ELECTROMETER TUBE

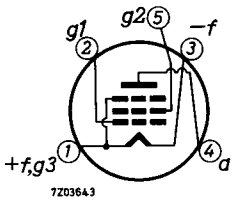
Subminiature electrometerpentode

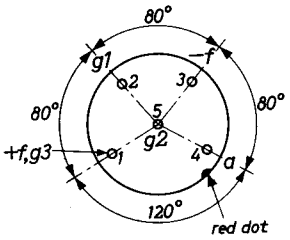
QUICK REFERENCE DATA		
Filament voltage	V_f	1.25 V
Anode voltage	V_a	10 V
Anode current	I_a	5.0 μA
Grid No.1 current	$-I_{g_1}$	< 8 x 10^{-15} A

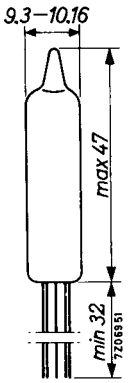
DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Subminiature







Directly soldered connections to the leads of this tube must be at least 13 mm from the seal and any bending of the leads must be at least 1.5 mm from the seal.

HEATING: Direct by D.C.

Filament voltage	V_f	1.25 V
Filament current	I_f	8.2 mA

CAPACITANCES

Anode to all	C_a	4.0	pF
Grid No.1 to all	C_{g_1}	3.0	pF
Anode to grid No.1	C_{ag_1}	0.2	pF

CHARACTERISTICS AND RANGE VALUES

Anode voltage	V_a	10		V
Grid No.2 voltage	V_{g_2}	6.5	5.0 to 7.5	V
Grid No.1 voltage	V_{g_1}	-2.5		V
Anode current	I_a	5.0		μA
Grid No.2 current	I_{g_2}	2.2	1.5 to 3.0	μA
Grid No.1 current [1]	$-I_{g_1}$	3×10^{-15}	$< 8 \times 10^{-15}$	A
Transconductance	S	10.5	8.0 to 15	μA/V
Internal resistance	R_i	10.5		MΩ
Amplification factor	μ_{ag_1}	110	> 80	
Grid No.1 voltage at crossover point [2]	V_{g_1}	-1.15		V [3]

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_a	max.	45	V
Grid No.2 voltage	V_{g_2}	max.	45	V
Cathode current	I_k	max.	180	μA
Filament voltage	V_f	max.	1.5	V
		min.	1.1	V

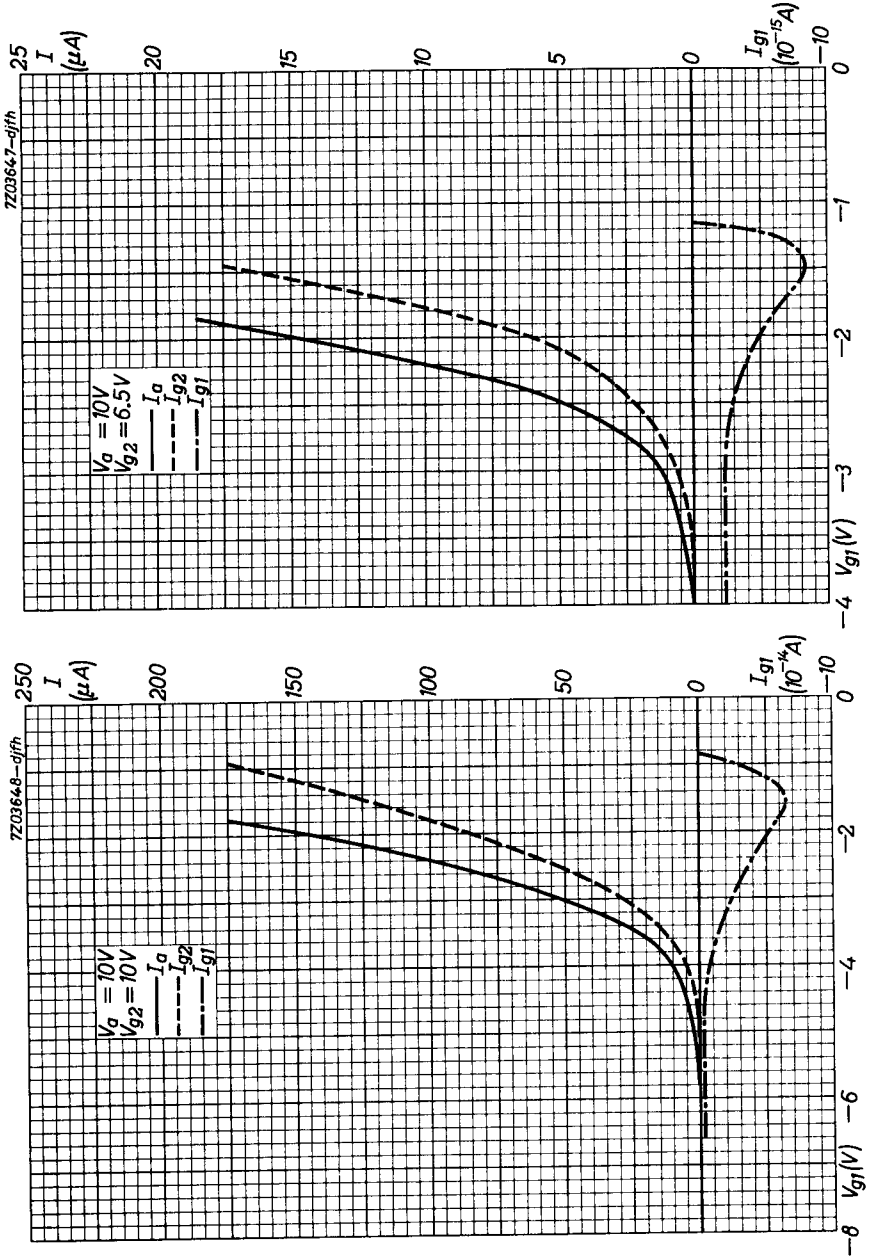
REMARKS

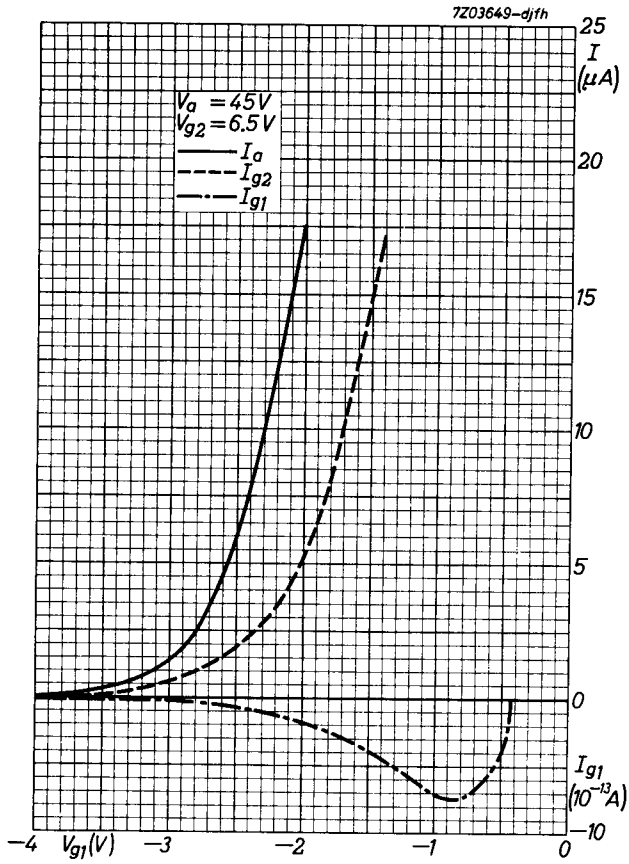
1. In order to avoid excessive drift of the characteristics the filament voltage must be applied before the anode and grid No.2 voltages.
2. To avoid contamination of the glass, the tube should not be removed from its protective envelope until it is mounted into the equipment.

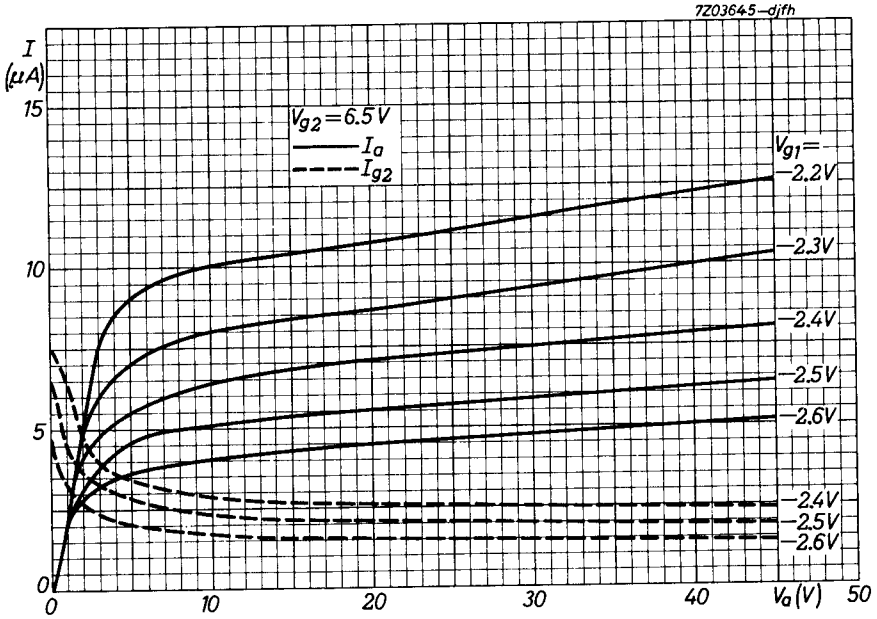
[1] Valid only in darkness.

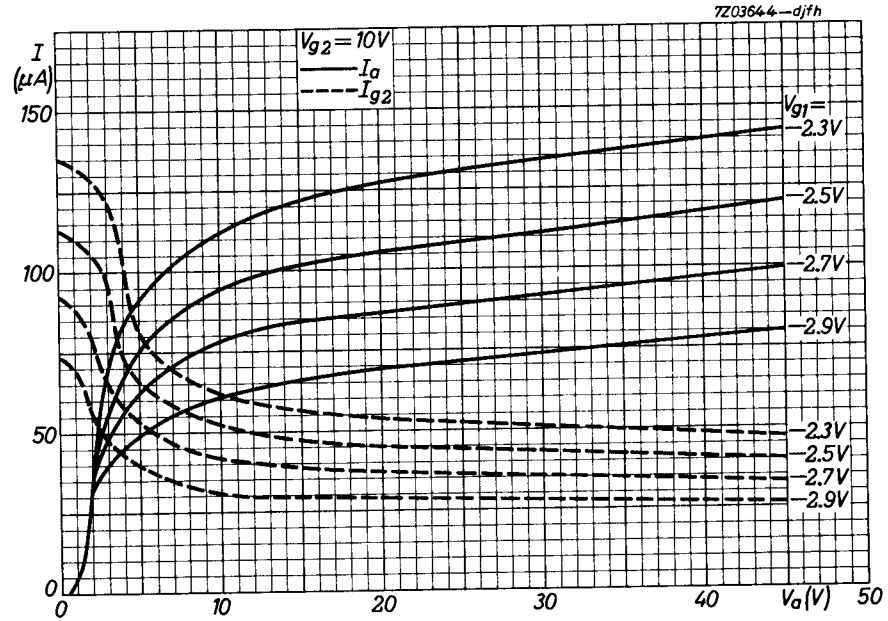
[2] The crossover point is the value of V_{g_1} at which the direction of I_{g_1} is reversed.

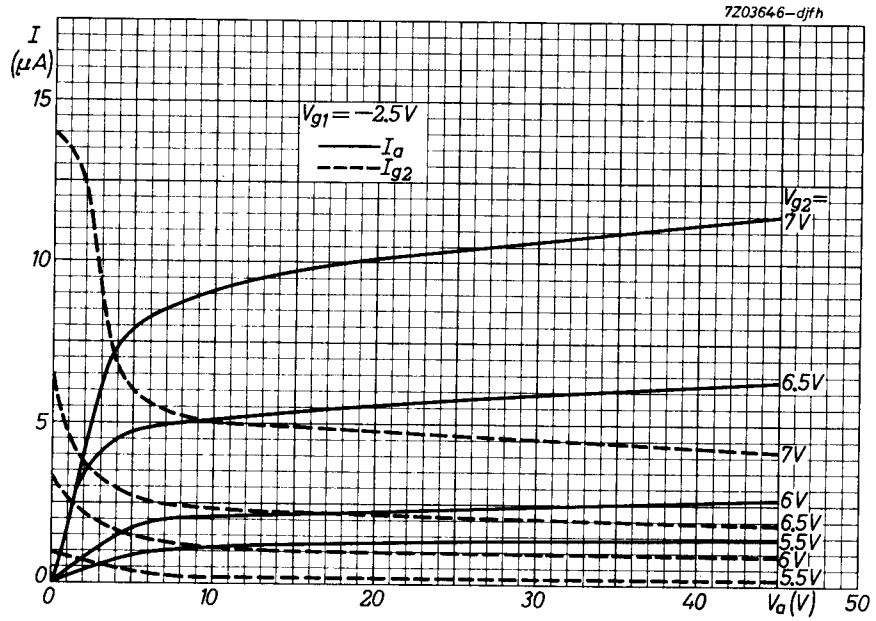
[3] Measured at $V_f = 1.25$ V, $V_a = 10$ V, V_{g_2} = the value at which $I_a = 5$ μA when $V_{g_1} = -2.5$ V.


7Z03647—dfth
I (μA)
25
20
15
10
5
0
I_{g1} (10^{-15}A)
−10
0
−1
−2
−3
−4
V_{g1}(V)
V_a = 10V
V_{g2} = 6.5V
I_a
I_{g2}
I_{g1}
7Z03648—dfth
I (μA)
250
200
150
100
50
0
I_{g1} (10^{-14}A)
−10
0
−2
−4
−6
−8
V_{g1}(V)
V_a = 10V
V_{g2} = 10V
I_a
I_{g2}
I_{g1}


7Z03649-djfh
V_a = 45V
V_{g2} = 6.5V
I_a
I_{g2}
I_{g1}
25
I
(μA)
20
15
10
5
0
I_{g1}
(10^{-13}A)
−10
−4
V_{g1}(V)
−3
−2
−1
0


7Z03645—djfh
I
(μA)
15
10
5
0
V_{g2}=6.5V
I_a
I_{g2}
V_{g1}=
−2.2V
−2.3V
−2.4V
−2.5V
−2.6V
−2.4V
−2.5V
−2.6V
0
10
20
30
40
V_a(V)
50


7Z03644—djfh
I
(μA)
150
100
50
0
V_{g2}=10V
I_a
I_{g2}
V_{g1}=
−2.3V
−2.5V
−2.7V
−2.9V
−2.3V
−2.5V
−2.7V
−2.9V
0
10
20
30
40
V_a(V)
50


7Z03646-djfh
I
(μA)
15
10
5
0
$V_{g1} = -2.5V$
I_a
I_{g2}
V_{g2}=
7V
6.5V
7V
6V
6.5V
5.5V
6V
5.5V
0
10
20
30
40
V_a(V)
50

PHILIPS

Data handbook

Electronic components and materials

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