

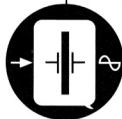
# SINE SINWAVE SOURCE

## Crystal Oscillators

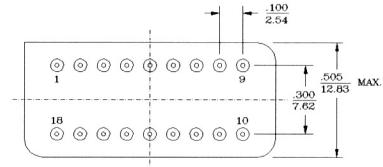
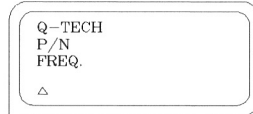
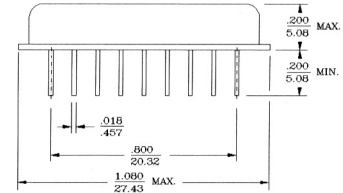
Please contact us  
for variations  
on these  
specifications

**Q-Tech  
Corporation**

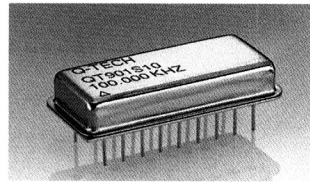
tel (310) 836-7900  
fax (310) 836-2157  
www.q-tech.com



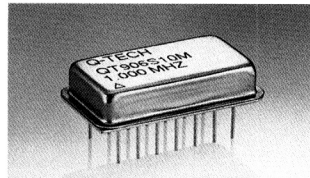
Upper dimensions in inches -  
lower dimensions in millimeters.  
Unless otherwise specified,  
tolerances are .005" (.127mm).  
Detailed mechanical drawings  
available by request.  
Part Marking: Please note that  
the ESD Symbol marked on  
all of our packages identifies  
Pin 1.



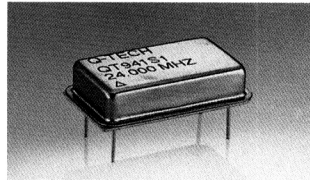
**QT901S**



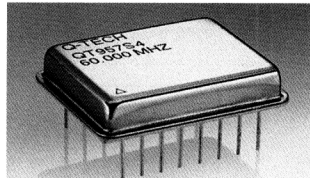
QT901S



QT906S



QT941S



QT957S

The Q-TECH 900 Series encompasses state of the art Sinewave Source with low harmonic distortion, a wide range of supply voltages, and a precise sinewave output. Some of the unique features of these sources are their availability in DIP packages and the wide frequency range with emphasis on low frequency sinewave outputs (10 Hz to 1 MHz) with Total Harmonic Distortion (THD) as low as 1%.

A flexible design allows Q-TECH Corporation to offer a variety of choices of output power and load. Based on this flexibility, Q-TECH welcomes specifications with parameters other than standard.

A voltage controlled option is available for the 900 series with a standard pull range of  $\pm 100$  ppm.

The AT-cut crystal utilized in the design allows for high stability for a particular temperature range extending from  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ . For more information, please refer to the stability vs. temperature table on the following page.

The reliable construction of these sinewave oscillators qualify them for more stringent environmental applications. Military screening is available as an option.

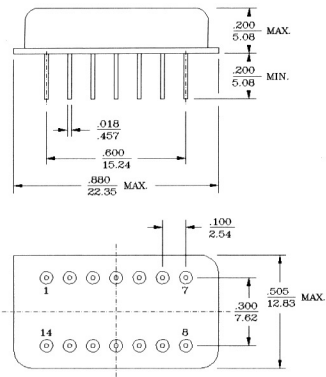
sample part number

**QT901S11M - 30.000 kHz**

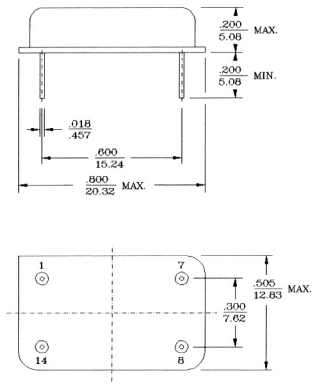
**( ORDERING  
INFORMATION )**

MODEL#	STABILITY	SCREENING	FREQUENCY
QT901S	Please refer to stability table on opposite page.	Designate <b>M</b> for Product Level B M55310 environmental screening. For more information, see page 45.	QT901S: 10 Hz to 1 MHz
QT906S			QT906S: 1 MHz to 80 MHz
QT941S			QT941S: 1 MHz to 80 MHz
QT957S			QT957S: 10 Hz to 200 MHz

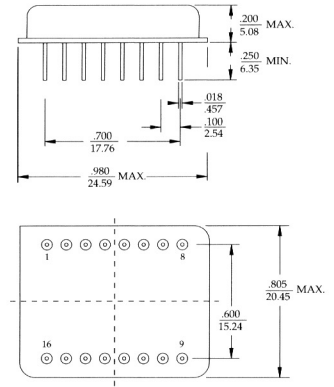
Please contact our factory or visit our website,  
www.q-tech.com, for technical updates.



**QT906S**



**QT941S**



**QT957S**

**PIN CONNECTIONS**

QT#	GND	OUT	Supply	CASE	ITP*
QT901S	9	10	18	9	4 + 11
QT906S	7	8	14	7	4 + 11
QT941S	7	8	14	7	N/A
QT957S	8	9	16	8	N/A

\*Internal Tie Points. Do not connect to these pins.

**FREQUENCY STABILITY VS TEMPERATURE\***

CODE	±%	±PPM	TEMP
1	.01	100	0°C to + 70°C
3**	.0005	5	0°C to + 50°C
4	.005	50	0°C to + 70°C
5	.0025	25	-20°C to + 70°C
6	.005	50	-55°C to +105°C
9	.005	50	-55°C to +125°C
10	.01	100	-55°C to +125°C
11	.005	50	-40°C to + 85°C
12	.01	100	-40°C to + 85°C

\*All units operate from -55°C to + 125°C. Tolerance is not specified outside the temperature ranges shown above.  
 \*\*Requires external tuning capacitors. For pin connections and for frequencies above 20 MHz, consult the factory.  
 For frequency stability vs. temperature options not listed herein, request a custom part number.

**FEATURES**

- Wide Frequency Range
- Small Size (14, 16 and 18 pin DIP)
- Low Total Harmonic Distortion
- Choices of Output Power and Load
- Choices of Pin Assignment
- Voltage Controlled (optional)
- Wide Operating Temperature Range
- Product Level B M55310 Screening available upon request

**ELECTRICAL**

**SPECIFICATIONS**

Model#	Frequency	Input Voltage	Output Power***	Supply Current	Spectral Purity****
QT901S	10 Hz to 1 MHz	+15 V ±5% *	Standard: 1 V RMS ±10% (10 kohm load)	<20 mA	<1% THD
QT906S	1 MHz to 80 MHz	+5 V ±10% **	Standard: 7 dBm ±2dBm (50 kohm load)	<40 mA	Harmonics: -20 dBc Sub-harmonics: -30 dBc
QT941S	1 MHz to 80 MHz	+5 V ±10% **	Standard: 7 dBm ±2dBm (50 kohm load)	<40 mA	Harmonics: -20 dBc Sub-harmonics: -30 dBc
QT957S	10 Hz to 200 MHz	+5 V ±5% **	Standard: 1 V RMS ±10% (10 kohm load)	<60 mA	Harmonics: -20 dBc Sub-harmonics: -30 dBc

\* Supply voltage above 15 V is available.      \*\*\* Optional 50 kohm load, 0 dBm designs are available for frequencies above 1 MHz. (Options are available for other power and load specifications, please consult the factory)  
 \*\* Supply voltage above 5 V is available.      \*\*\*\* Options are available for -30 dBc and -40 dBc harmonics, please consult the factory.

Phase Noise: (typical)	Offset from Carrier	Standard SSB Noise to Carrier Ratio
	100 Hz	-100 dBc/Hz
	1 kHz	-125 dBc/Hz
	10 kHz	-140 dBc/Hz
	50 kHz	-145 dBc/Hz

Non-Hybrid versions of these Sinewave Sources are available in industry standard solder sealed packages.