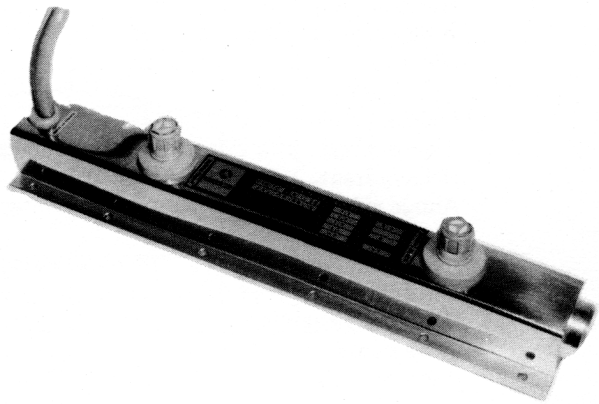
F4017D
TRAVELING WAVE TUBE

The F4017D traveling wave tube is a broadband amplifier capable of providing a minimum saturated output power of 7 W from 1.7 to 2.7 GHz. The saturation gain is more than 30 dB and the small signal gain is more than 35 dB.

Integral periodic permanent magnet focusing reduces the stray magnetic field and saves weight.

The F4017D is cooled by conduction. Because of its small size, light weight and rugged construction, this tube is ideal for use in mobile radio link communications systems.



GENERAL CHARACTERISTICS

Electrical (1)

	min.	max.	
Frequency	1.7	2.7	GHz
Heater voltage	6.3		V
Heater current	1.1	1.5	A
Output power	7	–	W
Gain saturation	30	–	dB
Gain small signal	35	–	dB
Helix voltage	1.5	1.9	kV
Helix current	–	3	mA
Anode voltage	0.8	1.5	kV
Anode current	–1	+3	mA
Collector voltage	1.5	1.9	kV
Cathode current	–	53	mA

Mechanical

Operating position	any
Weight (approx.)	1.7 kg
RF connections	coaxial, N type, UG 58 A/U
Supply connections	flexible leads
Cooling	conduction

(1) All voltages are referred to the cathode.

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ABSOLUTE RATINGS

(non simultaneous values)

	min.	max.	
Heater voltage	6.0	6.6	V
Heater surge current	–	3.0	A
Warm-up time (1)	3	–	mn
Ambient temperature	–	60	°C
Vibrations	–	0.5 mm from 10 to 55	Hz
		0.05 mm from 55 to 100	Hz
Shocks	–	40 g - 6 ms	
Helix voltage nominal voltage (2)	–200	+200	V
Helix current	–	3.5	mA
Anode voltage nominal voltage (2)	–	+200	V
Anode current	–	3	mA
Collector voltage nominal voltage (2)	–200	+200	V
Cathode current	–	55	mA
Collector dissipation	–	100	W
Drive power	–	100	mW
Pressure	0.6	2	bar (3)
Load VSWR	–	2:1	

(1) Not necessary if the supply is cut off for less than 5 seconds.
(2) Indicated on the Test Data Sheet of each tube.
(3) 1 bar = approx. 15 psi.

TYPICAL OPERATION

Frequency	2.2	GHz
Heater voltage	6.3	V
Heater current	1.3	A
Drive power	7	mW
Output power, saturation	10	W
Gain, saturation	32	dB
Helix voltage	1.76	kV
Helix current	0.9	mA
Anode voltage	1.14	kV
Anode current	0	mA
Cathode current	43	mA
Collector voltage	1.76	kV
Collector current	42	mA

OPERATING INSTRUCTIONS

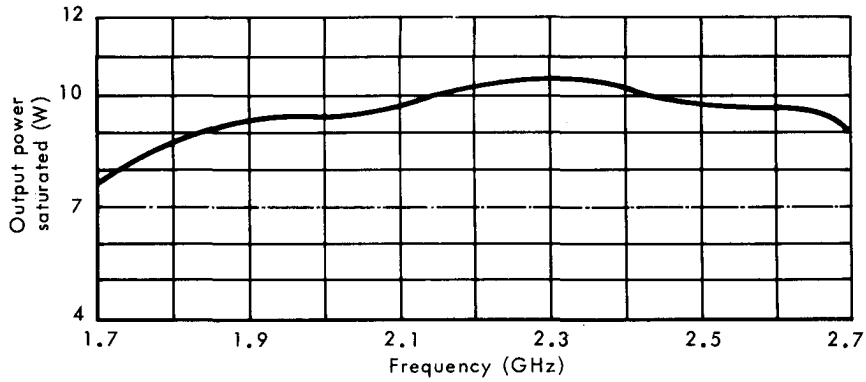
Application of voltages

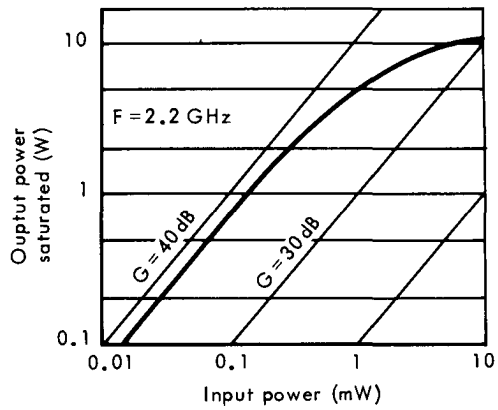
Voltages should be applied in the following order :

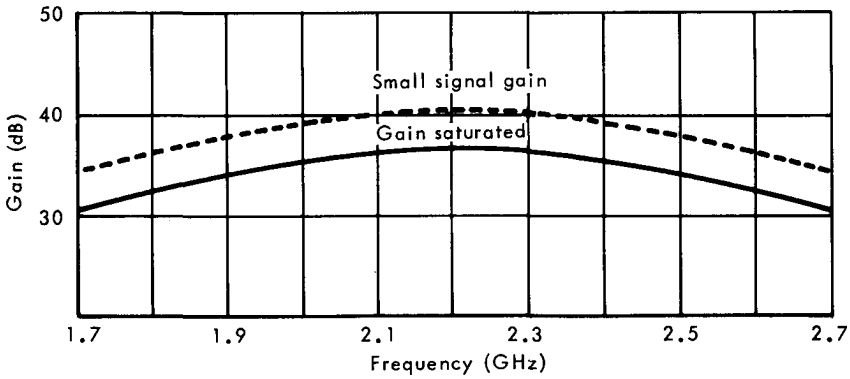
- Heater, allow three minutes for cathode warm-up,
- Grid,
- Helix,
- Collector,
- Anode.

Anode voltage should not be applied if other voltages are applied or if the thermal safety relay is open.

CHARACTERISTIC CURVES







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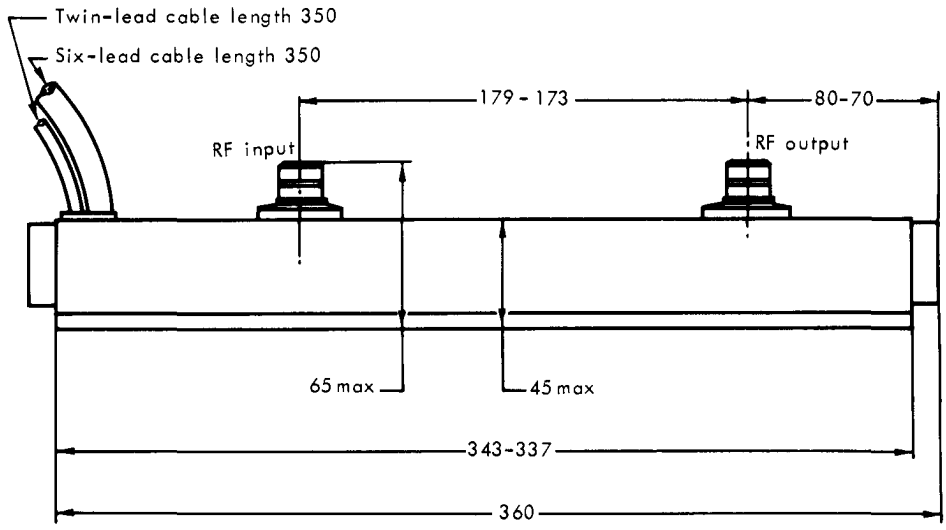
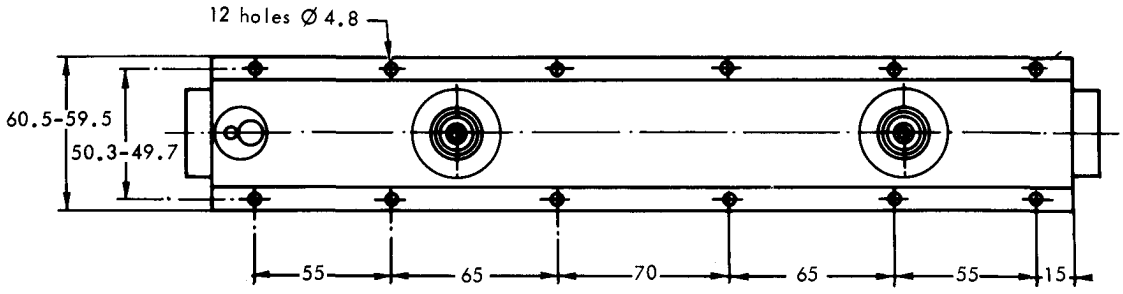
OUTLINE DRAWING





CONNECTIONS	
Blue	Anode
Orange	Helix
Red	Collector-ground
Brown	Heater
Yellow	Heater-cathode
Green	Wehnelt
White	Protection circuit
Grey	Protection circuit

Dimensions in mm.