# TRAK MICROWAVE CORPORATION

## Miniature AT-Cut Crystal Oscillators

### Fundamental and Multiplied Crystal Oscillators
### 10-001 & 10-101 Series

These miniature AT-Cut crystal oscillators are designed for rugged printed circuit through hole and surface mount applications. A wide range of frequencies and options are available.

## Electrical Specifications

| | |
|---|---|
| Frequency Range: | 60 to 1440 MHz |
| Frequency Set Accuracy (+25°C): | ± 10 ppm |
| Frequency Stability vs Temperature: | ± 30 ppm |
| Aging Rate: | 5 ppm first year |
| Power Output: | + 10 dBm, minimum |
| Phase Noise: | See Figure 1 |
| Spurious: | -80 dBc, typical |
| Harmonics & Sub-harmonics: Note 1 | -30 dBc, maximum |
| Output VSWR: | 1.5:1, typical |
| Supply Voltage: | +12 to 18 volts |
| DC Current: | 80 mA, typical |

## Environmental Specifications

Standard Temperature Range: 0 to +70°C

## Mechanical Specifications

See Outlines

## Options

See Table I

*Note 1: "Sub-harmonics" refers to the unwanted multiples of the fundamental crystal used.*
*Note 2: For non-gated units the gate terminal must be left open (no connection).*
*Note 3: Option -100 and -200 can't be purchased together.*

**Table I**

| **- 100 Gating** Note 2 & 3<br>Oscillator remains on at all times, all other active stages are gated on and off. | | **- 200 Gating** Note 2 & 3<br>All active stages are gated on and off | |
|---|---|---|---|
| On/Off ratio: | 40 dB, typical | On/Off ratio: | Infinite |
| Turn On/Off time: | 100 ns, maximum | Turn On/Off time: | 5 ms, maximum |
| Gate: | TTL ( "1" ON, "0" OFF ) | | |
| | | | |
| **- 002 Extended Temperature Range** | -54 to +85°C | | |

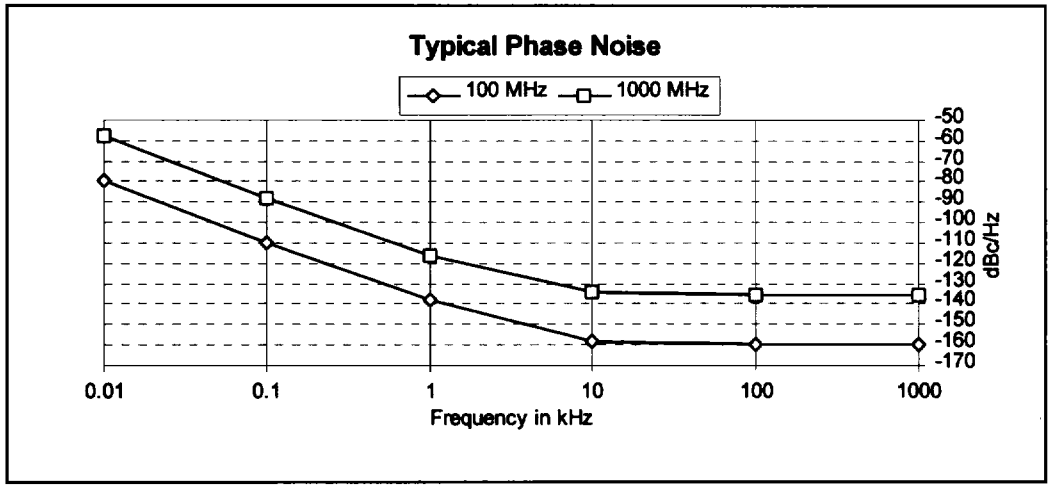


Figure 1

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| Model Number | Frequency Range | Outline Drawing |
|---|---|---|
| 10-001-9100-000 | 60 - 120 MHz | A |
| 10-101-9200-000 | 121 - 360 MHz | A |
| 10-101-9300-000 | 361 - 720 MHz | A |
| 10-101-9400-000 | 721 - 1440 MHz | A |
| 10-001-9500-000 | 60 - 120 MHz | B |
| 10-101-9600-000 | 121 - 360 MHz | B |
| 10-101-9700-000 | 361 - 720 MHz | B |
| 10-101-9800-000 | 721 - 1440 MHz | B |

### Ordering Information

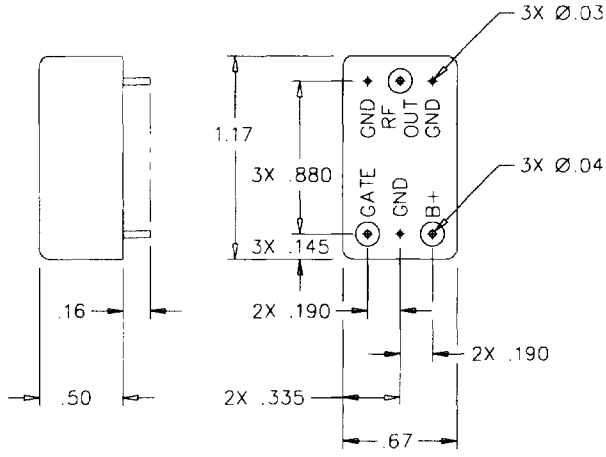
Specify the model number and the exact operating frequency in MHz to the fourth decimal place.
Example: Model 10-101-9800-002, 724.1534 MHz.

### Options

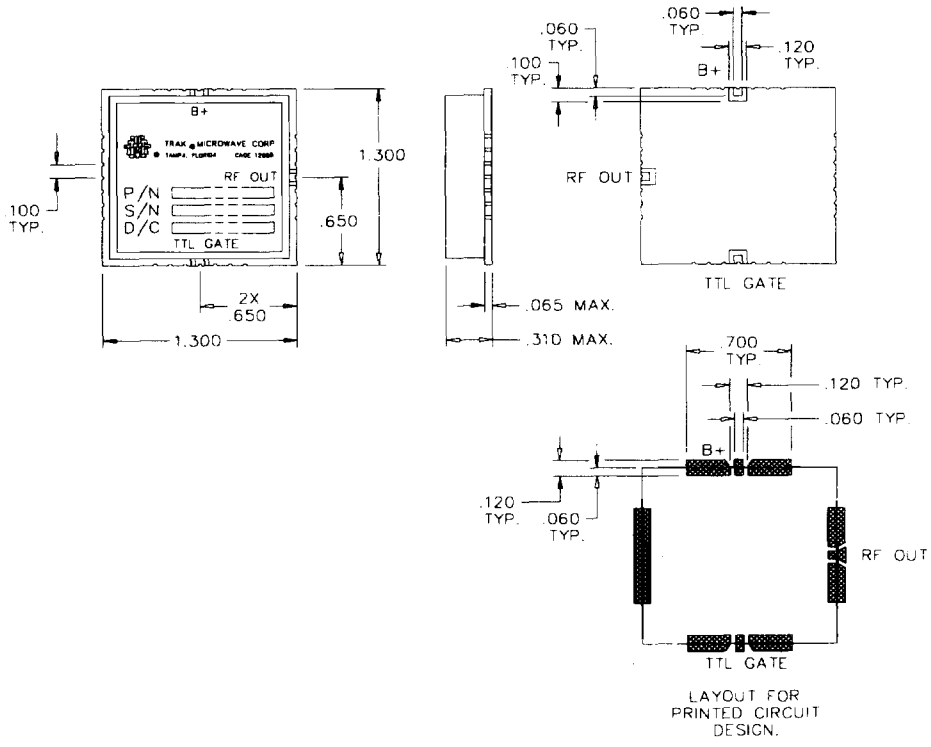
Several options are offered with these oscillators and are designated by the last three digits of the model number, with -000 indicating no options.

**Example:**

A 100 MHz oscillator with extended temperature and high speed gating would have the following model number:
10-001-9100-102, 100.0000 MHz.




Outline A




Outline B

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