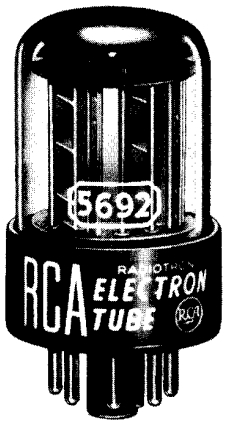
• RCA-5692 •

MEDIUM-MU TWIN TRIODE

RCA-5692 is a medium-mu twin triode designed and manufactured for critical industrial applications. It is particularly useful as a balanced dc amplifier, multivibrator, blocking oscillator, and resistance-coupled amplifier.



In addition to the features illustrated on page 8, this type has its heaters for the two triode units connected in series so that failure of either heater in bridge circuits makes both units inoperative.

The electrical characteristics of the 5692 are similar to those of the 6SN7-GT. The 5692 is recommended as a replacement for the 6SN7-GT only where the operating conditions are within the ratings of the 5692 and only where long life, rigid construction, extreme uniformity, and exceptional stability are needed. If the 5692 is operated at the higher maximum ratings of the 6SN7-GT, the full advantages of the 5692 will not be obtained.

GENERAL DATA

Electrical:

Heater, Pure Tungsten, for Unipotential Cathodes:

Voltage (AC or DC)	6.3 ± 5%*	Volts
Current	0.6	Amp

Direct Interelectrode Capacitances:°

	Min.	Av.	Max.	
Triode Unit No. 1—				
Grid to Plate	3.0	3.5	4.0	μμf
Grid to Cathode	1.8	2.3	2.8	μμf
Plate to Cathode	2.0	2.5	3.0	μμf
Triode Unit No. 2—				
Grid to Plate	2.8	3.3	3.8	μμf
Grid to Cathode	2.1	2.6	3.1	μμf
Plate to Cathode	2.2	2.7	3.2	μμf
Plate of Triode Unit No. 1 to Plate of Triode Unit No. 2	0.31	0.35	0.39	μμf

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-7/8"
Maximum Seated Length	2-5/16"
Maximum Diameter	1-9/32"
Bulb	T-9
Base	Short Intermediate-Shell Octal 8-Pin, with External Barriers, Non-Hygroscopic

INDUSTRIAL SERVICE

Includes applications such as dc amplifiers, audio amplifiers and relaxation oscillators

Values are for Each Unit

Maximum Ratings, *Absolute Values:*

DC Plate Voltage	275 max.	Volts
DC Plate Supply Voltage	330 max.	Volts
Grid Voltage:		
Negative bias value	—1• min. to —100 max.	Volts
Negative peak value	—200 max.	Volts
DC Grid Current	2 max.	Ma
DC Cathode Current	15 max.	Ma
Plate Dissipation	1.75 max.	Watts
Peak Heater-Cathode Voltage:		
Heater negative with respect to cathode	100 max.	Volts
Heater positive with respect to cathode	100 max.	Volts
Ambient Temperature Range	— 55 to +90	°C

Maximum Circuit Value *(for any operating condition)*:

Grid-Circuit Resistance	2 max.	Meg

Characteristics and Range Values:

Heater Volts, 6.3; Plate Volts, 250; Grid Volts, —9

	Min.	Av.	Max.	
Heater Current	0.58	0.6	0.62	Amp
Heater-Cathode Current with heater-cathode voltage of ±100 volts	—	—	5	μa
Plate Current	4.8	6.5	8.2	Ma
Plate Current for grid voltage of —24 volts	—	—	15	μa
Difference in Plate Current between triode units	—	—	1.6	Ma
Reverse Grid Current	—	—	0.2	μa
Amplification Factor	18	20	22	
Plate Resistance	—	9100	—	Ohms
Transconductance	1825	2200	2575	μmhos

Typical Operation—Resistance-Coupled Amplifier (Each Triode Unit):

Plate-Supply Voltage	90			180			300			Volts
Plate Load Resistor	0.05	0.1	0.25	0.05	0.1	0.25	0.05	0.1	0.25	Megohm
Grid Resistor (of following stage)	0.1	0.25	0.5	0.1	0.25	0.5	0.1	0.25	0.5	Megohm
Cathode Resistor	2070	3940	9760	1490	2830	7000	1270	2440	5770	Ohms
Cathode Bypass Capacitor‡	2.66	1.29	0.55	2.86	1.35	0.62	2.96	1.42	0.64	μf
Blocking Capacitor‡	0.029	0.012	0.007	0.032	0.012	0.007	0.034	0.0125	0.0075	μf
Peak Output Voltage†	14	17	18	30	34	36	51	56	57	Volts
Voltage Gain¶	12	13	13	13	14	14	14	14	14	

• For resistance-coupled amplifier applications, the negative bias may be as low as —0.5 volt.

†This peak output voltage is obtained across the grid resistor of the following stage at any frequency within the flat region of the output vs frequency curve, and is for the condition where the signal level is adequate to swing the grid of the resistance-coupled amplifier tube to the point where its grid starts to draw current.

*May deviate ±10% from rated value provided such deviation occurs for less than 2% of the operating time.

°With no external shield. ¶At an output voltage of 5 volts rms.

‡The cathode bypass capacitors and blocking capacitors have been chosen to give output voltages at 100 cps (f_1) which are equal to 0.8 of the mid-frequency value. For any other value of (f_1), multiply the values of cathode bypass and blocking capacitors by $100/f_1$.