

# 4 VALVE DATA PREFERRED TYPES

## B FREQUENCY CHANGERS

### CCH 35

Triode hexode with variable-mu characteristics

#### HEATER

$V_h$  7.0 V  $I_h$  0.2 A Suitable for series or parallel operation

For operating data see Type ECH35, page 48. Except for the heater voltage and current, the ECH35 and the CCH35 are identical

### DK 32

Heptode with variable-mu characteristics

#### FILAMENT

$V_f$  1.4 V  $I_f$  0.05 A Suitable for D.C. operation only

#### CAPACITANCES

|            |                  |              |                  |
|------------|------------------|--------------|------------------|
| $C_{a-g4}$ | $< 0.5 \mu\mu F$ | $C_{g4-all}$ | 7.0 $\mu\mu F$   |
| Out        | 10.0 $\mu\mu F$  | $C_{g1-g4}$  | $< 0.2 \mu\mu F$ |

#### OPERATING CONDITIONS

(See Fig. 2, page 56)

|             |     |     |            |
|-------------|-----|-----|------------|
| $V_a$       | 90  | 90  | V          |
| $V_{g3+g5}$ | 45  | 45  | V          |
| $V_{g2}$    | 90  | 90  | V          |
| $V_{g4}$    | 0   | -3  | V          |
| $I_a$       | 0.6 | —   | mA         |
| $I_{g3+g5}$ | 0.7 | —   | mA         |
| $I_{g2}$    | 1.2 | —   | mA         |
| $I_{g1}$    | 35  | —   | $\mu A$    |
| $I_k$       | 2.5 | —   | mA         |
| $R_{g1}$    | 200 | 200 | K $\Omega$ |
| $r_a$       | 0.6 | —   | M $\Omega$ |
| $g_o$       | 250 | 5   | $\mu A/V$  |

Characteristics of Oscillator Section ( $V_{osc}=0$ )

|             |     |           |
|-------------|-----|-----------|
| $V_a$       | 90  | V         |
| $V_{g3+g5}$ | 45  | V         |
| $V_{g4}$    | 0   | V         |
| $V_{g2}$    | 90  | V         |
| $V_{g1}$    | 0   | V         |
| $g_m$       | 550 | $\mu A/V$ |

#### LIMITING VALUES

|                     |     |            |
|---------------------|-----|------------|
| $V_a$ max.          | 110 | V          |
| $V_{g3+g5(b)}$ max. | 110 | V          |
| $V_{g2+g5}$ max.    | 60  | V          |
| $V_{g2}$ max.       | 110 | V          |
| $I_k$ max.          | 4   | mA         |
| $R_{g1-t.}$ min.    | 1   | M $\Omega$ |

BASE:  
Octal

DIMENSIONS:

L=102 mm  
D=30 mm



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# 4 VALVE DATA PREFERRED TYPES

## B FREQUENCY CHANGERS

### UCH 42 (contd.)

#### Triode Section

|                    |     |     |     |            |
|--------------------|-----|-----|-----|------------|
| $V_b$              | 100 | 170 | 200 | V          |
| $R_{at}$           | 22  | 22  | 22  | K $\Omega$ |
| $I_a$              | 2.0 | 3.5 | 4.2 | mA         |
| $R_{gt+g3}$        | 47  | 47  | 47  | K $\Omega$ |
| $I_{gt+g3}$        | 100 | 170 | 200 | $\mu$ A    |
| $V_{osc (r.m.s.)}$ | 4.7 | 8.0 | 9.4 | V approx.  |

The effective mutual conductance of the triode section under the above conditions is approximately 0.5 mA/V

#### LIMITING VALUES

| Heptode Section                                 | Triode Section |
|-------------------------------------------------|----------------|
| $V_a (b) \text{ max.}$                          | 550 V          |
| $V_a \text{ max.}$                              | 250 V          |
| $p_a \text{ max.}$                              | 0.8 W          |
| $V_{g2+g4} (b) \text{ max.}$                    | 550 V          |
| $V_{g2+g4} \text{ max.}$                        | 125 V          |
| $p_{g2+g4} \text{ max.}$                        | 0.3 W          |
| $I_k \text{ max.}$                              | 10 mA          |
| $V_{b-k} \text{ max.}$                          | 150 V          |
| $V_a (b) \text{ max.}$                          | 550 V          |
| $V_a \text{ max.}$                              | 175 V          |
| $p_a \text{ max.}$                              | 0.9 W          |
| $V_{gt} \text{ max. (} I_{gt}=0.3 \mu\text{A)}$ | -1.3 V         |
| $I_k \text{ max.}$                              | 5.5 mA         |

BASE :  
B8A

DIMENSIONS :  
L=60 mm  
D=22 mm

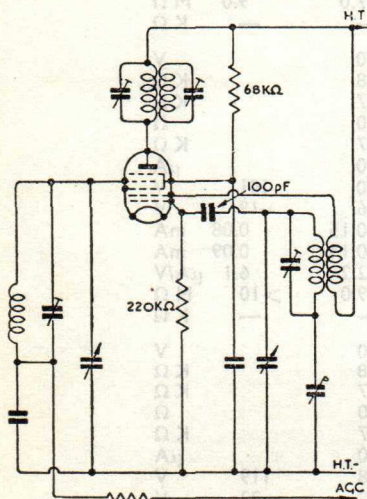
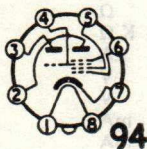


Fig. 2

Battery-operated Frequency Changer  
Circuit using DK32 Heptode

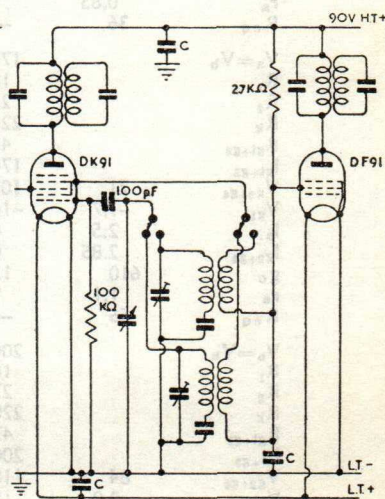


Fig. 3

Medium and Long Wave Battery-operated  
Frequency Changer Circuit  
using DK91 Heptode