High slope, low noise DOUBLE TRIODE with variable mutual conductance for use as V.H.F. cascode amplifier in television tuners

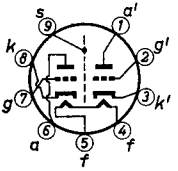
HEATING

Indirect by A.C. or D.C.; series supply

Heater current I_f = 300 mA

Heater voltage V_f = 7.6 V

Dimensions in mm



Base: NOVAL

REMARK

The system a,g,k should be used as the grounded cathode input section and the system a',g',k' as the grounded grid output section

CAPACITANCES

			1)	2)	
Triode system a,g,k					
Grid to cathode, heater and screen	$C_{g-(k+f+s)}$	=	3.5	3.5	pF
Anode to cathode, heater and screen	$C_{a-(k+f+s)}$	=	1.7	2.3	pF
Anode to grid	C_{ag}	=	1.9	1.9	pF
Grid to heater	C_{gf}	<	0.28	0.28	pF
Triode system a',g',k'					
Cathode to grid, heater and screen	$C_{k'-(g'+f+s)}$	=	6.0	6.0	pF
Anode to grid, heater and screen	$C_{a'-(g'+f+s)}$	=	3.4	4.0	pF
Anode to cathode	$C_{a'k'}$	=	0.18	0.17	pF
Cathode to heater	$C_{k'f}$	=	3.0	3.0	pF
Anode to grid	$C_{a'g'}$	=	1.9	1.9	pF
Between the two triode systems					
Anode to anode	$C_{aa'}$	<	0.045	0.015	pF
Grid (g) to anode (a')	$C_{ga'}$	<	0.004	0.004	pF

1) Without external shield
2) With external shield

TYPICAL CHARACTERISTICS (each system)

Anode voltage	V_a	= 90 V
Grid voltage	V_g	= -1.4 V
Anode current	I_a	= 15 mA
Mutual conductance	S	= 12.5 mA/V
Internal resistance	R_i	= 2.5 kΩ
Grid voltage	V_g	= -5 V
Mutual conductance	S	= 0.625 mA/V
Grid voltage	V_g	= -9 V
Mutual conductance	S	= 0.125 mA/V

LIMITING VALUES (Design centre limits; each system)

Anode voltage in cold condition	V_{a_o}	= max. 550 V
Anode voltage	V_a	= max. 130 V
Anode dissipation	W_a	= max. 1.8 W
Negative grid voltage	$-V_g$	= max. 50 V
Grid circuit resistance		
system a,g,k	R_g	= max. 1 MΩ
system a',g',k'	R_g	= max. 0.5 MΩ
Cathode current	I_k	= max. 22 mA
Circuit resistance between cathode and heater	R_{kf}	= max. 20 kΩ
Voltage between cathode and heater		
system a,g,k	V_{kf}	= max. 80 V
system a',g',k' (cathode positive)	$V_{k'f}$	= max. 180 V [1]

REMARK

In order not to exceed the maximum permissible anode voltage when the tube is controlled, it is necessary to use a voltage divider for the grid of the grounded grid section

[1]) D.C. component max. 130 V

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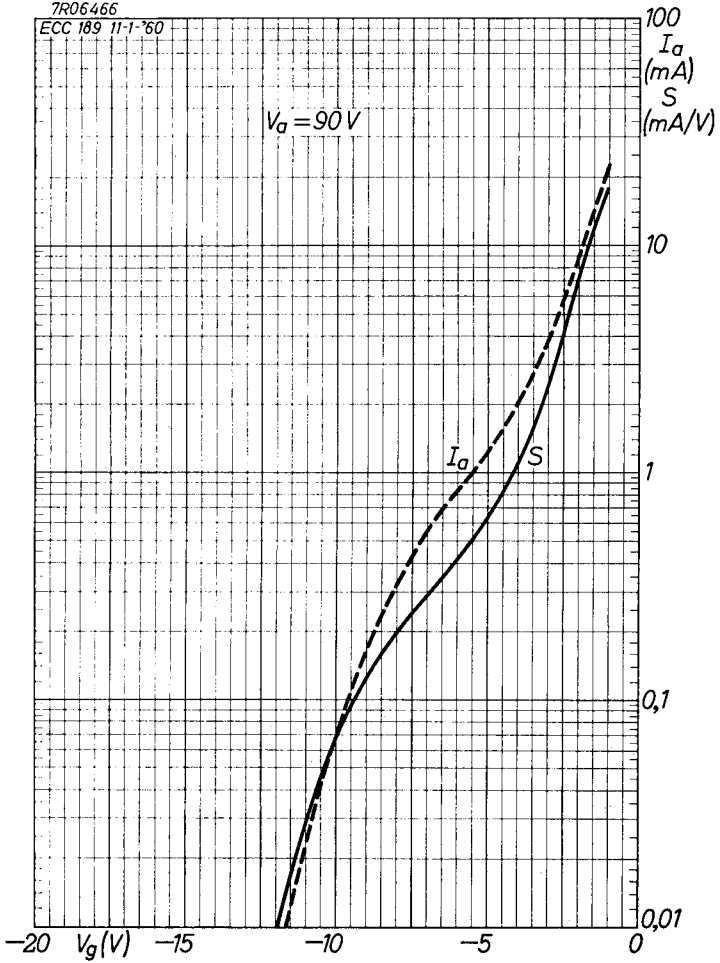
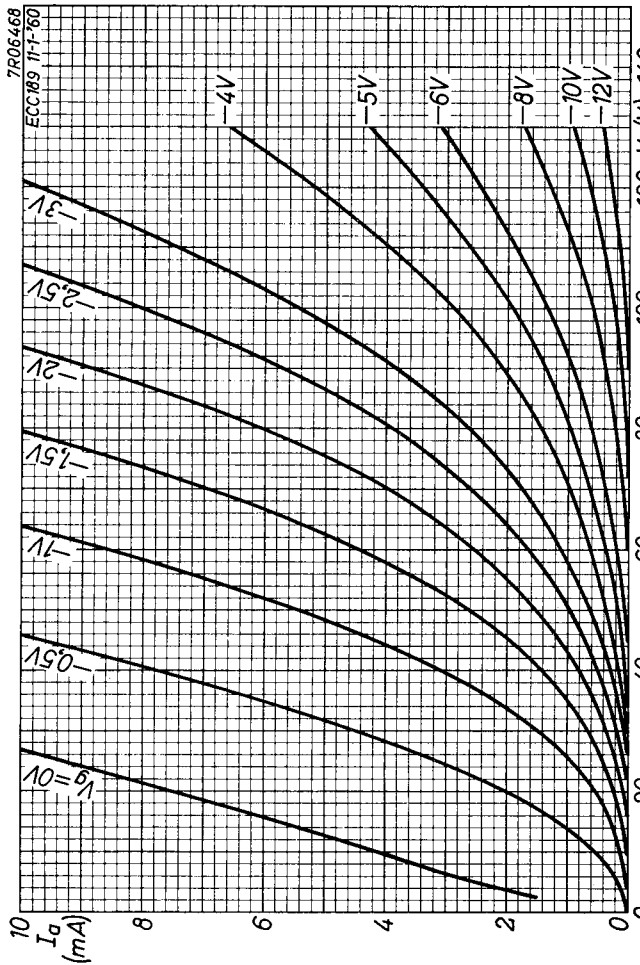


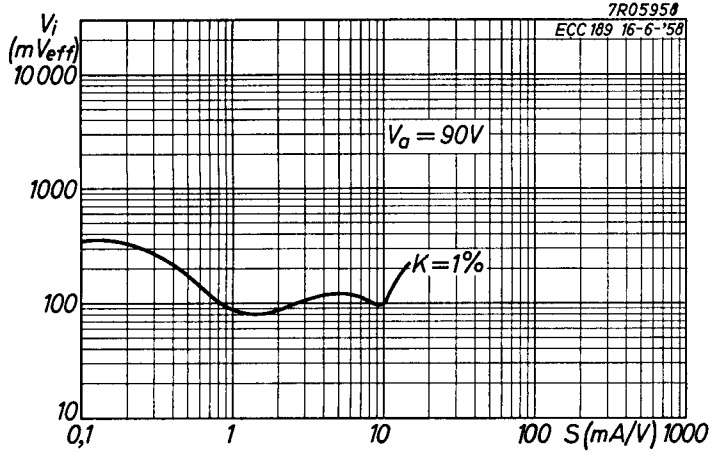
1.1.1960

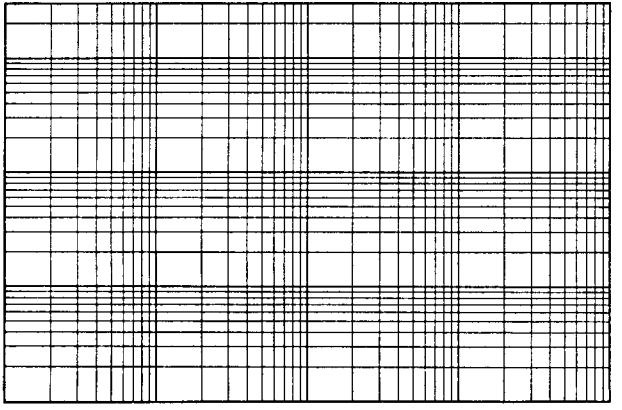
A

PCC 189 **PHILIPS**

B


7R06468
ECC189 11-1-'60
-4V
-5V
-6V
-8V
-10V
-12V
-1V
-2,5V
-2V
-1,5V
-1V
-0,5V
Vg=0V
Va(V)
140
120
100
80
60
40
20
0
Ia (mA)
10
8
6
4
2
0


7R05950
ECC 189 16-6-'58
Vi
(mVeff)
10000
1000
100
10
Va = 90V
K=1%
0,1
1
10
100
S(mA/V)
1000



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Electronic Tube

HANDBOOK

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6	D	1960.01.01
7	FP	2000.04.10