

## VC-490/495 Voltage Controlled Crystal Oscillator



### Features

- Small SMD HFF VCXO
- 50.0MHz to 170MHz
- 3.3V supply voltage
- -20 to +70°C / -40 to 85°C
- LVPECL / HCMOS / LVDS output
- Complementary outputs available

### Applications:

- Gigabit Ethernet
- 10G and 40G Systems
- Basestations
- SDH/SONET/ATM
- Point to Point / Multipoint
- WDM Systems
- Test & Measurement Equipment

### Description:

Available at frequencies up to 170MHz, the VC-490/495 VCXO's combine VI's unique precision HFF-crystal-technology with a low noise discrete circuit providing exceptional low jitter performance compared to standard ASIC-solutions.

The unit is packaged as an FR-4 based SMD device measuring 13.8 x 9.1 x 5.5mm with a supply voltage of 3.3Vdc. Temperature ranges are -20° to +70°C and -40° to +85°C with tight temperature stability. The oscillators also have a pulling range of more than 100 ppm with linearity of < 10% for enhanced PLL performance. Output options available include LVHCMOS, complementary LVPECL and complementary LVDS.

The VC-490 's small size and high performance make it ideally suited for communication applications including ATM/SONET/SDH and Gigabit Ethernet applications.

# VC-490/495 Voltage Controlled Crystal Oscillator

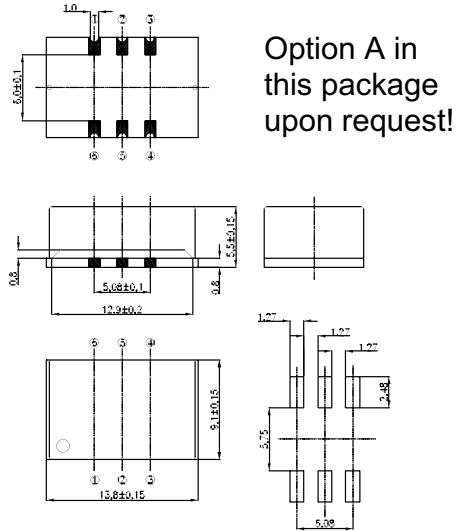
## Performance Characteristics

### Electrical Performance

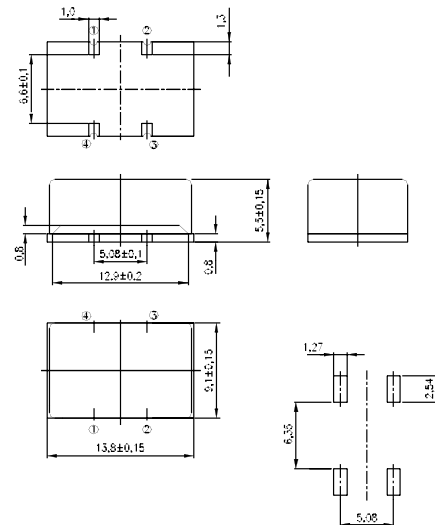
Parameter	Symbol	Minimum	Typical	Maximum	Units
Frequency:	FN	50.0		170.0	MHz
Supply Voltage:	V <sub>CC</sub>	3.135	3.3	3.465	V
Output Option A Option F: Option P:		LVHCMOS complementary LVPECL complementary LVDS			
Output Option A LVHCMOS:	I <sub>CC</sub>		20.0	40.0	mA
Option F compl. LVPECL:	I <sub>CC</sub>		50.0	70.0	mA
Option P compl. LVDS:	I <sub>CC</sub>		15.0	40.0	mA
Output load Option A: Option F: Option P:		1 kOhm // 15pF 50 Ohm 100 Ohm differential			
Rise/Fall Time tr/TF: Option A:	t <sub>R</sub> / t <sub>F</sub>			3.0	nsec.
Option F, P:	t <sub>R</sub> / t <sub>F</sub>			1.0	nsec.
Symmetry (Duty/Cycle):	SYM	40		60	%
Temp. stab. <b>D - 205</b> -20 to +70°C:	F <sub>TEMP</sub>	-20.0		+20.0	ppm
<b>F - 305</b> -40 to +85°C:	F <sub>TEMP</sub>	-30.0		+30.0	ppm
Accuracy @ +25C after reflow:	F <sub>CAL</sub>	-15.0		+15.0	ppm
Aging first year:	F <sub>FIRST</sub>	-3.0		+3.0	ppm
Aging per year thereafter:	F <sub>AGING</sub>	-2.0		+2.0	ppm/a
Freq. vs. supply for 5% changes.:	F <sub>SUP</sub>	-3.0		+3.0	ppm
Freq. vs. load for 10% change:	F <sub>LOAD</sub>	-1.0		+1.0	ppm
Deviation:	F <sub>PULL</sub>	±100			ppm
Control voltage:	V <sub>C</sub>	0.3		3.0	V
Transfer Function:		positive			
Linearity:	Lin			10	%
Storage Temperature:	TS	-45		+95	°C
Package <b>490</b> (Option <b>F,P</b> ) 6 pads			13.8x9.1x5.5		mm
Package <b>495</b> (Option <b>A</b> ) 4 pads			13.8x9.1x5.5		mm

# VC-490/495 Voltage Controlled Crystal Oscillator

## 490 Package Outline Drawing/Pad Layout



## 495 Package Outline Drawing/Pad Layout

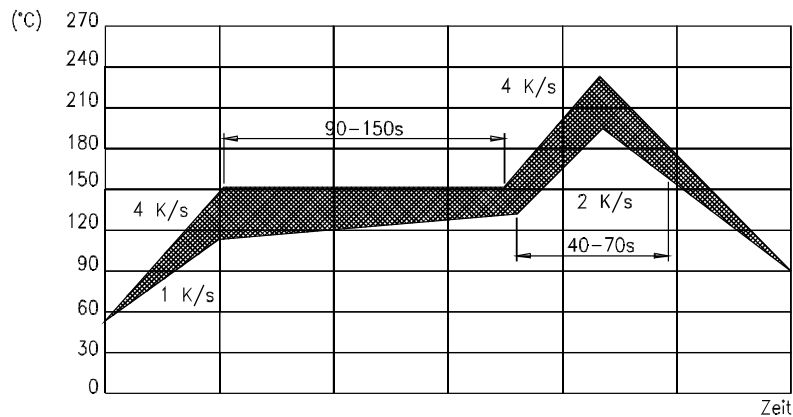


Pin Out	
Pin	Function
1	Control Voltage
2	Output enable/disable
3	Ground Case
4	RF-Output
5	Complementary RF-output
6	Supply Voltage

Pin Out	
Pin	Function
1	Control Voltage
2	Ground Case
3	RF-Output
4	Supply Voltage

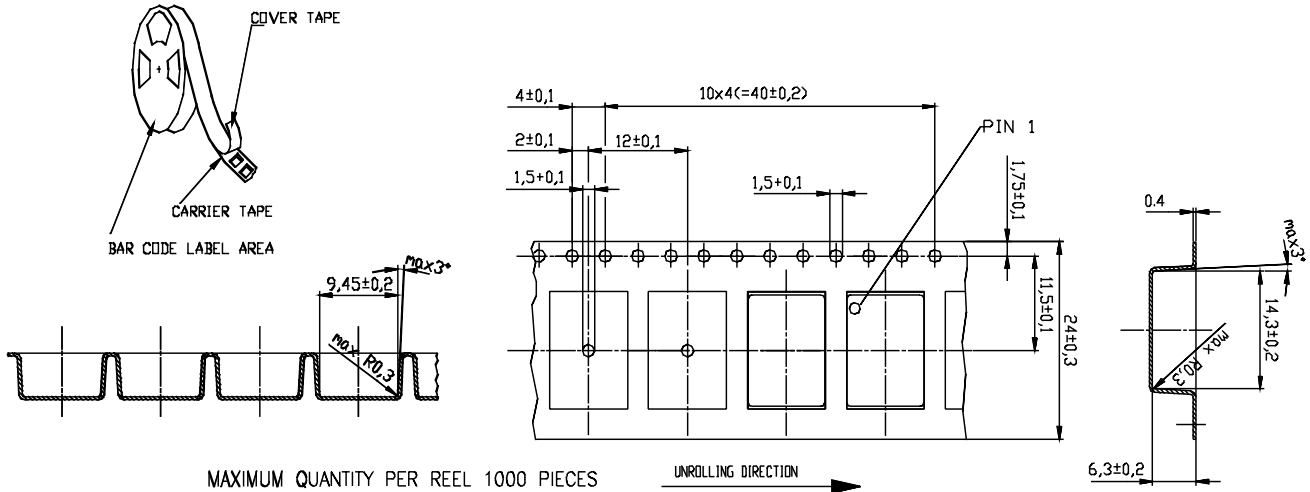
Standard Frequencies					
61.44 MHz	68.746378 MHz	76.8 MHz	77.76 MHz	78.616 MHz	90.843428 MHz
122.88 MHz	125.0 MHz	131.072 MHz	155.52 MHz	166.6286 MHz	167.331645 MHz

## Recommended Soldering Profile

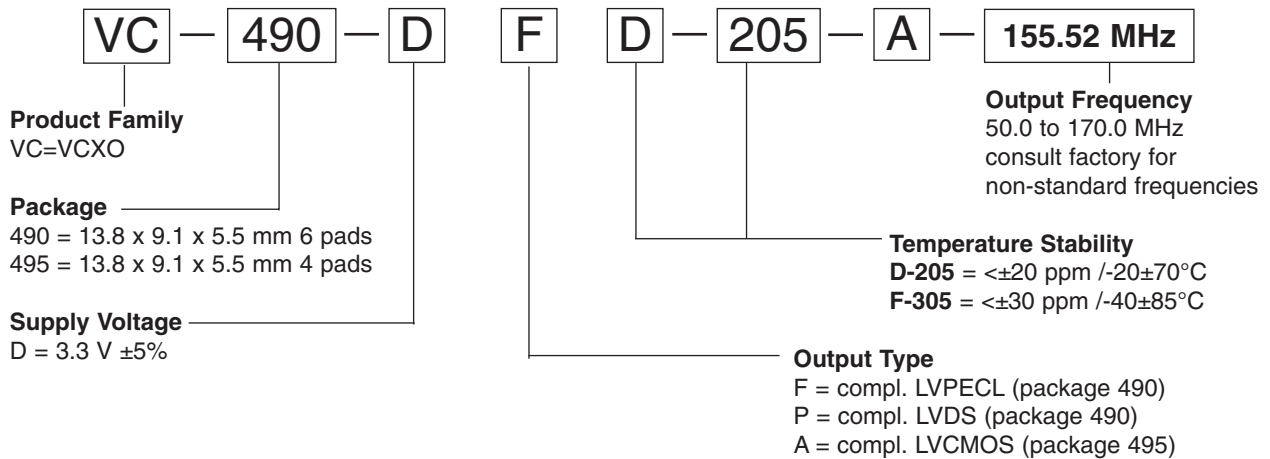


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## Tape and Reel



## Ordering Information



For additional information please contact:



www.vectron.com

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