

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

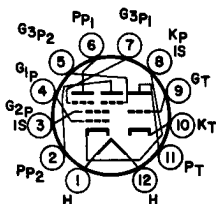
Each Pentode Unit:

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"
Diameter1.062" to 1.188"
Dimensional Outline	See <i>General Section</i>
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 Separately ^a		Both 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	-	-	μmhos
Grid No.1 Transconductance.	1800	1700	-	-	-	μmhos
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.

