



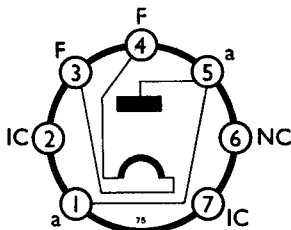
VHF NOISE GENERATOR DIODE TUNGSTEN FILAMENT

A2087

ISSUE 2
AUGUST, 1959

The A2087 is a commercial equivalent of the CV2171.

BASE CONNECTIONS AND VALVE DIMENSIONS



View from underside
of base.

Base : B7G
Bulb : Tubular
Max. overall length : 55 mm.
Max. seated length : 49 mm.
Max. diameter : 19 mm.

FILAMENT

$*V_f$ (range)	0-4.3	V
I_f (at $V_f=4.3V$)	0.6 (approx)	A

*The saturated anode current is regulated by variation of the filament voltage. With a 6.3V filament supply, a variable series resistor of 10Ω max. will be suitable for most purposes.

MAXIMUM RATINGS

V_a	200	V
I_a	20	mA
P_a	2	W
V_f	4.8	V

CHARACTERISTICS

V_a	40	V
$I_a(\text{sat})$	7 (approx)	mA
V_f	3.7 (approx)	V

CAPACITANCES (measured on a cold valve fitted with external shield)

c_{a-f} : 1.35pF (approx) $*c_{a-all}$: 2.7pF (approx)

*Includes capacitance to filament, pins 2 & 7 and external shield.

TYPICAL OPERATION

Noise Diode for use up to 220Mc/s

V_a	100	100	100	V
$I_{a(sat)}$ (range)	0—20	0—20	0—20	mA
V_f (range)(approx)	0—4·3	0—4·3	0—4·3	V
* R_s	50	70	300	Ω
*Noise factor measurement (range)(approx)	0—13	0—14·5	0—20·8	dB

*When measuring receiver noise factor, using with the diode a source resistance R_s (to match the receiver input) and the technique of setting the value of $I_{a(sat)}$ to double the noise output power to the receiver detector, the range of noise factor that can be measured with a given value of R_s is as shown.

Then, noise factor = $10 \log_{10} (20.I_a.R_s)$ dB,
where I_a is the diode saturated anode current in amperes and R_s is the source resistance in ohms.

INSTALLATION

The valve can be mounted in any position.

A screening canister, which also serves as a retainer, is necessary.

Free air circulation around the canister is preferable. The temperature of the hottest part of the bulb must not exceed 200°C.

This valve has been designed to give a life of 1000—2000 hours operating at a saturated current of 5mA. With a saturated current of 20mA the life is approximately 100 hours.

No correction of the noise factor for electron transit time when measured as above is necessary for use up to 220Mc/s.

