REFLEX KLYSTRON

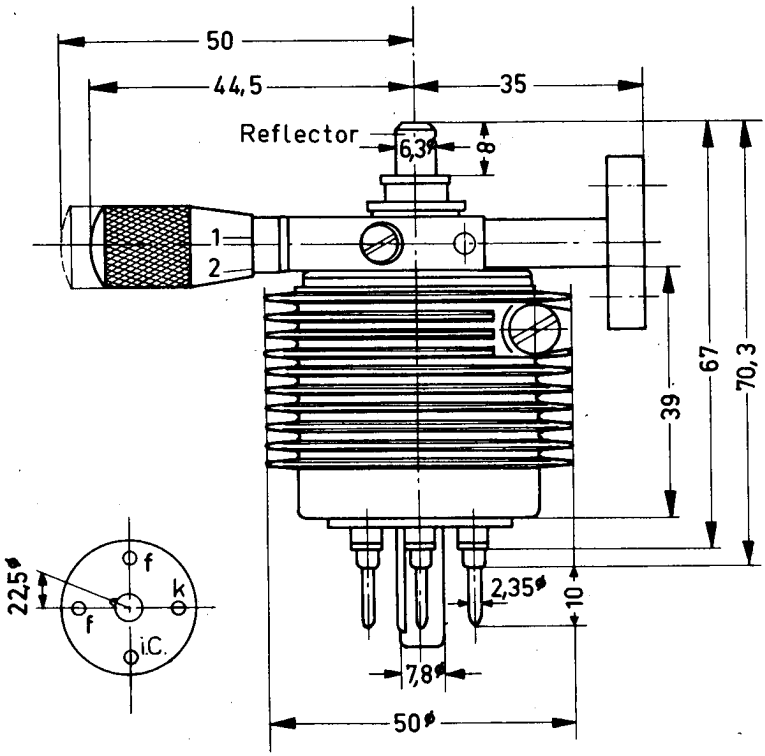
f = 5. 775 to 5. 925 kMc

RK 6

Design and Application

Preliminary Data

Mechanically tunable reflex klystron specially designed for telecommunication systems as oscillator of high frequency stability and as frequency modulator with high-linearity modulation characteristic.
An outstanding feature of the RK 6 is that no additional linearization steps are necessary.



Dimensions in mm

Base:	Octal
Weight:	approx. 375 gm net, approx. 1550 gm gross
Dimensions of package:	210 x 210 x 210 mm
Waveguide:	F 70, DIN 43702, 34.85 x 5 mm
Flange:	N 70, DIN 47303

Heating

Heater voltage	=	6.3 ± 2 %	V (1)
Heater current	≈	1	A

indirect by AC, parallel supply
MK-dispenser cathode

Capacitance

Reflector to resonator	=	4.2	µµf

Typical Operation

Mode of waveguide = 2, f = 5.85 kMc

Resonator voltage	=	400	Vdc
Reflector voltage	=	-90	Vdc (2)
Resonator current	=	60	mAdc
Power output	=	175	mW
Modulation sensitivity	=	3	Mc/V (3)
Modulation distortion	<	1	% (3)(4)
Electronic bandwidth	=	60	Mc (5)
Temperature coefficient	≈	100	kc/°C

(1) If the maximum variation of the heater voltage exceeds the absolute limits of ± 2 %, the operating performance of the tube will be impaired and its life shortened.

(2) Adjusted to maximum power output

(3) For connection of a load with a reflection coefficient < 2 %.

(4) Relative variation of modulation sensitivity at frequency modulation with ± 5 Mc frequency variation.

(5) Frequency range between half-power points due to varying the reflector voltage.

Maximum Ratings (absolute values)

Resonator voltage	max	425	Vdc
Resonator dissipation	max	30	W
Reflector voltage	min	-10	Vdc
Reflector voltage	max	-500	Vdc
Cathode current	max	70	mAdc
Bulb temperature	max	150	°C

Operating Instructions

The RK 6 is continuously tunable in the range from 5.775 to 5.925 kMc. The resonator is connected to the metal bulb of the tube. The heater should be connected to cathode potential.

Mounting

The klystron mounts on the waveguide flange and can be operated in any position. The voltage leads must be flexible.

Cooling

At ambient temperatures up to a maximum of 50°C the RK 6 may be operated without special cooling, provided that a natural air circulation around the tube is ensured. Otherwise, moderate air cooling will be required. It is important that the admissible maximum temperature of 150° C (absolute limit) is not exceeded at any point on the tube surface.

Starting

When starting the klystron, the voltages should be applied either in the following sequence or all at the same time.

1. Heater voltage
2. Reflector voltage
3. Resonator voltage

Disconnection should be effected in the reverse sequence or all at the same time.