

# TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS **H**

Single-ended short-wave triode for use as low power oscillator

**EC 52**

## HEATER

$V_h$  6.3 V  $I_h$  0.43 A

## CAPACITANCES

|            |      |            |
|------------|------|------------|
| $C_{g-k}$  | 250  | V          |
| $C_{a-k}$  | -2.6 | V          |
| $C_{a-g1}$ | 10   | mA         |
|            | 6.5  | mA/V       |
|            | 60   |            |
|            | 9.2  | K $\Omega$ |
|            | 310  | $\Omega$   |

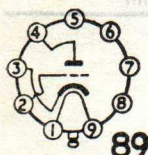
## CHARACTERISTICS

|          |      |            |
|----------|------|------------|
| $V_a$    | 250  | V          |
| $V_{g1}$ | -2.6 | V          |
| $I_a$    | 10   | mA         |
| $g_m$    | 6.5  | mA/V       |
| $\mu$    | 60   |            |
| $r_a$    | 9.2  | K $\Omega$ |
| $R_{eq}$ | 310  | $\Omega$   |

## LIMITING VALUES

|                                   |     |      |
|-----------------------------------|-----|------|
| $V_a$ max.                        | 400 | V    |
| $P_a$ max.                        | 7.5 | W    |
| Limiting frequency of oscillation | 400 | Mc/s |

Note.—At frequencies up to 300 Mc/s the inductance of the heater leads is sufficiently low to allow the heater pins to be earthed capacitatively



BASE :  
B9G

DIMENSIONS :  
L=78 mm  
D=38 mm

Miniature triode for use as low power oscillator at frequencies up to 600 Mc/s

**EC 53**

## HEATER

$V_h$  6.3 V  $I_h$  0.25 A

For circuits  
see page 129

## CAPACITANCES

|           |      |            |
|-----------|------|------------|
| $C_{g-k}$ | 1.3  | $\mu\mu F$ |
| $C_{a-k}$ | 0.13 | $\mu\mu F$ |
| $C_{a-g}$ | 1.3  | $\mu\mu F$ |

## CHARACTERISTICS

|               |      |            |
|---------------|------|------------|
| $V_a$         | 200  | V          |
| $V_g$         | -3.3 | V          |
| $I_a$         | 7.5  | mA         |
| $g_m$         | 2.9  | mA/V       |
| $\mu$         | 33   |            |
| $r_a$         | 11.4 | K $\Omega$ |
| $g_m (V_g=0)$ | 4.0  | mA/V       |



# 4 VALVE DATA PREFERRED TYPES

## H TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS

### EC 53 (contd.)

#### OPERATING CONDITIONS

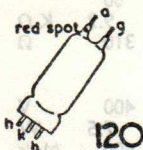
As power oscillator up to 400 Mc/s

| f<br>(Mc/s) | V <sub>a</sub><br>(V) | I <sub>a</sub><br>(mA) | I <sub>g</sub><br>(mA) | P <sub>out</sub><br>W | η<br>% | Refer to<br>circuit |
|-------------|-----------------------|------------------------|------------------------|-----------------------|--------|---------------------|
| 110         | 250                   | 14.5                   | 5                      | 1.3                   | 35     | } see Fig. 1        |
| 165         | 250                   | 14.5                   | 5                      | 1.2                   | 33     |                     |
| 210         | 250                   | 12.5                   | 3.6                    | 0.8                   | 26     |                     |
| 285         | 250                   | 12.5                   | 3.6                    | 0.5                   | 16     | } see Fig. 2        |
| 335         | 200                   | 12.5                   | 3.6                    | 0.35                  | 14     |                     |
| 400         | 200                   | 12.5                   | 3.6                    | 0.3                   | 12     |                     |

Note.—The input power is reduced at the higher frequencies in order to keep within the rated maximum anode dissipation

#### LIMITING VALUES

|                          |     |      |
|--------------------------|-----|------|
| V <sub>a</sub> max.      | 250 | V    |
| p <sub>a</sub> max.      | 2.5 | W    |
| I <sub>k</sub> max.      | 20  | mA   |
| R <sub>g-k</sub> max.    | 0.5 | M Ω  |
| V <sub>h-k</sub> max.    | 40  | V    |
| Max. operating frequency | 600 | Mc/s |



BASE :  
B3G

DIMENSIONS :  
L=54 mm  
D=16 mm

### EC 91

#### Miniature grounded-grid triode

##### HEATER

V<sub>h</sub> 6.3 V I<sub>h</sub> 0.3 A

##### CAPACITANCES

(with external shield connected to grid)

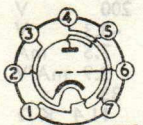
|                    |      |     |
|--------------------|------|-----|
| C <sub>a-g</sub>   | 3.8  | μμF |
| C <sub>a-k+h</sub> | <0.2 | μμF |
| C <sub>g-k+h</sub> | 5.25 | μμF |

#### OPERATING CONDITIONS

|                 |      |      |
|-----------------|------|------|
| V <sub>a</sub>  | 250  | V    |
| V <sub>g</sub>  | -1.5 | V    |
| R <sub>k</sub>  | 150  | Ω    |
| I <sub>a</sub>  | 10   | mA   |
| g <sub>m</sub>  | 8.5  | mA/V |
| μ               | 100  |      |
| r <sub>a</sub>  | 12   | K Ω  |
| R <sub>eq</sub> | 400  | Ω    |

#### LIMITING VALUES

|                          |     |      |
|--------------------------|-----|------|
| V <sub>a</sub> max.      | 250 | V    |
| p <sub>a</sub> max.      | 2.5 | W    |
| I <sub>k</sub> max.      | 15  | mA   |
| V <sub>h-k</sub> max.    | 150 | V    |
| V <sub>g-k</sub> max.    | 100 | V    |
| Max. operating frequency | 250 | Mc/s |



BASE :  
B7G

DIMENSIONS :  
L=54 mm  
D=19 mm

# TRANSMITTING VALVES AND MERCURY VAPOUR RECTIFIERS

## COIL DATA

LENGTH 1"  
DIAMETER  $\frac{1}{2}$ "  
4 TURNS FOR 110-165 Mc/s.  
3 TURNS FOR 165-210 Mc/s.

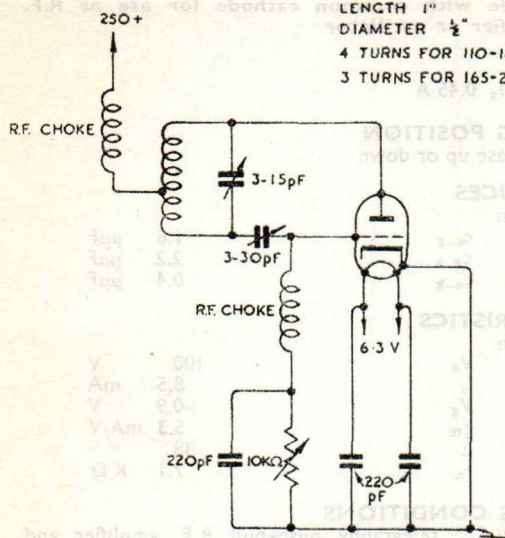


Fig. 1.

EC 53 as Low Power  
Oscillator at Frequencies  
between 110 and 210 Mc/s

## LINE DATA

LINE SEPARATION,  $d = 2.8$  cm  
280-350 Mc/s.  $l = 10$  cm. approx.  
400-500 Mc/s.  $l = 5$  cm. approx.  
600 Mc/s.  $l = 2$  cm. approx.

Fig. 2.

EC 53 as Low Power  
Oscillator at Frequencies  
of 280 Mc/s and over

