

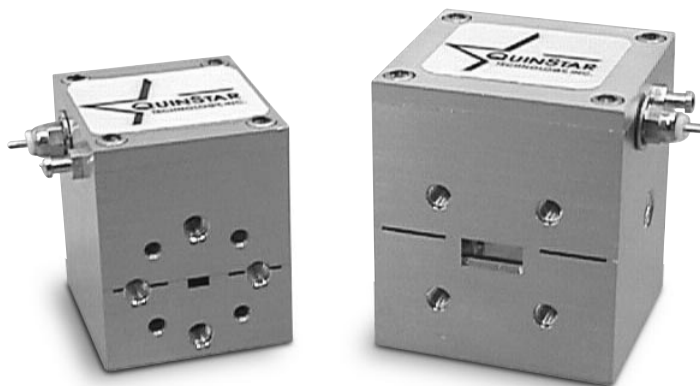


Mechanically-Tunable Gunn Oscillators

QTM

Characteristics

- ◆ High Output Power
- ◆ Excellent Frequency Stability
- ◆ Low AM and FM Noise



Product Description

QuinStar Technology's **QTM** series of **mechanically-tunable Gunn oscillators** cover the frequency range of 18 to 150 GHz in nine waveguide bands. They combine a high-Q resonant circuit with either a GaAs or InP Gunn diode. Typically, InP diodes are used for high-power applications at the higher frequencies. Each oscillator has an internal low-frequency bias circuit with an oscillation suppression network and over-voltage protection. Standard units are rated over 0 to +50° C operating temperature and incorporate a screw tuner with a reliable self-locking

feature. Gunn oscillators can be provided with broader tuning ranges, higher power levels, micrometer tuners, temperature controlled heaters, integral isolators, voltage regulators, modulators and injection-locking capability.

Series QTM oscillators provide a small bias tuning of operating frequency. Often, bias tuning can be used in place of varactor-tuning (series QTV). Phase-locked oscillators (Series QPL) and injection-locked oscillators (Series QTI) are also available.

Specifications

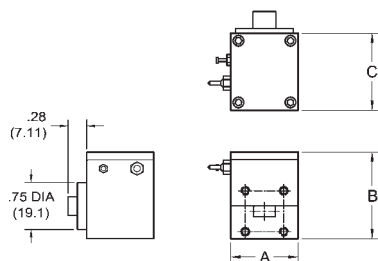
FREQUENCY BAND		K	Ka	Q	U	V	E	W	F	D
Frequency Range (GHz)		18-26.5	26.5-40	33-50	40-60	50-75	60-90	75-110	100-140	130-150
Waveguide Size		WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8	WR-6
Output Power Range ¹	(mW)	10-500	10-300	10-250	10-200	10-100	10-80	10-50	1-30	1-20
	(dBm)	10-27	10-25	10-24	10-23	10-20	10-19	10-17	0-15	0-13
DC Bias Voltage Range (typ)	GaAs (volts)	5-8	5-7	5-6	5-6	4-6	3-6	3-6	---	---
	InP (volts)	---	---	6-11	6-10	6-10	8-10	8-10	8-10	8-10
DC Bias Current Range (typ)	GaAs (Amp)	0.6-2.0	0.6-2.6	0.6-2.0	0.6-2.0	0.6-1.5	0.6-1.5	0.6-1.5	---	---
	InP (Amp)	---	---	0.3	0.3	0.3	0.25	0.25	0.25	0.25
Mechanical Tuning Range (GHz) ²		0.1-4	0.1-5	0.1-5	0.1-5	0.1-5	0.1-8	0.1-10	0.1-2	0.1-2
Frequency Stability (MHz/°C typ)		-1.5	-2.0	-2.5	-3.0	-4.0	-4.0	-5.0	-6.0	-6.0
Power Stability (dB/°C typ)		-0.02	-0.02	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Operating Temperature		0 to 50°C								

Other waveguide sizes are available.

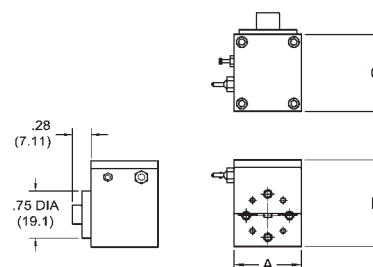
¹ Higher power outputs are available at selected frequencies.

² Standard units have a minimum tuning range of ± 250 MHz. Broader mechanical tuning ranges are available.

Outline Drawings/Mechanical Specifications



WR-42 and WR-28



WR-22 through WR-6

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	OUTLINE DIMENSIONS, inches/mm ¹		
			A	B	C
K	WR-42	UG-595/U	1.13/28.7	1.38/35.1	1.00/25.4
Ka	WR-28	UG-599/U	1.13/28.7	1.38/35.1	1.00/25.4
Q	WR-22	UG-383/U	1.13/28.7	1.38/35.1	1.00/25.4
U	WR-19	UG-383/U	1.13/28.7	1.38/35.1	1.00/25.4
V	WR-15	UG-385/U	0.88/22.4	1.13/28.7	1.00/25.4
E	WR-12	UG-387/U	0.88/22.4	1.13/28.7	1.00/25.4
W	WR-10	UG-387/U	0.88/22.4	1.13/28.7	1.00/25.4
F	WR-8	UG-387/U	0.88/22.4	1.13/28.7	1.00/25.4
D	WR-6	UG-387/U	0.88/22.4	1.13/28.7	1.00/25.4

¹ Consult factory for exact outline dimensions if options are specified.

Ordering Information

Model Number **QTM -**

AB CD E F



Please specify exact center frequency, tuning range and options when ordering.

center frequency (rounded to nearest GHz)

(1A = 100-109 GHz, 1B = 110-119 GHz, etc.)

power output in dBm

options

waveguide band designator

K = K-band
A = Ka-band
Q = Q-band
U = U-band
V = V-band
E = E-band
W = W-band
F = F-band
D = D-band

H = heater *
I = isolator *
B = heater and isolator *
R = compact regulator
(see Gunn Regulators/Modulators, QCR)
C = heater, isolator and compact regulator *

M = micrometer tuner
A = full feature regulator
(see Gunn Regulators/Modulators, QCR)
0 = no option
S = special combination of preceding options (please specify)
Z = custom

* Addition of heater and isolator options reduce output power.