

DOUBLE TETRODES

Double tetrodes for use as linear single-sideband amplifier.

The YL1071 is electrically identical to the YL1070 except for the heater, and has been designed to fit into heatsink cooling equipment.

QUICK REFERENCE DATA

AB1 linear S.S.B. amplifier, section in parallel

freq. MHz	C.C.S.		I.C.A.S.	
	V _a V	W _{oPEP} W	V _a V	W _{oPEP} W
7	1000	141	1000	158

HEATING: Indirect by a.c. or d.c.; parallel supply; oxide coated cathode

Pins 5—(1+7)

1—7

YL1070

Heater voltage

V_f 6,3 12,6 V

Heater current

I_f 1,8 0,9 A

YL1071

Heater voltage

V_f 13,25 26,5 V

Heater current

I_f 0,866 0,433 A



CAPACITANCES (each section)

Anode to all other elements except grid 1

C_a 3,15 pF

Grid 1 to all other elements except anode

C_{g1} 10,6 pF

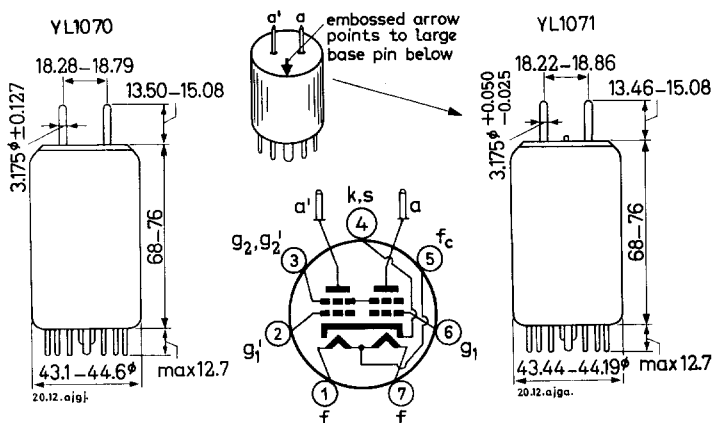
Anode to grid 1

C_{ag1} < 0,09 pF

TYPICAL CHARACTERISTICS (each section)

Anode voltage	V_a	600 V
Grid 2 voltage	V_{g2}	250 V
Anode current	I_a	40 mA
Amplification factor of grid 2 with respect to grid 1	μ_{g2g1}	7

MECHANICAL DATA



Base	Septar
Accessories	Anode connector 40681
	Socket 2422 513 00001
Mounting position	Vertical with base up or down
	Horizontal with anode pins in a horizontal plane
Net mass	70 g

COOLING: Radiation and convection

When the tube is used at maximum permissible values it may be necessary to direct an air flow of approx. 0,6 m³/min to the bulb and to the anode seals. The YL1071 has a calibrated bulb held to close tolerances. This permits an accurate fit into heatsink cooling equipment.

TEMPERATURE LIMITS (Absolute maximum rating system)

Temperature of bulb and all seals

max. 250 °C

R.F. CLASS-C TELEGRAPHY AND F.M. TELEPHONY**LIMITING VALUES** (Absolute maximum rating system; each section)

Frequency	f	up to	60	up to 175 MHz
Anode voltage	V_a	max.	850	max. 750 V
Anode input power	W_{ia}	max.	90	max. 75 W
Anode dissipation	W_a	max.	30	max. 30 W
Anode current	I_a	max.	110	max. 110 mA
Grid 2 voltage	V_{g2}	max.	300	max. 300 V
Grid 2 dissipation	W_{g2}	max.	7	max. 7 W
Negative grid 1 voltage	$-V_{g1}$	max.	175	max. 175 V
Grid 1 current	I_{g1}	max.	5	max. 5 mA
Cathode to heater voltage	V_{kf}	max.	100	max. 100 V

R.F. CLASS-AB1 LINEAR S.S.B. AMPLIFIER suppressed carrier**LIMITING VALUES** (Absolute maximum rating system; each section)

Frequency	f	up to	60	MHz
			C.C.S.	I.C.A.S.
Anode voltage	V_a	max.	1000	max. 1000 V
Anode input power	W_{ia}	max.	100	max. 110 W
Anode dissipation	W_a	max.	30	max. 34 W
Anode current	I_a	max.	110	max. 110 mA
Grid 2 voltage	V_{g2}	max.	360	max. 360 V
Grid 2 dissipation	W_{g2}	max.	3,5	max. 4 W
Negative grid 1 voltage	$-V_{g1}$	max.	175	max. 175 V
Grid 1 current	I_{g1}	max.	5	max. 5 mA
Cathode to heater voltage	V_{kf}	max.	100	max. 100 V



OPERATING CONDITIONS (two sections in parallel)

		C.C.S.	
Table A			
Frequency	f	7	MHz
Anode voltage	V _a	1000	V
Grid 2 voltage	V _{g2}	250	V
Grid 1 voltage	V _{g1}	-34	V (note 1)
Load resistance	R _a	3100	Ω

		zero signal	single tone	two tone	
Peak grid 1 driving voltage	V _{g1~p}	0	34	34	V
Anode current	I _{a+a'}	50	195	131	mA
Grid 2 current	I _{g2+g2'}	1,2	26	11,5	mA
Grid 1 current	I _{g1+g1'}	0	0,01	0,01	mA
Anode input power	W _{ia+a'}	50	195	131	W
Anode dissipation	W _{a+a'}	50	54	61	W
Output power	W _o	—	141	141	W (note 2)
Intermodulation distortion					
3rd order	d _{i3}	—	—	< -30	dB (note 3)
5th order	d _{i5}	—	—	< -45	dB (note 3)

Table B

		C.C.S.	
Frequency	f	7	MHz
Anode voltage	V _a	800	V
Grid 2 voltage	V _{g2}	250	V
Grid 1 voltage	V _{g1}	-34	V (note 1)
Load resistance	R _a	2300	Ω

		zero signal	single tone	two tone	
Peak grid 1 driving voltage	V _{g1~p}	0	34	34	V
Anode current	I _{a+a'}	50	197	130	mA
Grid 2 current	I _{g2+g2'}	1,2	26	12,5	mA
Grid 1 current	I _{g1+g1'}	0	0,01	0	mA
Anode input power	W _{ia+a'}	40	158	104	W
Anode dissipation	W _{a+a'}	40	46	43	W
Output power	W _o	—	112	112	W (note 2)
Intermodulation distortion					
3rd order	d _{i3}	—	—	< -30	dB (note 3)
5th order	d _{i5}	—	—	< -45	dB (note 3)

Notes

1. Adjust to obtain the stated zero signal anode current.
2. Peak envelope power value.
3. Distortion level, referred to the amplitude of either of the tones, at full drive; also highest distortion encountered at any driving level up to full drive.

Table C

		C.C.S.		
Frequency	f	7	MHz	
Anode voltage	V_a	600	V	
Grid 2 voltage	V_{g2}	250	V	
Grid 1 voltage	V_{g1}	-32,5	V (note 1)	
Load resistance	R_a	1410	Ω	
		zero signal	single tone	two tone
Peak grid 1 driving voltage	$V_{g1 \sim p}$	0	32,5	32,5 V
Anode current	$I_{a+a'}$	60	212	144 mA
Grid 2 current	$I_{g2+g2'}$	1,9	25	13,5 mA
Grid 1 current	$I_{g1+g1'}$	0	0,01	0 mA
Anode input power	$W_{ia+a'}$	36	127	86 W
Anode dissipation	$W_{a+a'}$	36	88	48 W
Output power	W_o	—	76	76 W (note 2)
Intermodulation distortion				
3rd order	d_{i3}	—	—	< -30 dB (note 3)
5th order	d_{i5}	—	—	< -45 dB (note 3)

Table D

		I.C.A.S.		
Frequency	f	7	MHz	
Anode voltage	V_a	1000	V	
Grid 2 voltage	V_{g2}	250	V	
Grid 1 voltage	V_{g1}	-36	V (note 1)	
Load resistance	R_a	3000	Ω	
		zero signal	single tone	two tone
Peak grid 1 driving voltage	$V_{g1 \sim p}$	0	36	36 V
Anode current	$I_{a+a'}$	55	216	144 mA
Grid 2 current	$I_{g2+g2'}$	1	25	13 mA
Grid 1 current	$I_{g1+g1'}$	0	0,05	0,02 mA
Anode input power	$W_{ia+a'}$	55	216	144 W
Anode dissipation	$W_{a+a'}$	55	58	65 W
Output power	W_o	—	158	158 W (note 2)
Intermodulation distortion				
3rd order	d_{i3}	—	—	< -30 dB (note 3)
5th order	d_{i5}	—	—	< -45 dB (note 3)

Notes

1. Adjust to obtain the stated zero signal anode current.
2. Peak envelope power value.
3. Distortion level, referred to the amplitude of either of the tones, at full drive; also highest distortion encountered at any driving level up to full drive.

