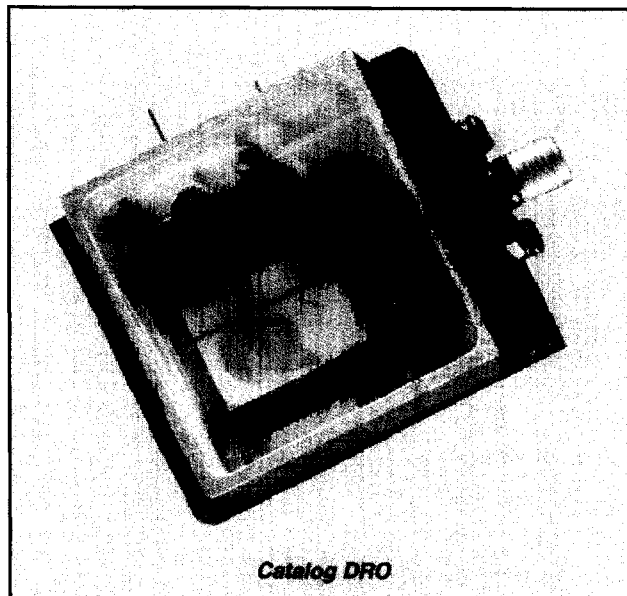


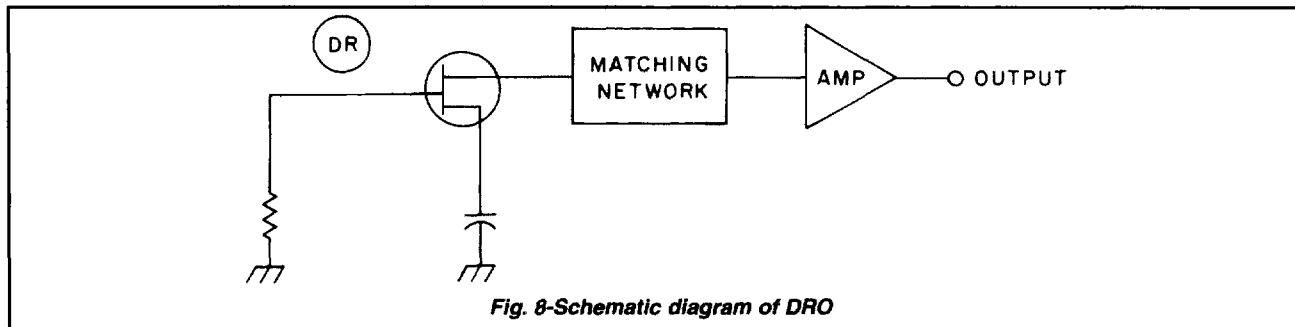
## Catalog DROs

Over the past decade, the DRO has become the oscillator of choice for fixed-frequency applications requiring high stability and low phase noise. General Microwave offers a high-performance line of DROs in the 5-18 GHz frequency range featuring 1.5 ppm/°C frequency stability over a wide temperature range. A high-Q temperature-stable dielectric resonator is used as the key element in the passive resonant circuit.

The dielectric resonator is weakly coupled to maximize the loaded Q of the circuit, thereby minimizing the frequency variation over temperature, phase noise, and frequency pulling and pushing. A series feedback topology is chosen for best overall performance, as shown in Fig. 8. GaAs FETs are used as the active device in the 8-18 GHz range, and silicon bipolar transistors in the 5-8 GHz range. Buffer amplifiers and voltage regulators are included as standard features to further reduce the frequency variations due to variations in the load and supply voltages, respectively. General Microwave's "M" series of DROs includes a mechanical tuning element which permits the user to vary the frequency of the DRO over a narrow band. Complete specifications are provided on page 182.



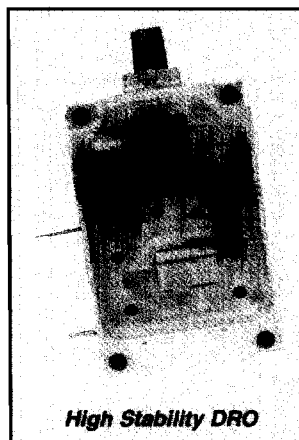
**Catalog DRO**



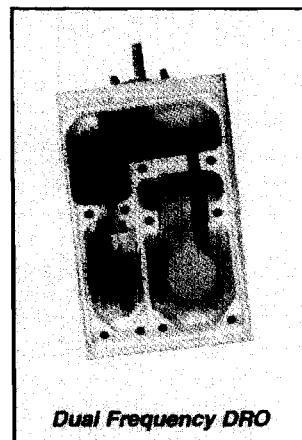
**Fig. 8-Schematic diagram of DRO**

## Custom DROs

Based on General Microwave's catalog line, custom DROs have been developed for a variety of customers. A highly stable DRO which exhibits very little degradation in phase noise under vibration and a dual frequency DRO are shown in photos to the right. Electronically tunable DROs for X and Ku Band applications have also been developed. Please consult the factory for individual requirements.



**High Stability DRO**



**Dual Frequency DRO**



## Catalog DRO Specifications

PARAMETER	MODEL					
	F5080	M5080	F5120	M5120	F5180	M5180
TYPE	Fixed Tuned	Mechanically Tuned	Fixed Tuned	Mechanically Tuned	Fixed Tuned	Mechanically Tuned
FREQUENCY RANGE (GHz)	5.000-7.999		8.000-11.999		12.000-18.000	
MECHANICALLY TUNING RANGE, min (MHz)	None	±5	None	±10	None	±15
RF POWER OUTPUT, min (dBm)	+13					
Variation, incl. temp. and freq. max(dB)	±1.0	±1.5	±1.0	±1.5	±1.0	±1.5
PHASE NOISE (dBc/Hz)						
@ 10 kHz offset typ	-105		-90		-85	
@ 100 kHz offset typ	-130		-120		-115	
2nd HARMONIC, max (dBc)	-25		-25		-25	
SPURIOUS, max (dBc)	-70		-70		-70	
TEMPERATURE STABILITY, max (PPm/°C)	1	2	1	2	1	2
PULLING, VSWR 1.5:1 typ (MHz)	0.05	0.075	0.1	0.15	0.15	0.2
PUSHING, max (kHz/V)	2			4		
CONNECTORS						
Power Supply	Solder terminal					
RF Output	SMA female					
POWER SUPPLY REQUIREMENT						
Voltage (Vdc)	+15 to +18		+12 to +18			
Current, max (mA)	150		125			
ENVIRONMENTAL <sup>(1)</sup>						
Operating Temperature (°C)	-54 to +85					
Storage Temperature (°C)	-54 to +125					
MECHANICAL DIMENSIONS						
Inches	2.09x1.54x0.97	2.09x1.54x1.13	1.77x1.40x0.75	1.77x1.40x0.91	1.54x1.18x0.62	1.54x1.18x0.77
Millimeters	53,1x39,1x24,6	53,1x39,1x28,7	45,0x35,6x19,1	45,0x35,6x23,1	39,1x30,0x15,7	39,1x30,0x19,6

(1) Hermetically sealed.

### HOW TO SPECIFY

- Select mechanically tuned (M) or fixed tuned (F) DRO
- Specify Model, i.e., F5080 is a FIXED TUNED DRO
- Specify desired operating frequency (can be specified to a resolution of 1 MHz, i.e., 6038 MHz)

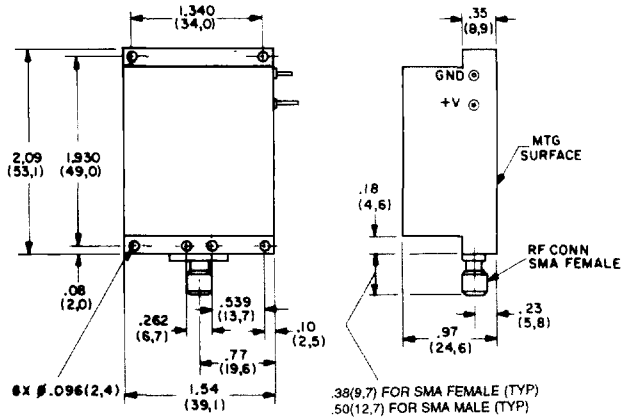
### AVAILABLE OPTIONS

Option No.	Description
49A	High Rel screening (See Table 1, page 170.)



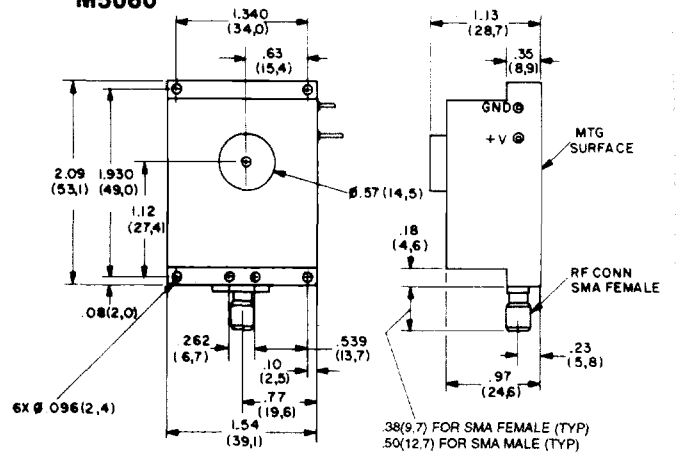
DIMENSIONS AND WEIGHTS

F5080



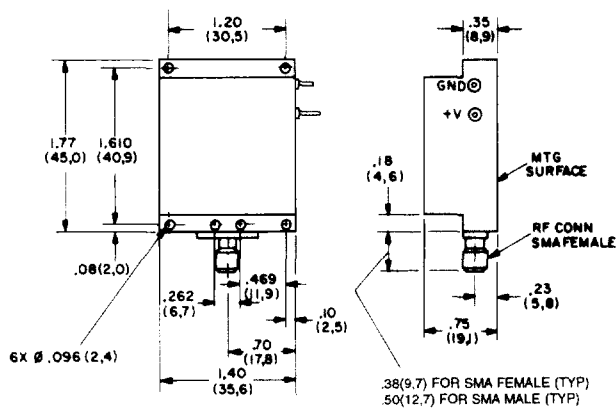
Wt: 2.75 oz. (78 gm) approx.

M5080



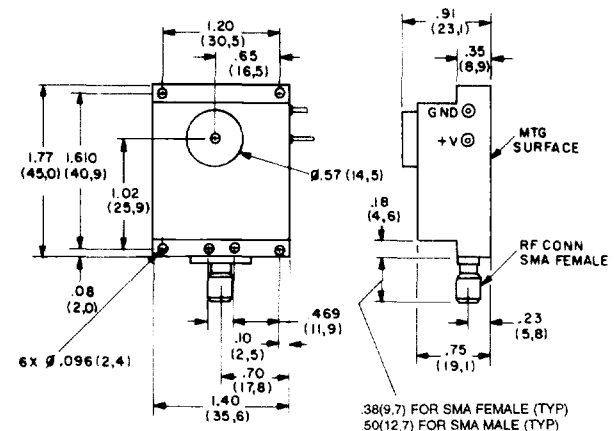
Wt: 2.93 oz. (83 gm) approx.

F5120



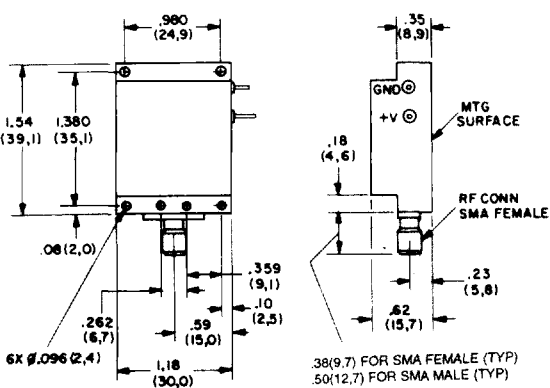
Wt: 1.94 oz. (55 gm) approx.

M5120



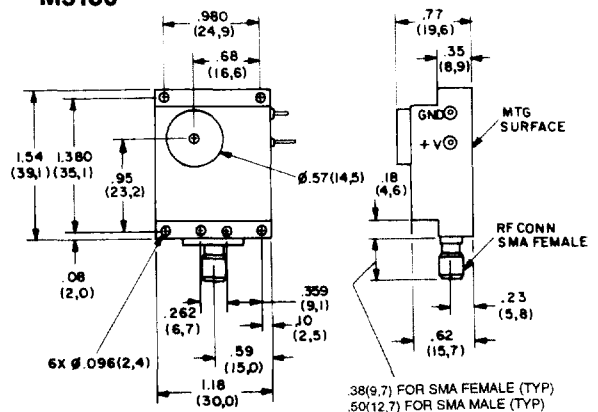
Wt: 2.12 oz. (60 gm) approx.

F5180



Wt: 1.3 oz. (37 gm) approx.

M5180



Wt: 1.48 oz. (42 gm) approx.

Dimensional Tolerances, unless otherwise indicated: .xx ± .02; .xxx ± .005

