# PHILIPS ECH83

TRIODE-HEPTODE primarily intended for use as mixer in car-radio sets. The tube can be directly operated from a 6 V or 12 V storage battery

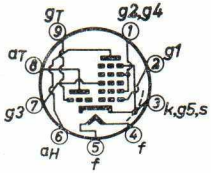
TRIODE-HEPTODE destinée en premier lieu pour l'utilisation comme tube mélangeur dans récepteurs autoradio. On peut faire fonctionner le tube directement d'un accumulateur de 6 V ou de 12 V

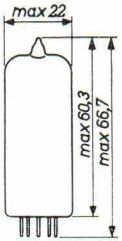
TRIODE-HEPTODE zunächst bestimmt zur Verwendung als Mischröhre in Autoempfängern. Die Röhre kann direkt von einer 6 V- oder 12 V-Batterie betrieben werden

Heating : indirect. Parallel or series supply
Chauffage: indirect. Alimentation série ou parallèle
Heizung : indirekt. Serien- oder Parallelspeisung

$V_f$ = 6,3 V
$I_f$ = 300 mA

Dimensions in mm
Dimensions en mm
Abmessungen in mm



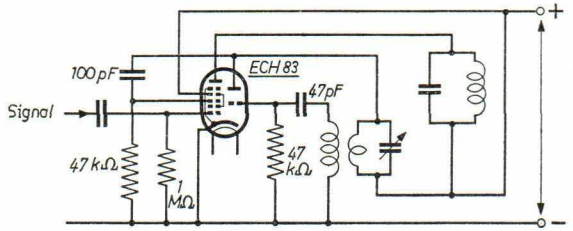

Base, culot, Sockel: NOVAL

| Capacitances<br>Capacités<br>Kapazitäten | Heptode section<br>Partie heptode<br>Heptodenteil | Triode section<br>Partie triode<br>Triodenteil |
|---|---|---|
| | $C_a$ = 7,9 pF | $C_a$ = 2,1 pF |
| | $C_{g1}$ = 4,8 pF | $C_g$ = 2,6 pF |
| | $C_{ag1}$ < 0,012 pF | $C_{ag}$ = 1,0 pF |
| | $C_{g3}$ = 6,0 pF | |
| | $C_{g1g3}$ < 0,3 pF | |

Between heptode and triode section
Entre la partie heptode et triode
Zwischen Heptoden- und Triodenteil

| | |
|---|---|
| $C_{aH\text{-}aT}$ = 0,20 pF | $C_{g1H\text{-}gT}$ < 0,170 pF |
| $C_{aH\text{-}gT}$ < 0,090 pF | $C_{g1H\text{-}(gT+g3)}$ < 0,450 pF |
| $C_{g1H\text{-}aT}$ < 0,060 pF | $C_{aH\text{-}(gT+g3)}$ < 0,350 pF |

Operating characteristics of the heptode section as mixer
Caractéristiques d'utilisation de la partie heptode comme tube mélangeur
Betriebsdaten des Heptodenteiles als Mischröhre




| | | | | | |
|---|---|---|---|---|---|
| $V_a$ | = | 25 | 12,6 | 6,3 | V |
| $V_{g2+g4}$ | = | 25 | 12,6 | 6,3 | V |
| $V_{g1}$ | = | [1] | [1] | [1] | |
| $V_{osc}$ | = | 3,5 | 1,7 | 1,1 | $V_{eff}$ |
| $R_{g3}$ | = | 47 | 47 | 47 | kΩ |
| $I_{g3}$ | = | 40 | 18 | 7 | µA |
| $I_a$ | = | 550 | 170 | 50 | µA |
| $I_{g2+g4}$ | = | 1000 | 300 | 80 | µA |
| $S_c$ | = | 450 | 220 | 90 | µA/V |
| $R_i$ | = | 0,5 | 1,5 | 1,3 | MΩ |

Operating characteristics of the heptode section as R.F. or I.F. amplifier
Caractéristiques d'utilisation de la partie heptode comme amplificatrice H.F. ou M.F.
Betriebsdaten des Heptodenteiles als H.F. oder Z.F. Verstärker

| | | | | | |
|---|---|---|---|---|---|
| $V_a$ | = | 25 | 12,6 | 6,3 | V |
| $V_{g2+g3+g4}$ | = | 25 | 12,6 | 6,3 | V |
| $V_{g1}$ | = | [1] | [1] | [1] | |
| $I_a$ | = | 1,25 | 0,4 | 0,11 | mA |
| $I_{g2+g3+g4}$ | = | 0,85 | 0,25 | 0,08 | mA |
| S | = | 1,5 | 0,75 | 0,35 | mA/V |
| $R_i$ | = | 0,2 | 0,85 | 0,6 | MΩ |
| $R_{eq}$ | = | 5 | 6,5 | 8,5 | kΩ |

[1]) See page 3; voir page 3; siehe Seite 3

Typical characteristics of the triode section
Caractéristiques types de la partie triode
Kenndaten des Triodenteiles

| | | | | | |
|---|---|---|---|---|---|
| $V_a$ | = | 25 | 12,6 | 6,3 | V |
| $V_g$ | = | 2) | 2) | 2) | |
| $I_a$ | = | 2 | 0,75 | 0,3 | mA |
| S | = | 2.2 | 1,4 | 0,8 | mA/V |
| $\mu$ | = | 20 | 18,3 | 14,6 | |

Limiting values
Caractéristiques limites
Grenzdaten

| Triode section<br>Partie triode<br>Triodenteil | | Heptode section<br>Partie heptode<br>Heptodenteil | |
|---|---|---|---|
| $V_{ao}$ | = max. 550 V | $V_{ao}$ | = max. 550 V |
| $V_a$ | = max. 250 V | $V_a$ | = max. 50 V |
| Wa | = max. 0,8 W | $V_{g2+g4}$ | = max. 50 V |
| $I_k$ | = max. 6,5 mA | $I_k$ | = max. 5 mA |
| $R_g$ | = max. 3 MΩ | $R_{g1}$ | = max. 3 MΩ |
| $V_{kf}$ | = max. 150 V 3) | $R_{g3}$ | = max. 50 kΩ |
| $R_{kf}$ | = max. 20 kΩ | $V_{kf}$ | = max. 150 V 3) |

1) Obtained by grid current biasing; $R_{g1}$ = 1 MΩ
Obtenu par moyen de $R_{g1}$ = 1 MΩ
Erhalten mittels $R_{g1}$ = 1 MΩ

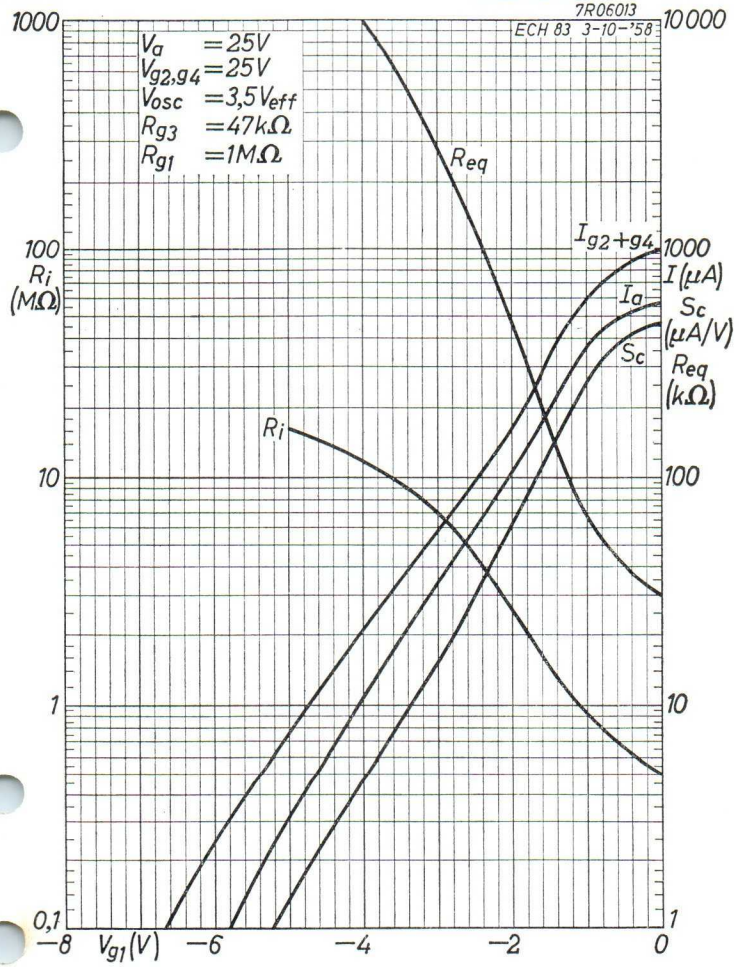
2) Obtained by grid current biasing; $R_g$ = 47 kΩ
Obtenu par moyen de $R_g$ = 47 kΩ
Erhalten mittels $R_g$ = 47 kΩ

3) D.C. component max. 100 V
Composante continue 100 V au max.
Gleichspannungsanteil max. 100 V

# PHILIPS

# ECH83

*Frequency changer; Tube mélangeur; Mischröhre*

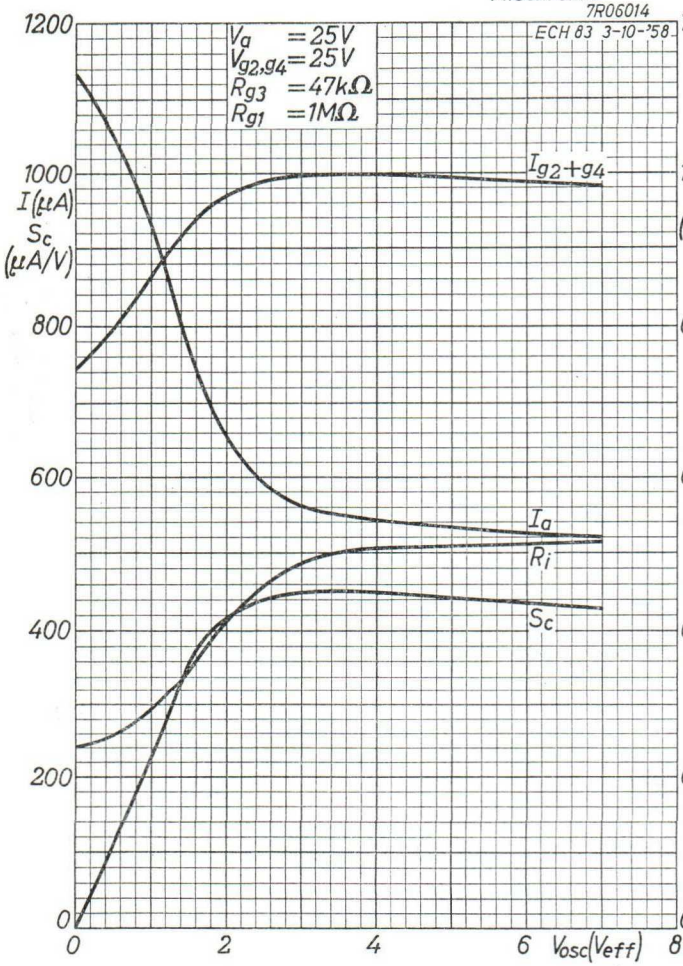



10.10.1958

A

# ECH83 PHILIPS

*Frequency changer; Tube mélangeur; Mischröhre*

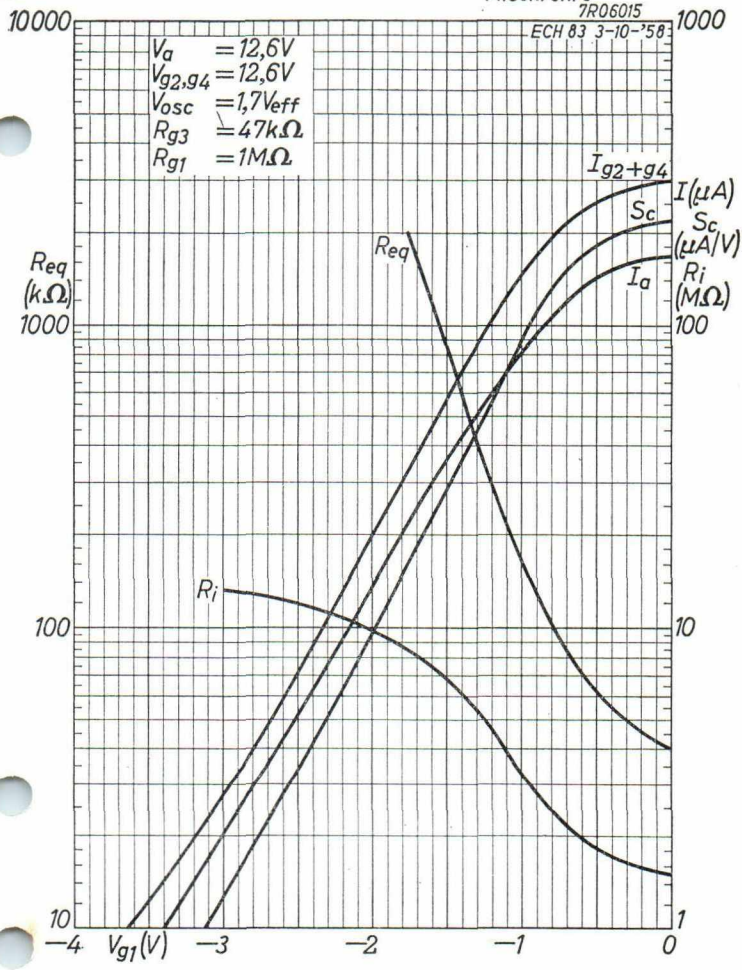



B

# PHILIPS

# ECH83

*Frequency changer; Tube mélangeur; Mischröhre*



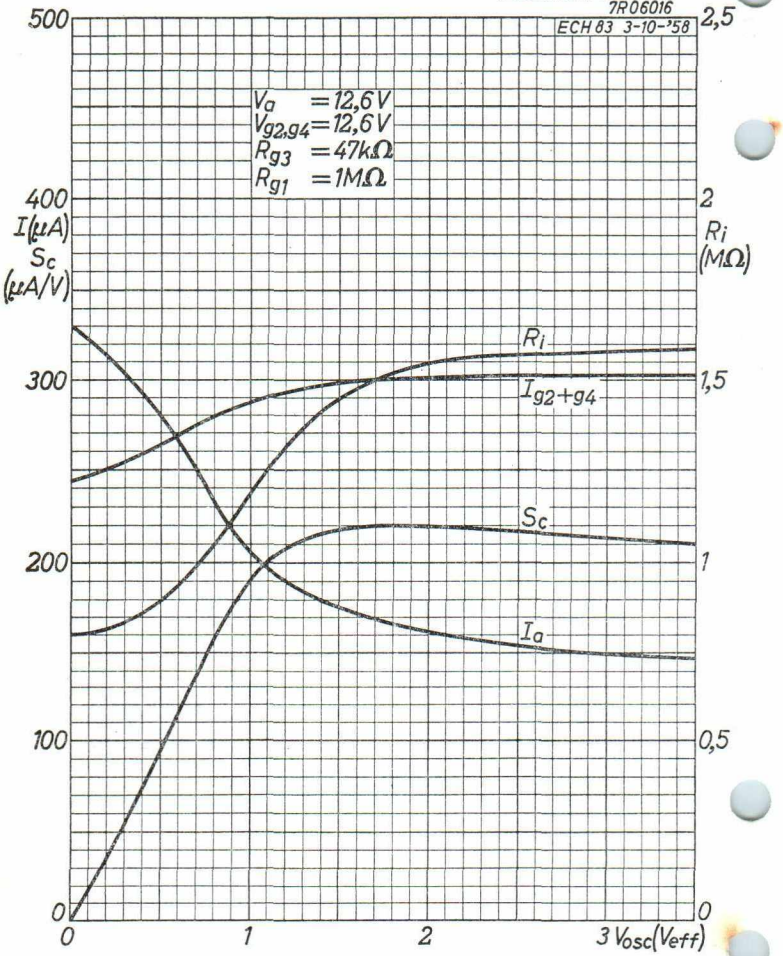

10.10.1958

C

# ECH83

# PHILIPS

*Frequency changer; Tube mélangeur; Mischröhre*

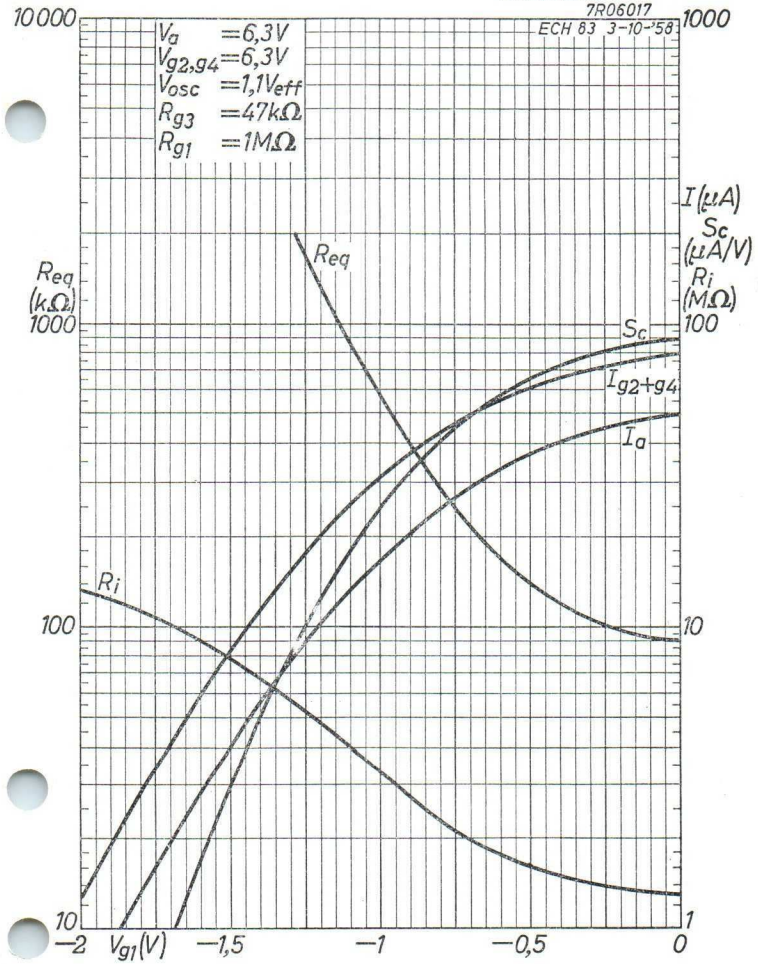



D

# PHILIPS

# ECH83

*Frequency changer; Tube mélangeur; Mischröhre*




10.10.1958

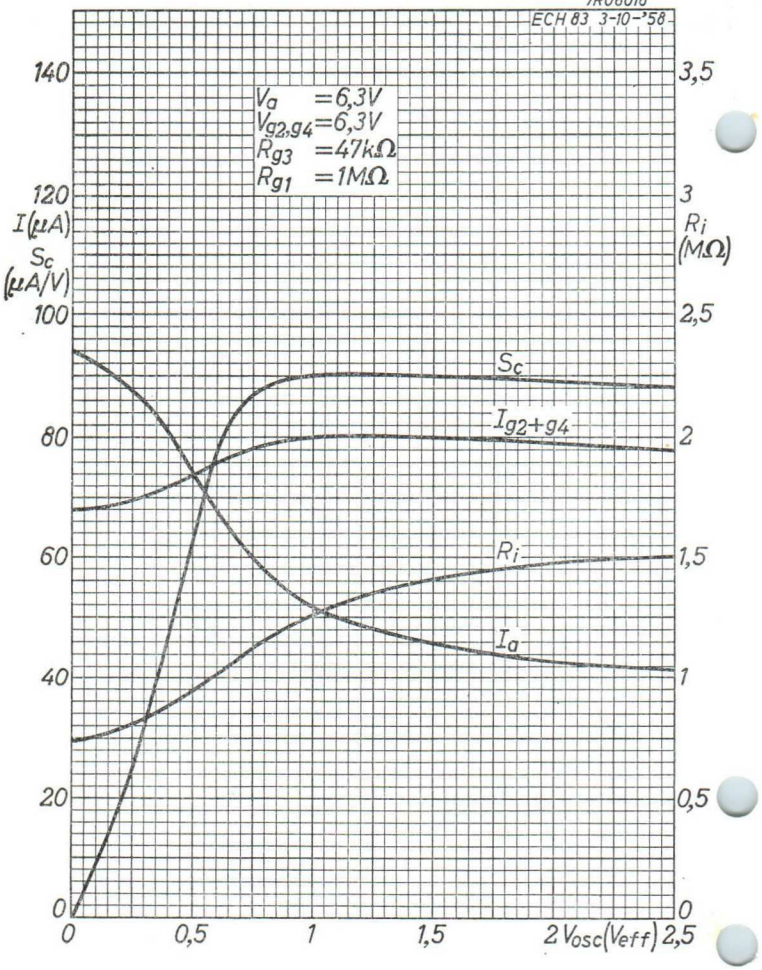
E

# ECH83

# PHILIPS

*Frequency changer; Tube mélangeur; Mischröhre*

7R06018



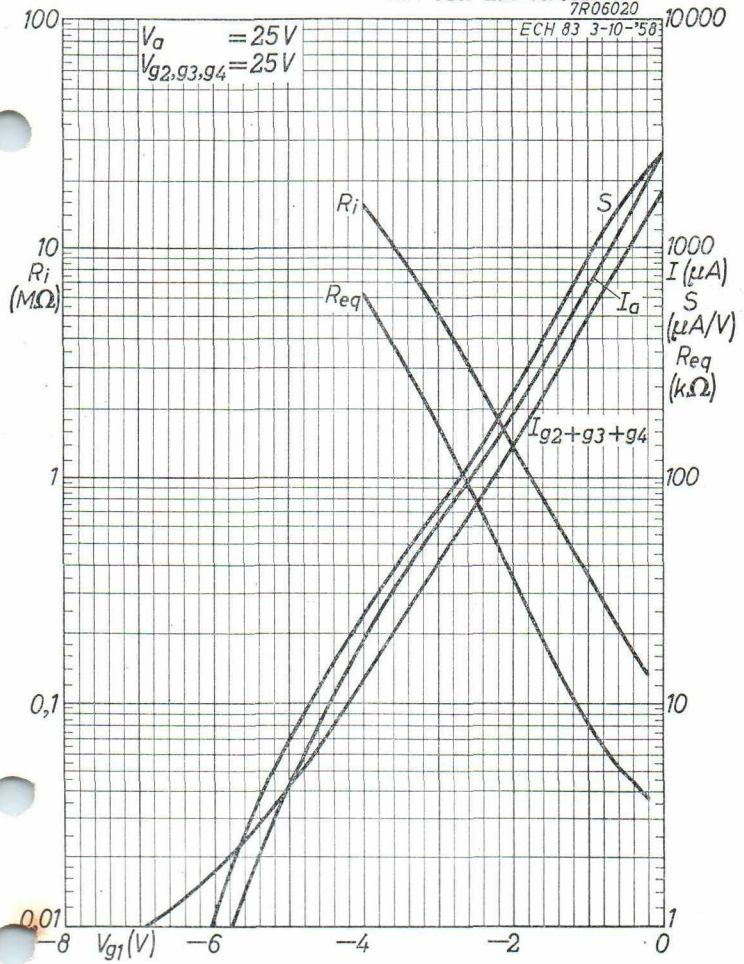

F

# PHILIPS

# ECH83

*R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.; H.F.-oder Z.F.-Verstärker*

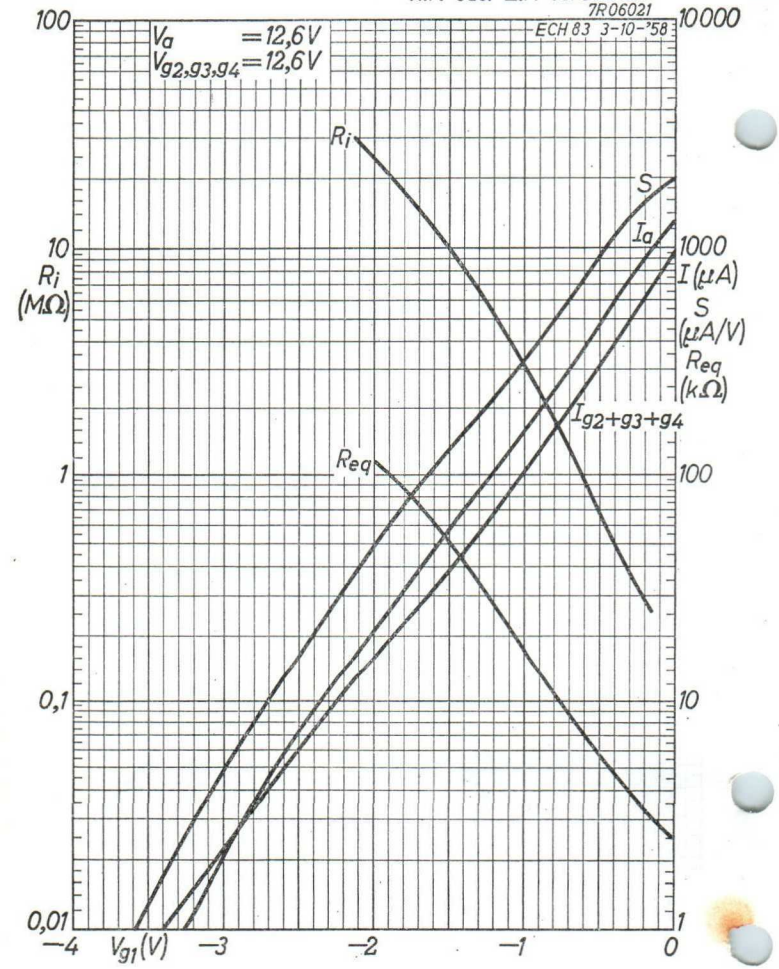
7R06020



# ECH83

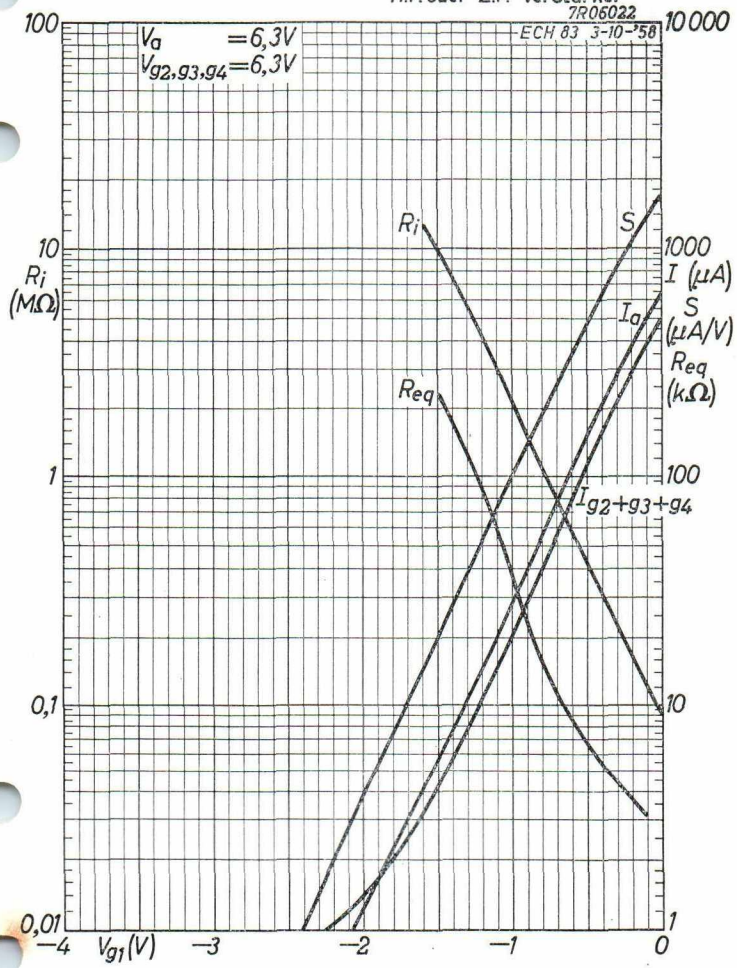
# PHILIPS

*R.F. or I.F. amplifier; Amplicateur H.F. ou M.F.; H.F.-oder Z.F.-Verstärker*

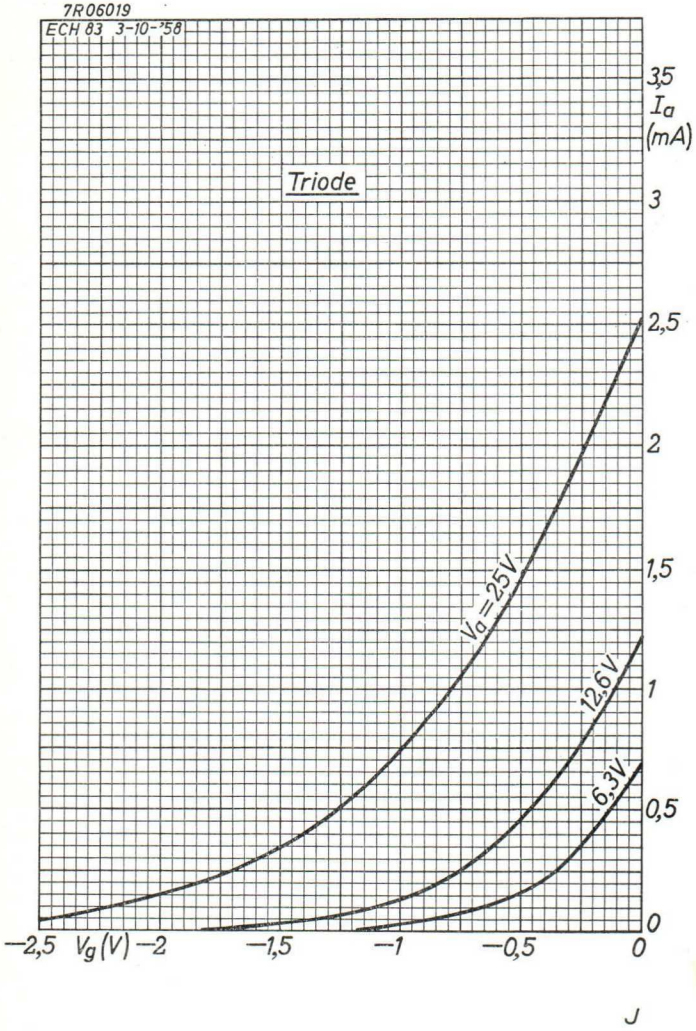



H

R.F. or I.F. amplifier; Amplificateur H.F. ou M.F.; H.F.-oder Z.F.-Verstärker



# ECH83 PHILIPS




J