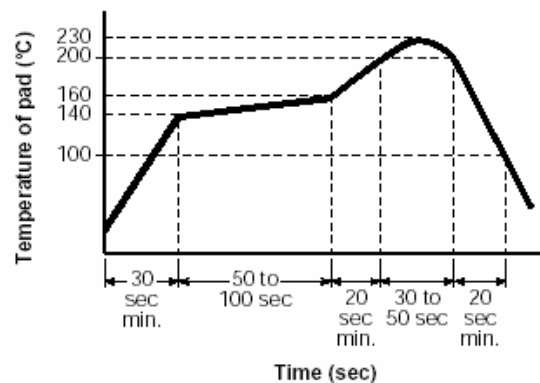
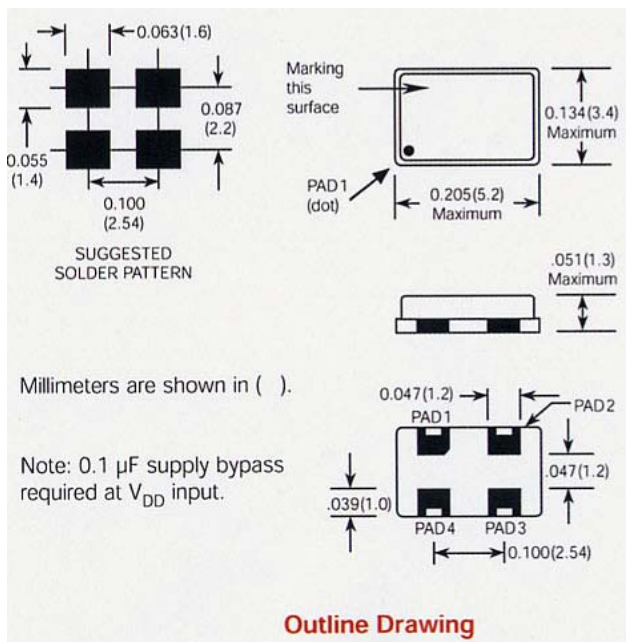
- ✓ PDA
- ✓ Wireless Lan
- ✓ Notebook computer
- ✓ PCMCIA
- ✓ Memory modules

Description

Valpey Fisher's GC surface mount crystal oscillator provides waveforms for clocking HCMOS and TTL circuits. The new 5X3.2mm footprint package provides the performance of larger oscillators with a level of board space reduction achieved. ASIC technology is used to accomplish size reduction and enhance performance and reliability. Low jitter output signals are generated via the use of hi-Q fundamental or overtone miniature quartz resonators. Along with the extra low profile height, they are ideal for space critical portable or hand-held equipment, while their tight tolerance and low noise performance makes them also the ideal choice for high data rate telecom applications. The wide range of frequencies offered, many stability options, 5.0V or 3.3 volt supply, and industrial temperature ranges, makes this model attractive for any application requiring extreme size reduction. Tape and reel packaging is standard.

CONNECTION

PAD 1	Tristate
PAD 2	Ground and Case
PAD 3	Output
PAD 4	+3.3V or +5V V_{DD}



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5X3.2mm Surface Mount

500 KHz to 135 MHz

ELECTRICAL SPECIFICATIONS

Frequency Range	3.3V Supply	500KHz to 135MHz
	5.0V Supply	500KHz to 100MHz
Frequency Stability		100, 50 or 25ppm
Includes calibration at 25°C, operating temperature, change of input voltage, change of load, shock and vibration		
Input Voltage, V_{DD}		3.3 +/-10% or 5.0 +/-10%
Output Levels	(CMOS)	1 level: V _{DD} -0.4 min '0' level: 0.40 max
Output Load		15pF typ, 30pF max
Jitter		8 ps RMS max
Symmetry		45/55 percent @ 50% V _{DD}
Aging (typical)		3ppm
First year		1ppm/yr
After first year		

Input Current (Max)	3.3V	5.0V	Units
0.5-9.999 MHz	7	10	mA
10-19.999 MHz	7	15	mA
20-31.999 MHz	12	25	mA
32-49.999 MHz	20	35	mA
50-79.999 MHz	25	50	mA
80-99.999 MHz	30	60	mA
100-135.0 MHz	40	80	mA
Rise and Fall Times (Max)			
0.5-31.99 MHz	10	10	ns
32-49.99 MHz	10	6	ns
50-79.99 MHz	8	5	ns
80-99.99 MHz	5	5	ns
100-135.0 MHz	4	4	ns

Input Requirements for Pad 1:

- "1": On-Pad 1 may float or 2.8V min
- "0": Tristate-Pad 1 requires 0.4V max

ENVIRONMENTAL SPECIFICATIONS

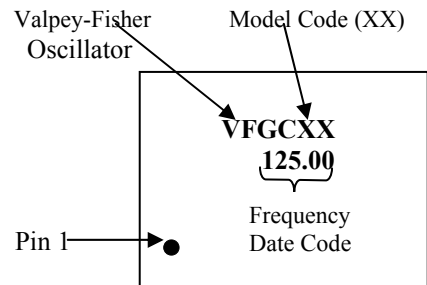
Temperature		
Operating	Commercial:	0° to 70°C
	Industrial:	-40°C to +85°C
Storage		-55° to +125°C
Shock	1000 Gs, 0.35 ms, ½ sine wave, 3 shocks in each plane	
Vibration	10-2000 Hz of .06" d.a. or 10 Gs, whichever is less	
Humidity	Resistant to 85° R.H. at 85°C	

MECHANICAL SPECIFICATIONS

- Leak**- MIL STD 883, Method 1014, Condition A1
- Case**- Ceramic with hermetic resistance-welded metal lid
- Pads**- Solderable gold over nickel
- Marking**- Epoxy ink or laser engraved
- Resistance to solvents**- MIL STD 202, Method 215

MARKING SPECIFICATION

The format for the marking is:



HOW TO ORDER

Create ordering part number as follows:

VFGC	3	A	B	125	M
Supply Voltage	Frequency Stability	Temperature Range	Frequency	M=MHz	
3=3.3 volts 5=5.0 volts	A=+/-100 ppm B=+/-50 ppm C=+/-25 ppm	A=0 to 70°C B=-40 to +85°C			