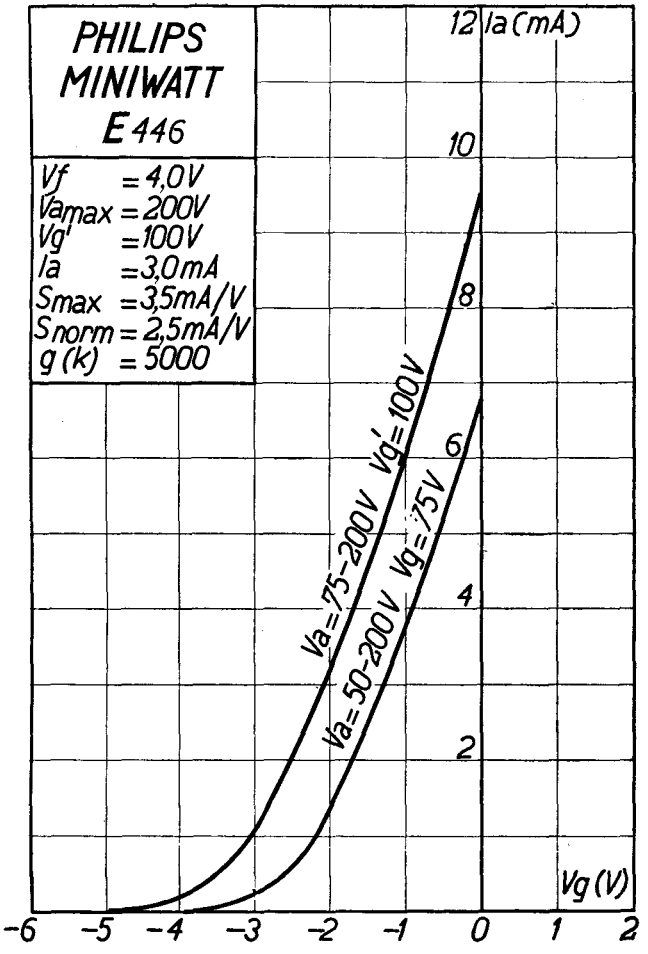
# E 446

## PHILIPS „MINIWATT"

| | | | |
|---|---|---|---|
| Heizspannung<br>Tension de chauffage<br>Filament voltage | $v_f$ | = | 4 V |
| Heizstrom<br>Courant de chauffage<br>Filament current | $i_f$ | = | ca.<br>env. 1,1 A<br>appr. |
| Anodenspannung<br>Tension anodique<br>Anode voltage | $v_{a\,max.}$ | = | 200 V |
| Hilfsgitterspannung<br>Tension auxiliaire de grille<br>Auxiliary grid voltage | $v_{g'}$ | = | 100 V |
| Normaler Anodenstrom<br>Courant anodique normal<br>Normal anode current | $i_a$ | = | 3 mA |
| Neg. Gittervorspannung<br>Polarisation négative de grille<br>Negative grid bias | $v_g$ | = | ca.<br>env. 2 V<br>appr. |
| Verstärkungsfaktor<br>Coefficient d'amplification<br>Amplification factor | $g(k)$ | = | 5000 |
| Steilheit (max.)<br>Inclinaison (max.)<br>Slope (max.) | $S_{max.}$ | = | 3,5 mA/V |
| Steilheit (norm.)<br>Inclinaison (norm.)<br>Slope (norm.) | $S_{norm.}$ | = | 2,5 mA/V |
| Innerer Widerstand (norm.)<br>Résistance intérieure (norm.)<br>Internal resistance (norm.) | $R_i$ | = | 2 Megohm |
| Anoden-Gitterkapazität<br>Capacité grille-plaque<br>Anode-grid capacity | $C_{ag}$ | = | 0,002 $\mu\mu$F |
| Max. Länge<br>Longueur max.<br>Overall length | $l$ | = | 138 mm |
| Grösster Durchmesser<br>Diamètre max.<br>Max. diameter | $d$ | = | 51 mm |
| Sockel<br>Culot<br>Base | | = | 0 35 |
| Sockelschaltung<br>Connexion du culot<br>Base connection | | = | S XVI |

| | | |
|---|---|---|
| Anwendung:<br>Applications:<br>Function: | H.F.-Verstärkung<br>Amplification h.f.<br>H.F. amplification | Z.F.-Verstärkung<br>Amplification m.f.<br>I.F. amplification |
| | Gleichrichtung<br>Détection<br>Detection | |
| | N.F.-Verstärker mit Widerstandskopplung<br>Amplificateur b.f. avec couplage par résistance<br>L.F. amplifier with resistance coupling | |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Vf = 4,0V
Vamax = 200V
Vg' = 100V
Ia = 3,0mA
Smax = 3,5mA/V
Snorm = 2,5mA/V
g (k) = 5000
Ia (mA)
12
10
8
6
4
2
Va=75-200V Vg'=100V
Va=50-200V Vg=75V
Vg (V)
-6
-5
-4
-3
-2
-1
0
1
2

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| | | | |
|---|---|---|---|
| Heizspannung<br>Tension de chauffage<br>Filament voltage | $V_f$ | = | 4 V |
| Heizstrom<br>Courant de chauffage<br>Filament current | $I_f$ | = | ca.<br>env. 1,1 A<br>appr. |
| Anodenspannung<br>Tension anodique<br>Anode voltage | $V_{a\,max}$ | = | 200 V |
| Hilfsgitterspannung<br>Tension auxiliaire de grille<br>Auxiliary grid voltage | $V_g'$ | = | 100 V |
| Normaler Anodenstrom<br>Courant anodique normal<br>Normal anode current | $I_a$ | = | 3 mA |
| Neg. Gittervorspannung<br>Polarisation négative de grille<br>Negative grid bias | $V_g$ | = | ca.<br>env. 2 V<br>appr. |
| Verstärkungsfaktor<br>*Coefficient d'amplification*<br>Amplification factor | $g(k)$ | = | 5000 |
| Steilheit (max.)<br>Inclinaison (max.)<br>Slope (max.) | $S_{max}$ | = | 3,5 mA/V |
| Steilheit (norm.)<br>Inclinaison (norm.)<br>Slope (norm.) | $S_{norm}$ | = | 2,5 mA/V |
| Innerer Widerstand (norm.)<br>*Résistance intérieure (norm.)*<br>Internal resistance (norm.) | $R_i$ | = | 2 Megohm |
| Anoden-Gitterkapazität<br>Capacité grille-plaque<br>Anode-grid capacity | $C_{ag}$ | = | 0,002 $\mu\mu$F |
| Max. Länge<br>Longueur max.<br>Overall length | $l$ | = | 138 mm |
| Grösster Durchmesser<br>Diamètre max.<br>Max. diameter | $d$ | = | 51 mm |
| Sockel<br>Culot<br>Base | | = | 0 35 |
| Sockelschaltung<br>Connexion du culot<br>Base connection | | = | S XVI |

| | | |
|---|---|---|
| Anwendung:<br>Applications:<br>Function: | H.F.-Verstärkung<br>Amplification h.f.<br>H.F. amplification | Z.F.-Verstärkung<br>Amplification m.f.<br>I.F. amplification |
| | Gleichrichtung<br>Détection<br>Detection | |
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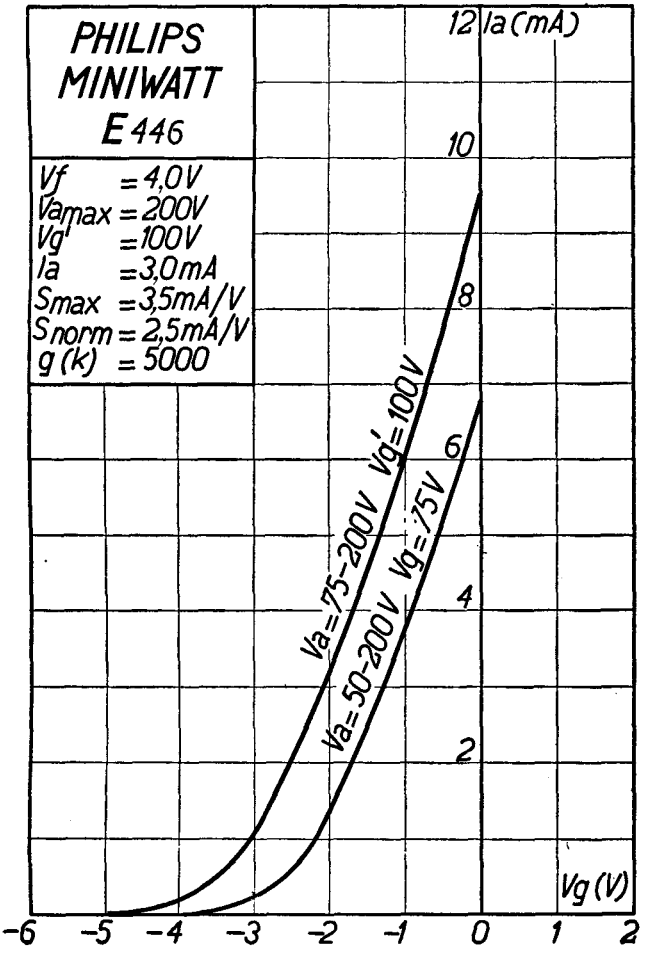
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Vf = 4,0V
Vamax = 200V
Vg' = 100V
Ia = 3,0mA
Smax = 3,5mA/V
Snorm = 2,5mA/V
g (k) = 5000
Ia (mA)
12
10
8
6
4
2
Va=75-200V Vg'=100V
Va=50-200V Vg=75V
Vg (V)
-6
-5
-4
-3
-2
-1
0
1
2

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| | | | |
|---|---|---|---|
| Heizspannung<br>Tension de chauffage<br>Filament voltage | $V_f$ | = | 4 V |
| Heizstrom<br>Courant de chauffage<br>Filament current | $I_f$ | = | ca.<br>env. 1,1 A<br>appr. |
| Anodenspannung<br>Tension anodique<br>Anode voltage | $V_{a\,max.}$ | = | 200 V |
| Hilfsgitterspannung<br>Tension auxiliaire de grille<br>Auxiliary-grid voltage | $V_{g'}$ | = | 100 V |
| Normaler Anodenstrom<br>Courant anodique normal<br>Normal anode current | $I_a$ | = | 3 mA |
| Neg. *Gittervorspannung*<br>Polarisation négative de grille<br>Negative grid bias | $V_g$ | = | ca.<br>env. 2 V<br>ca. |
| Verstärkungsfaktor<br>Coefficient d'amplification<br>Amplification factor | $g(k)$ | = | 5000 |
| Steilheit (max.)<br>Inclinaison (max.)<br>Slope (max.) | $S_{max.}$ | = | 3,5 mA/V |
| Steilheit (norm.)<br>Inclinaison (norm.)<br>Slope (norm.) | $S_{norm.}$ | = | 2,3 mA/V |
| Innerer Widerstand (norm.)<br>Résistance intérieure (norm.)<br>*Internal resistance (norm.)* | $R_i$ | = | 2,2 Megohm |
| Anoden-Gitterkapazität<br>Capacité grille-plaque<br>Anode-grid capacity | $C_{ag}$ | = | 0,002 $\mu\mu$F |
| Max. Länge<br>Longueur max.<br>Overall length | $l$ | = | 138 mm |
| Grösster Durchmesser<br>Diamètre max.<br>Max. diameter | $d$ | = | 51 mm |
| Sockel<br>Culot<br>Base | | = | 0 35 |
| Sockelschaltung<br>Connexion du culot<br>Base connection | | = | S XVI |

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|---|---|---|
| Anwendung:<br>Applications:<br>Function: | H.F.-Verstärkung<br>*Amplification h.f.*<br>H.F. amplification | Z.F.-Verstärkung<br>*Amplification m.f.*<br>I.F. amplification |
| | Gleichrichtung<br>Détection<br>Detection | |
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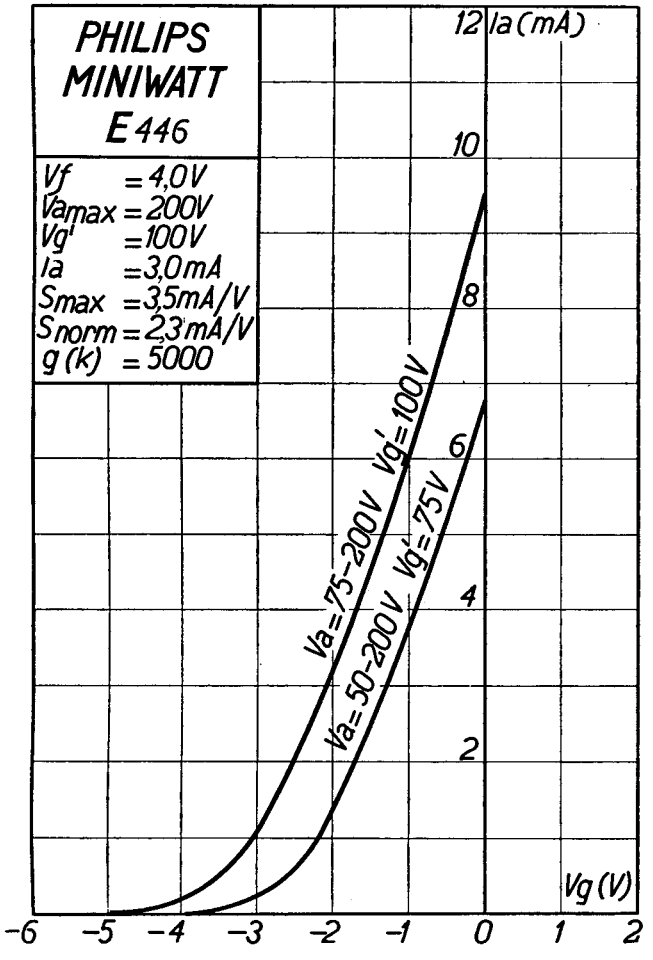
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Vamax = 200V
Vg' = 100V
Ia = 3,0mA
Smax = 3,5mA/V
Snorm = 2,3mA/V
g (k) = 5000
Ia (mA)
12
10
8
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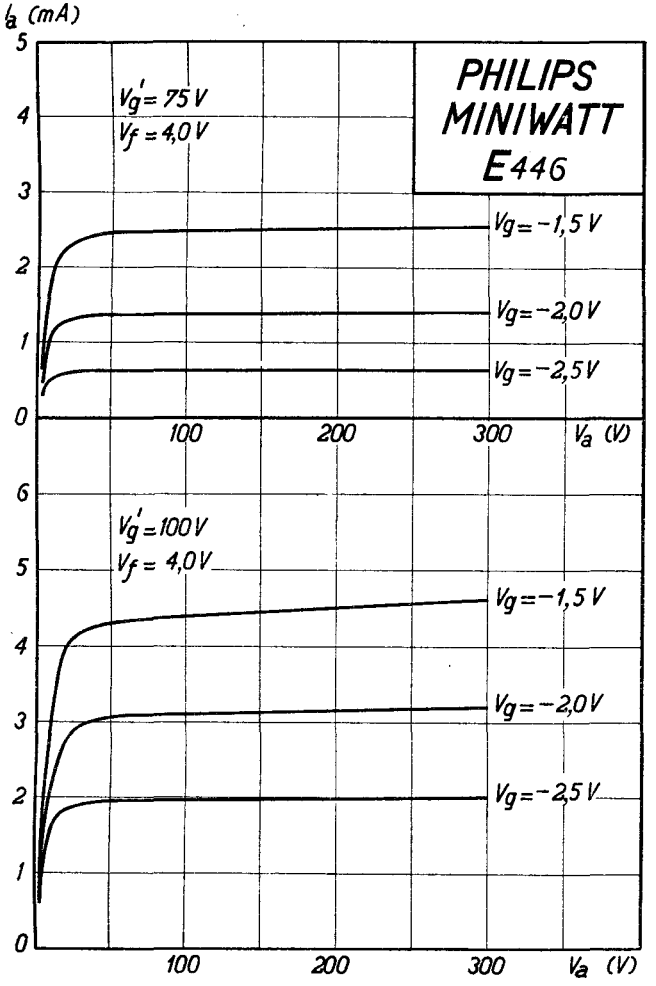
2
Va=75-200V Vg'=100V
Va=50-200V Vg'=75V
Vg (V)
-6
-5
-4
-3
-2
-1
0
1
2

# PHILIPS „MINIWATT"

| | | |
|---|---|---|
| Max. Anodenspannung<br>Tension anodique max.<br>Max. anode voltage | $V_{ao}$<br>$V_{aR}$<br>$V_{aL}$ | = 400 V<br>= 250 V<br>= 200 V |
| Max. Anodenbelastung<br>Dissipation anodique max.<br>Max. anode dissipation | $W_a$ | = 1,0 W |
| Max. Kathodenstrom<br>Courant cathodique max.<br>Max. cathode current | $I_c$ | = 10 mA |
| Max. Schirmgitterspannung<br>Tension de grille-écran max.<br>Max. screen-grid voltage | $V_{g'o}$<br>$V_{g'}$ | = 400 V<br>= 1,5 x Va<br>max. 125 V |
| Max. Schirmgitterbelastung<br>Dissipation de grille-écran max.<br>Max. screen-grid dissipation | $W_{g'}$ | = 0,3 W |
| Mittlerer Schirmgitterstrom<br>Courant de grille-écran moyen<br>Average screen-grid current | $I_{g'}$ | = 1,2 mA |
| Ungefähre Grenzw. des Schirmgitterstr.<br>Limites approxim. du cour. de gr.-écran<br>Approx. limits of screen-grid current | $I_{g'}$ min.<br>$I_{g'}$ max. | = 0,8 mA<br>= 1,6 mA |
| Gitterstrom-Einsatzpunkt<br>Point de commenc. du cour. de grille<br>Starting point of grid current | $V_{gi}$ | = —1,4 V |
| Max. Widerstand im Gitterkreis<br>Résistance max. dans le circuit de grille<br>Max. resistance in grid circuit | $R_{g1}$ | = 1,5 M.Ohm<br>= 1,0 M.Ohm |
| Max. Spann. zwischen Faden und Kath.<br>Tension max. entre filament et cathode<br>Max. voltage between filam. and cathode | $V_{fc}$ | = 50 V |
| Max. Widerst. zwischen Faden und Kath.<br>Résist. max. entre filament et cathode<br>Max. resist. betw. filament and cathode | $R_{fc}$ | = 20000 Ohm |
| Kapazitäten<br>Capacités<br>Capacities | $C_g$<br>$C_a$<br>$C_{ag}$ | = 12,5 $\mu\mu$F<br>= 10,2 $\mu\mu$F<br>$\leq$ 0,006 $\mu\mu$F |


Ia (mA)
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Vg' = 75 V
Vf = 4,0 V
Vg = −1,5 V
Vg = −2,0 V
Vg = −2,5 V
0
1
2
3
4
5
100
200
300
Va (V)
Vg' = 100 V
Vf = 4,0 V
Vg = −1,5 V
Vg = −2,0 V
Vg = −2,5 V
6
0
1
2
3
4
5
100
200
300
Va (V)

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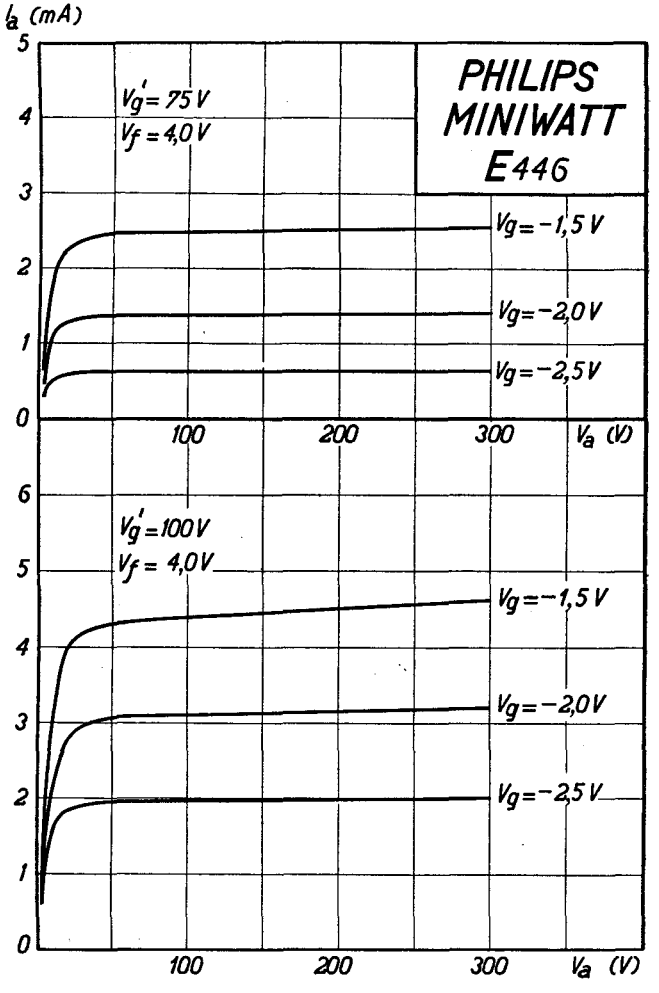
| | | | |
|---|---|---|---|
| Max. Anodenspannung<br>Tension anodique max.<br>Max. anode voltage | $V_{ao}$<br>$V_{aR}$<br>$V_{aL}$ | =<br>=<br>= | 400 V<br>250 V<br>200 V |
| Max. Anodenbelastung<br>Dissipation anodique max.<br>Max. anode dissipation | $W_a$ | = | 1,0 W |
| Max. Kathodenstrom<br>Courant cathodique max.<br>Max. cathode current | $I_c$ | = | 10 mA |
| Max. Schirmgitterspannung<br>Tension de grille-écran max.<br>Max. screen-grid voltage | $V_{g'o}$<br>$V_{g'}$ | =<br>= | 400 V<br>1,5 x $V_a$<br>max. 150 V |
| Max. Schirmgitterbelastung<br>Dissipation de grille-écran max.<br>Max. screen-grid dissipation | $W_{g'}$ | = | 0,3 W |
| Mittlerer Schirmgitterstrom<br>Courant de grille-écran moyen<br>Average screen-grid current | $I_{g'}$ | = | 1,1 mA |
| Ungefähre Grenzw. des Schirmgitterstr.<br>Limites approxim. du cour. de gr.-écran<br>Approx. limits of screen-grid current | $I_{g'}$ min.<br>$I_{g'}$ max. | =<br>= | 0,8 mA<br>1,4 mA |
| Gitterstrom-Einsatzpunkt<br>Point de commenc. du cour. de grille<br>Starting point of grid current | $V_{gi}$ | = | —1,4 V |
| Max. Widerstand im Gitterkreis<br>Résistance max. dans le circuit de grille<br>Max. resistance in grid circuit | $R_{g1}$<br>$R_{g2}$ | =<br>= | 1,5 M.Ohm<br>1,0 M.Ohm |
| Max. Spann. zwischen Faden und Kath.<br>Tension max. entre filament et cathode<br>Max. voltage betw. filament and cathode | $V_{fc}$ | = | 50 V |
| Max. Widerstand zw. Faden und Kathode<br>Résistance max. entre filam. et cathode<br>Max. resistance betw. filam. and cathode | $R_{fc}$ | = | 20000 Ohm |
| Kapazitäten<br>Capacités<br>Capacities | $C_g$<br>$C_a$<br>$C_{ag}$ | =<br>=<br>= | 12,5 $\mu\mu$F<br>9,9 $\mu\mu$F<br>0,002 $\mu\mu$F |


$I_a$ (mA)
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$V_g' = 75\,V$
$V_f = 4{,}0\,V$
$V_g = -1{,}5\,V$
$V_g = -2{,}0\,V$
$V_g = -2{,}5\,V$
$V_a$ (V)
$V_g' = 100\,V$
$V_f = 4{,}0\,V$
$V_g = -1{,}5\,V$
$V_g = -2{,}0\,V$
$V_g = -2{,}5\,V$
$V_a$ (V)