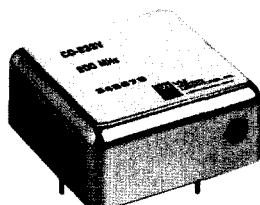


Sinewave Voltage Controlled Crystal Oscillators

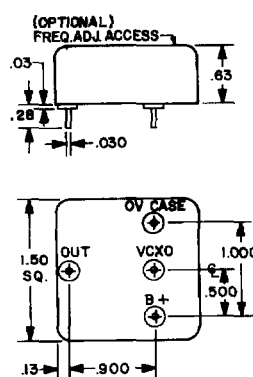
CO-233V/CO-233VH



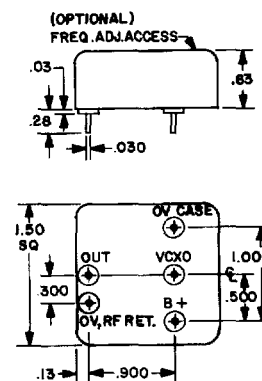
Features

- Frequencies to 200 MHz
- Deviation to ± 200 ppm
- PC Board Mount
- Low aging option
- 13 dBm optional

CO-233V

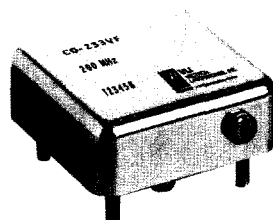


CO-233VH



Note: dimensions in inches

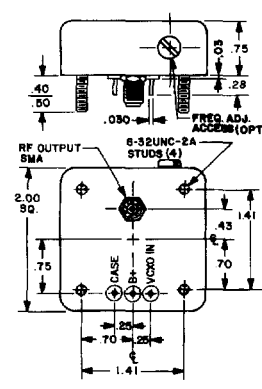
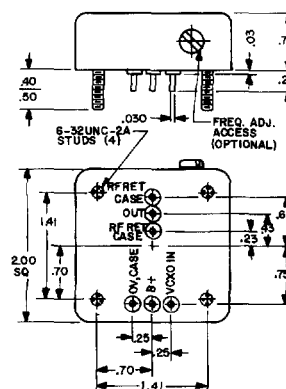
CO-233VF/CO-233VFW



Features

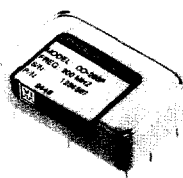
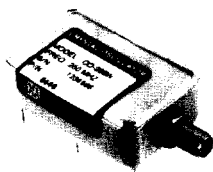
- Frequencies to 400 MHz
- Deviation to ± 200 ppm
- PC Board Mount
- Low aging option
- 13 dBm optional

CO-233VF



Note: dimensions in inches

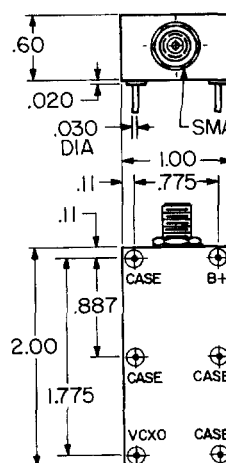
CO-286VW CO-286VP



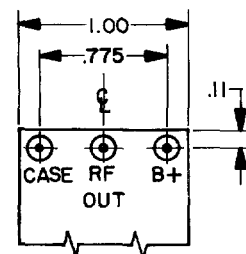
Features

- Frequencies to 1200 MHz
- Deviation to ± 200 ppm
- Chassis mount RF connector configuration
- Small size
- Low aging option
- 13 dBm optional

CO-286VW



CO-286VP



Note: dimensions in inches

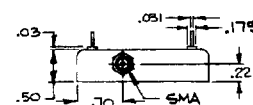
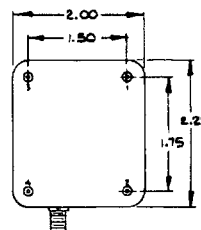
Sinewave Voltage Controlled Crystal Oscillators

CO-287VW

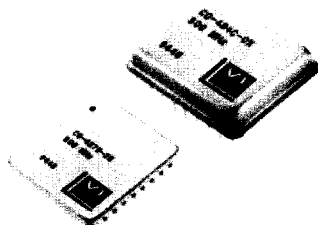


Features

- Frequencies to 2.48832 GHz
- Deviation to ± 200 ppm
- 13 dBm optional
- SMA RF chassis mount
- Low profile

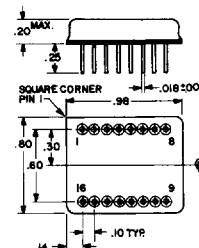
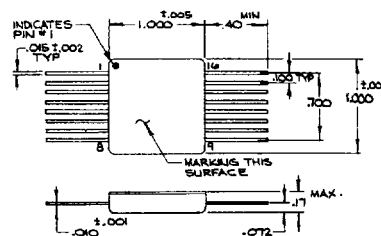


Note: dimensions in inches

CO-484V/487V

Features

- Frequencies to 200 MHz
- Deviation to ± 200 ppm
- Low profile hybrid 16 pin DDIP and 16 pin flatpack
- 7 dBm output



Note: dimensions in inches

SPECIFICATIONS

SINEWAVE

Configuration		PC board mount		Chassis mount with rf output connector		Low profile hybrid DIP and flatpack
Series	(a) CO-233V (b) CO-233VH	(a) CO-233VF (b) CO-286VP	(a) CO-233VFW (b) CO-286VW	CO-287VW		CO-484V CO-487V
Center Frequency	(a) 8-149.9 MHz (b) 150-400 MHz	(a) 8-400 MHz (b) 400.1-1200 MHz	(a) 8-400 MHz (b) 400.1-1200MHz	1.3 GHz to 2.488 GHz		8-200 MHz
Output Level 0.5 Vrms/50Ω (+7 dBm); Option "R": 13 dBm (not available in CO-484V/487V above 140 MHz or CO-233VF/VFW above 280 MHz). Harmonics are -20 dBc. Harmonic and subharmonic levels can be reduced to -30 dBc or -40 dBc in all models except CO-233V, CO-233VH and CO-296V. +20 dBm optional in CO-283VW.						
Supply (± 5%) +15 Vdc (+12 Vdc to +24 Vdc optional); current ranges from 15 mA at 8 MHz to 100 mA at 1200 MHz						
Deviation/ Stability Alternatives	Code	Temperature Range	Temperature Stability	*Minimum Deviation	*Deviation is referenced to the specified output frequency. For example, in Model CO-484V-AX at 100 MHz, at 25°C and OV control the frequency is at least 50 ppm below 100 MHz and at +6V the frequency is at least 50 ppm above 100 MHz. **The following notes apply to options C, F, I, L, and N (± 200 ppm deviation) •They are only available at frequencies up to 75 MHz in all models and from 1.3 GHz to 2.488 GHz in CO-287W. •Linearity of ± 10% is standard to 75 MHz (± 20% is standard for CO- 287 VW) Not available for CO-287VW	
	O	0/+50°C	± 10 ppm	± 30 ppm		
	A	0/+50°C	± 20 ppm	± 50 ppm		
	B	0/+50°C	± 35 ppm	± 100 ppm		
	C**	0/+50°C	± 35 ppm	± 200 ppm		
	D	0/+70°C	± 20 ppm	± 40 ppm		
	E	0/+70°C	± 40 ppm	± 100 ppm		
	F**	0/+70°C	± 40 ppm	± 200 ppm		
	G	-20/+70°C	± 30 ppm	± 60 ppm		
	H	-20/+70°C	± 40 ppm	± 100 ppm		
	I**	-20/+70°C	± 40 ppm	± 200 ppm		
	J	-40/-85°C	± 40 ppm	± 60 ppm		
	K	-40/-85°C	± 50 ppm	± 100 ppm		
	L**	-40/-85°C	± 50 ppm	± 200 ppm		
	M	-55/+85°C	± 50 ppm	± 100 ppm		
	N**	-55/+85°C	± 50 ppm	± 200 ppm		
Control Voltage 0 to -6V positive transfer function (lowest frequency at OV) * ± 3V to ± 10V optional except for CO-286V *(With bipolar control voltage, transfer function is negative, linearity is ± 10%.)						
Linearity ± 20%, smooth monotonic characteristic (± 10% linearity available) ± 10% is standard with bipolar control voltage and with deviation/stability options C, F, I, L, and N.						
Modulation Rate dc to 1 kHz; higher modulation rates available						
Modulation Input Z Greater than 50 kΩ						
Aging Rate Hybrid models: 3-5 ppm for first year, then 2 ppm/year thereafter—less than 20 ppm total over 10 years. Other Models: 5 ppm for first year, then 3 ppm/year thereafter. Option "Y": 2 ppm for first year, 1 ppm/year thereafter.						