

## S.Q. TUBE

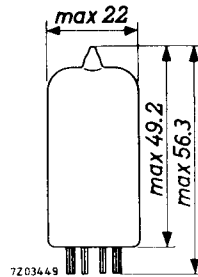
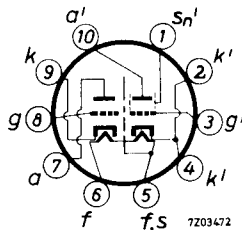
Special quality double triode with neutralisation screen, designed for use as V.H.F. amplifier (max. freq. 300 Mc/s) in a cascode circuit without external neutralisation, e.g. aerial amplifier for band III and frequency multiplier.

QUICK REFERENCE DATA				
Life test	10 000 hours			
Low interface resistance				
Mechanical quality	Shock and vibration resistant			
Base	10 pin miniature with gold plated pins			
Heating	Indirect A.C. or D.C.; parallel supply			
Heater voltage	$V_f$	6.3	V	
Heater current	$I_f$	335	mA	
	Input section		Output section	
Anode voltage	90	90	90	90 V
Anode current	15	27	15	27 mA
Mutual conductance	13	17.5	17	22 mA/V

### DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: 10 pin miniature



7Z2 6373

## CHARACTERISTICS

Heater voltage	$V_f$	6.3		V
Heater current	$I_f$	335		mA
<u>Input section (unit a', g', k')</u>				
Anode voltage	$V_{a'}$	90	90	V
Neutralization screen voltage	$V_{Sn'}$	0	0	V
Grid voltage	$-V_{g'}$	2.1	1.4	V
Anode current	$I_{a'}$	15	27	mA
Mutual conductance	S	13	17.5	mA/V
Amplification factor	$\mu$	27	27	
Equivalent noise resistance	$R_{eq}$	250	200	$\Omega$
<u>Output section (unit a, g, k)</u>				
Anode voltage	$V_a$	90	90	V
Grid voltage	$-V_g$	2.0	1.4	V
Anode current	$I_a$	15	27	mA
Mutual conductance	S	17	22	mA/V
Amplification factor	$\mu$	28	28	
Equivalent noise resistance	$R_{eq}$	200	150	$\Omega$
<u>Insulation resistance between electrodes</u>	$R_{ins}$	Initial End of life	max. 100 min. 20	$M\Omega$ $M\Omega$
<u>Leakage current between cathode and heater</u>				
Voltage between cathode and heater V = 150 V				
Cathode positive	$I_{kf}$	Initial End of life	max. 15 max. 20	$\mu A$ $\mu A$
Voltage between cathode and heater V = 50 V				
Cathode negative	$I_{kf}$	Initial End of life	max. 15 max. 20	$\mu A$ $\mu A$

**CAPACITANCES**Input system (unit a', g', k')

Grid to cathode, filament and neutralisation screen	$C_{g'/k'fsn'}$	5.1 pF
Anode to cathode, filament and neutralisation screen	$C_{a'/k'fsn'}$	5.0 pF
Grid to neutralisation screen	$C_{g'sn'}$	1.4 pF
Anode to grid	$C_{a'g'}$	0.45 pF
Anode to neutralisation screen	$C_{a'sn'}$	3.4 pF

Output system (unit a, g, k)

Cathode to grid and filament	$C_{k/gf}$	6.5 pF
Anode to grid and filament	$C_{a/gf}$	3.2 pF
Anode to cathode	$C_{ak}$	180 mpF
Anode to grid.	$C_{ag}$	1.5 pF

**SHOCK AND VIBRATION RESISTANCE**

The following test conditions are applied to assess the mechanical quality of the tube. These conditions are not intended to be used as normal operating conditions.

Shock

The tube is subjected 5 times in each of 4 positions to an acceleration of 500 g supplied by an NRL shock machine with the hammer lifted over an angle of 30°.

Vibration

The tube is subjected during 32 hours in each of 3 positions to a vibration frequency of 50 c/s with an acceleration of 2.5 g.

**LIFE**

Production samples are tested under the following conditions during 10000 hours: (each unit)

Heater voltage	$V_f$	6.3 V
Anode supply voltage	$V_{ba}$	110 V
Grid supply voltage	$V_{bg}$	17 V
Cathode resistor	$R_k$	680 $\Omega$ 7Z2 6375

## LIMITING VALUES (Absolute max. rating system)

(Each unit)

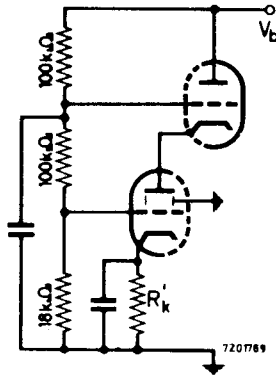
Anode voltage	$V_{a0}$	max. 450 V
	$V_a$	max. 250 V
Anode dissipation	$W_a$	max. 2.7 W
Grid voltage	$-V_g$	max. 50 V
Grid peak voltage	$-V_{gp}$	max. 150 V
Duty factor max. 1%		
Pulse duration max. 10 $\mu$ s		
Cathode current	$I_k$	max. 40 mA
Cathode peak current	$I_{kp}$	max. 400 mA
Duty factor max. 10%		
Pulse duration max. 200 $\mu$ s		
Grid resistor	$R_g$	max. 1 M $\Omega$
Automatic bias		
Voltage between cathode and heater		
Cathode positive	$V_{kf (k+)}$	max. 150 V
Cathode negative	$V_{kf (k-)}$	max. 50 V
Bulb temperature		max. 225 $^{\circ}$ C

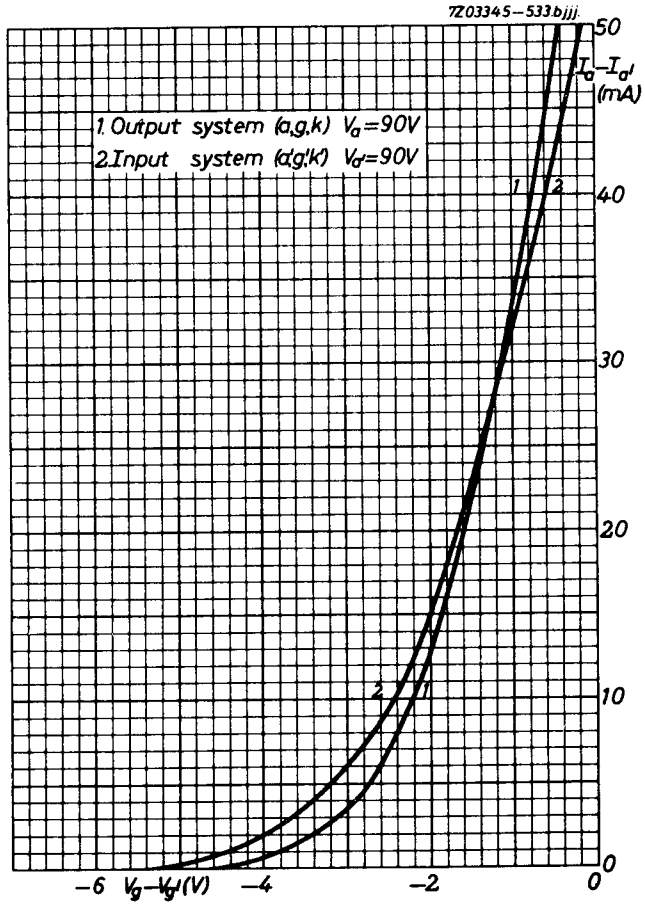
## OPERATING CHARACTERISTICS

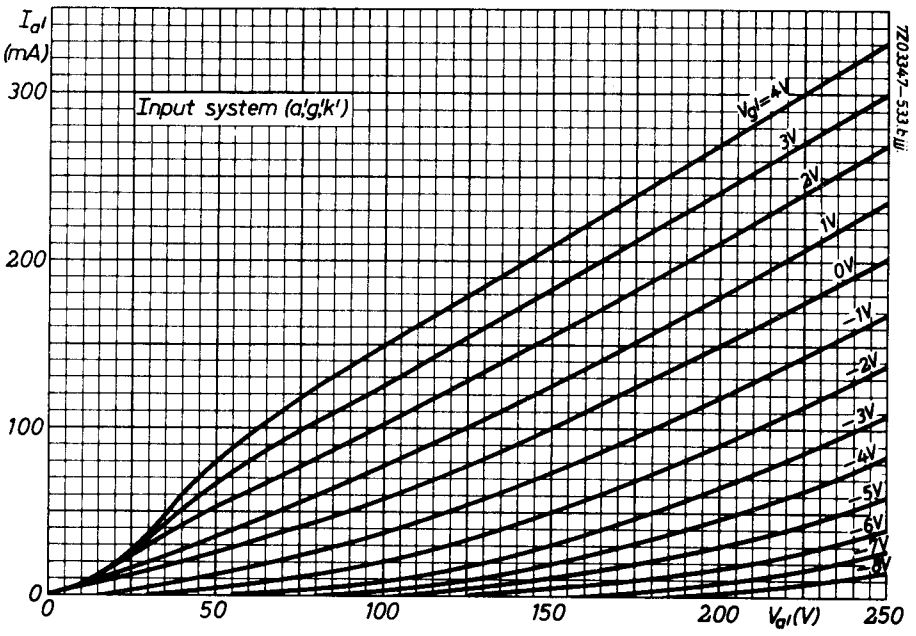
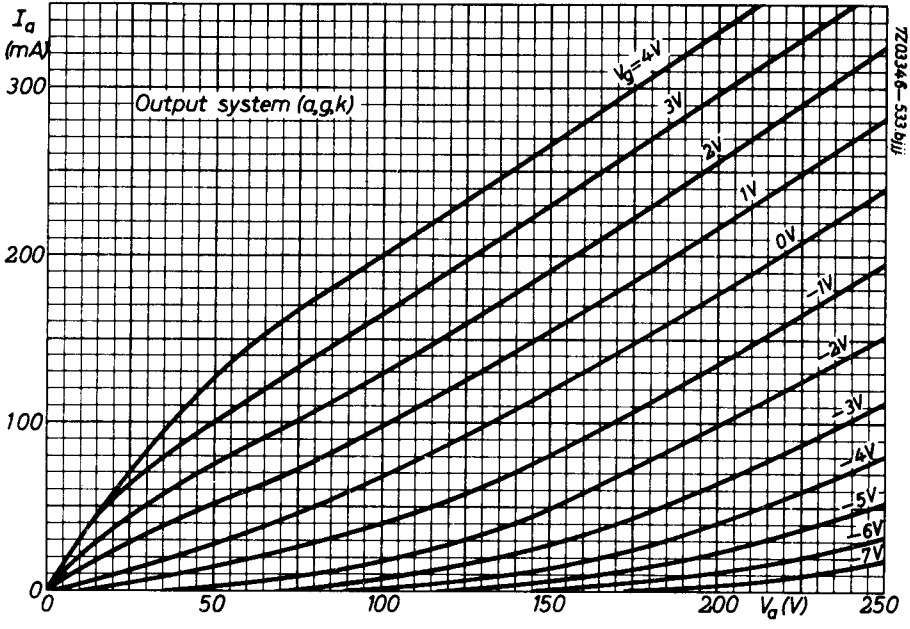
Cascode circuit, Frequency 200 Mc/s

Supply voltage	$V_b$	200	200 V
Cathode resistor	$R_k'$	1200	680 $\Omega$
Anode current	$I_a$	15.5	26.5 mA
Input resistance	$r_{g'}$	910	670 $\Omega$
Input capacitance	$C_i$	11	12 pF
Noise figure	F	2.5	2.5 $kT_0$

Adapted to minimum noise







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