

Medium-Mu Triode— Sharp-Cutoff Twin Pentode

DUODECAR TYPE

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC)	6.3 ± 0.6^a volts
Current at heater volts = 6.3	0.600^b amp
Warm-up time (Average)	11 sec

Peak heater-cathode voltage:

Heater negative with respect to cathode. 200 max. volts

Heater positive with respect to cathode. 200^c max. volts

Direct Interelectrode Capacitances:^d

Triode Unit:

Grid to plate	2.0	pf
Input: G_T to (K_T, H)	2.0	pf
Output: P_T to (K_T, IS, H)	1.9	pf

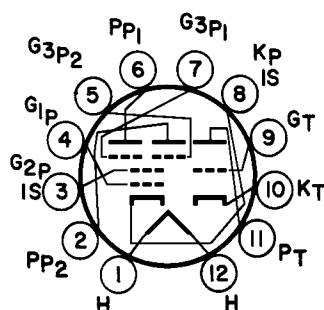
Each Pentode Unit:

G_{3p} to P_p	2.0	pf
G_{3p} to all other electrodes	3.6	pf
G_{1p} to all other electrodes	6.0	pf
P_p to all other electrodes	3.0	pf
G_{3p1} to G_{3p2}	0.026 max.	pf

Mechanical:

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2.375"
Seated Length	1.750" to 2.000"
Diameter	1.062" to 1.188"
Dimensional Outline	See General Section
Bulb	T9
Base	Small-Button Duodecar 12-Pin (JEDEC E12-70)
Basing Designation for BOTTOM VIEW	12ER

- Pin 1—Heater
 Pin 2—Plate of Pentode Unit No.2
 Pin 3—Pentodes Grid No.2, Internal Shield
 Pin 4—Pentodes Grid No.1
 Pin 5—Grid No.3 of Pentode Unit No.2
 Pin 6—Plate of Pentode Unit No.1
 Pin 7—Grid No.3 of Pentode Unit No.1
 Pin 8—Pentodes Cathode, Internal Shield
 Pin 9—Triode Grid
 Pin 10—Triode Cathode
 Pin 11—Triode Plate
 Pin 12—Heater



6BA11

Characteristics, Class A₁ Amplifier:

		Triode Unit	Pentode Units				
			Each		Both		
			Separately ^e		Operating ^f		
Plate Voltage.	250	100	100	100	100	volts	
Grid-No.3 Voltage.	-	0	0	-10	0	volts	
Grid-No.2 Voltage.	-	67.5	67.5	67.5	67.5	volts	
Grid-No.1 Voltage.	-11	0	g	g	g	volts	
Amplification Factor	18	-	-	-	-		
Grid No.3 Transconductance.	-	-	450	-	-	μ mhos	
Grid No.1 Transconductance.	1800	1700	-	-	-	μ mhos	
Plate Current.	5	-	2.5	0	2.5	ma	
Grid No.2 Current.	-	-	-	7	4.4	ma	
Grid-No.3 Voltage (Approx.)							
for plate $\mu a = 100$	-	-	-3.2	-	-	volts	
Grid-No.1 Voltage (Approx.)							
for plate $\mu a = 100$	-18	2.3	-	-	-	volts	

AMPLIFIER — Class A₁

	Triode Unit	Pentode Unit	
Maximum Ratings, Design-Maximum Values:			
Plate Voltage.	300 max.	300 max.	volts
Grid-No.3 (Suppressor-Grid) Voltage:			
Peak positive value.	-	50 max.	volts
DC negative value.	-	50 max.	volts
DC positive value.	-	3 max.	volts
Grid-No.2 (Screen-Grid) Voltage. .	-	150 max.	volts
Grid-No.1 (Control-Grid) Voltage:			
Negative-bias value.	-	50 max.	volts
Cathode Current.	20	12 max.	ma
Grid-No.2 Input.	-	0.75 max.	watts
Plate Dissipation (Each Plate). . .	1.5	1.1 max.	watts

Maximum Circuit Values:

Grid-No.3-Circuit Resistance			
(Each Grid).	-	0.5 max.	megohm
Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.25 max.	0.5 max.	megohm
For cathode-bias operation . . .	1 max.	0.5 max.	megohm

^a For parallel heater operation.

^b For series heater operation current must be limited to 0.600 ± 0.040 amperes.

^c The dc component must not exceed 100 volts.

^d without external shield.

^e Plate and grid 3 of opposite unit grounded.

^f voltages and plate current apply to each section.

^g Adjusted to give a dc grid-No.1 current of 100 microamperes.

