TRAK MICROWAVE CORPORATION

AT-Cut Crystal Oscillators

Fundamental and Multiplied Crystal Oscillators
10-000 & 10-100 Series

These versatile AT-Cut crystal oscillators are designed for rugged applications with harsh environments. A wide range of frequencies and options are available including low spurious and harmonic products.

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:	See Table II & III
Phase Noise:	See Figure 1
Spurious:	-80 dBc, typical
Harmonics & Sub-harmonics: Note 1	
≈ +10 dBm Output: Note 2	-30 dBc, maximum
≈ +17 dBm Output: Note 2	-25 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: See model number Table III for -60 dBc harmonics & sub-harmonics.
Note 3: Option -100 and -200 can't be purchased together.

Table I

- 100 Gating Note 3 Oscillator remains on at all times, all other active stages are gated on and off.		**- 200 Gating** Note 3 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	**- 010 Frequency Trim** A mechanical adjustment for trimming the frequency to within ± 1 ppm at room temperature.	

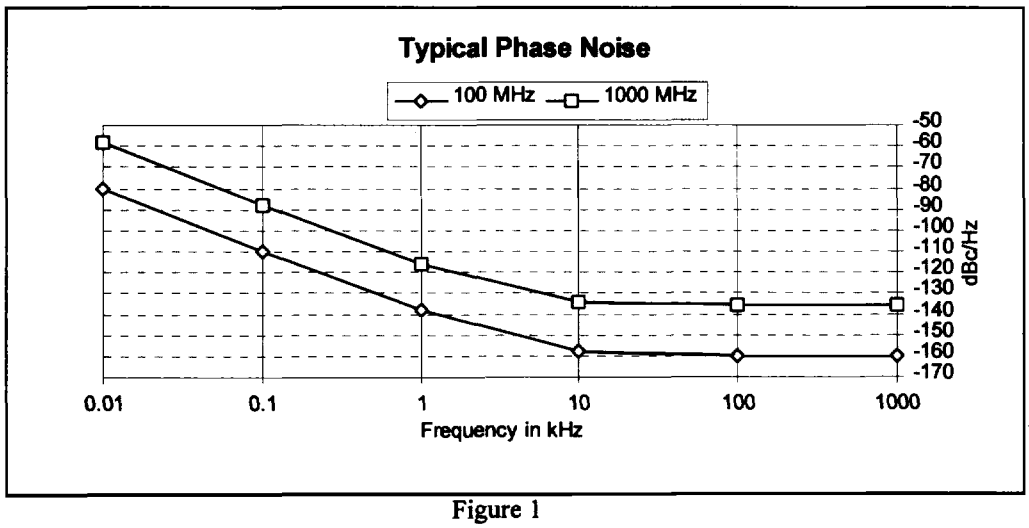

Figure 1

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Table II

Model Number	Frequency Range	Power Output	Outline Drawing
10-000-9100-000	60 - 120 MHz	+10 dBm	A
10-100-9200-000	121 - 360 MHz	+10 dBm	A
10-100-9300-000	361 - 720 MHz	+10 dBm	A
10-100-9400-000	721 - 1440 MHz	+10 dBm	A
10-000-9500-000	60 - 120 MHz	+19 dBm	A
10-100-9600-000	121 - 360 MHz	+19 dBm	A
10-100-9700-000	361 - 720 MHz	+19 dBm	A
10-100-9800-000	721 - 1440 MHz	+18 dBm	A
10-000-9101-000	60 - 120 MHz	+10 dBm	B
10-100-9201-000	121 - 360 MHz	+10 dBm	B
10-100-9301-000	361 - 720 MHz	+10 dBm	B
10-100-9401-000	721 - 1440 MHz	+10 dBm	B
10-000-9501-000	60 - 120 MHz	+19 dBm	B
10-100-9601-000	121 - 360 MHz	+19 dBm	B
10-100-9701-000	361 - 720 MHz	+19 dBm	B
10-100-9801-000	721 - 1440 MHz	+18 dBm	B

Table III
Improved Harmonics & Sub-Harmonics
-60 dBc (From DC to three times the output frequency)

Model Number	Frequency Range	Power Output	Outline Drawing
10-000-9110-000	60 - 120 MHz	+8 dBm	C
10-100-9210-000	121 - 360 MHz	+8 dBm	C
10-100-9310-000	361 - 720 MHz	+8 dBm	C
10-100-9410-000	721 - 1440 MHz	+8 dBm	C
10-000-9510-000	60 - 120 MHz	+17 dBm	C
10-100-9610-000	121 - 360 MHz	+17 dBm	C
10-100-9710-000	361 - 720 MHz	+17 dBm	C
10-100-9810-000	721 - 1440 MHz	+16 dBm	C
10-000-9111-000	60 - 120 MHz	+8 dBm	D
10-100-9211-000	121 - 360 MHz	+8 dBm	D
10-100-9311-000	361 - 720 MHz	+8 dBm	D
10-100-9411-000	721 - 1440 MHz	+8 dBm	D
10-000-9511-000	60 - 120 MHz	+17 dBm	D
10-100-9611-000	121 - 360 MHz	+17 dBm	D
10-100-9711-000	361 - 720 MHz	+17 dBm	D
10-100-9811-000	721 - 1440 MHz	+16 dBm	D

Ordering Information

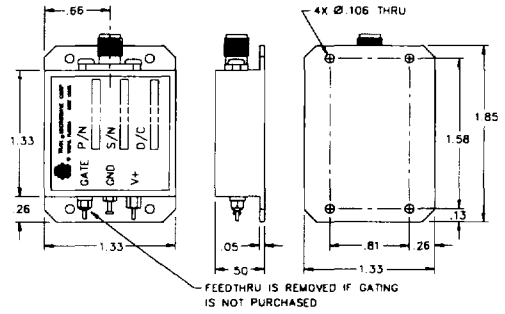
Specify the model number and the exact operating frequency in MHz to the forth decimal place. Example: Model 10-100-9811-002, 724.1534 MHz.

Options

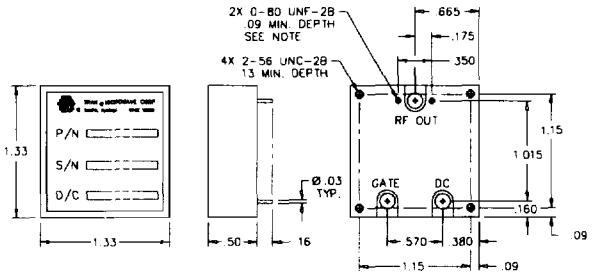
Several options are offered with these oscillators which are designated by the last three digits of the model number, with -000 indicating no options.

Example:

A 100 MHz oscillator with frequency trim, extended temperature and high speed gating would have the following model number: 10-000-9100-112, 100.0000 MHz. With only frequency trim it would be 10-000-9100-010.

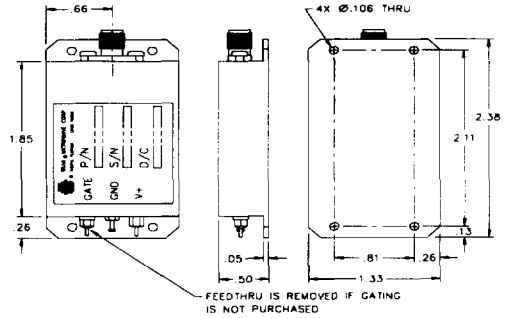


Outline A

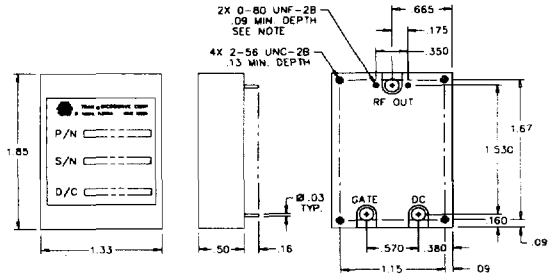


NOTE: FOR PROPER RF GROUNDING, A GROUND PLANE SHOULD BE PROVIDED UNDER THE COMPONENT AND SECURED USING THE 2 MOUNTING HOLES PROVIDED.

Outline B



Outline C



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Outline D

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