Beam Power Tube—Sharp-Cutoff Pentode

DUODECAR TYPE

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:		
Voltage (AC or DC)	6.3 ±0.6	volts
Current at heater volts = 6.3	1.200	amp
Peak heater–cathode voltage (Each unit):		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200[a] max.	volts
Direct Interelectrode Capacitances (Approx.):[b]		
Beam Power Unit:		
Grid No.1 to plate	0.26	pf
Grid No.1 to cathode & grid No.3, grid No.2, internal shield, and heater	12.0	pf
Plate to cathode & grid No.3, grid No.2, internal shield, and heater	12.0	pf
Pentode Unit:		
Grid No.1 to plate	0.034	pf
Grid No.3 to plate	2.8	pf
Grid No.1 to cathode, grid No.2, grid No.3, internal shield, and heater	6.5	pf
Grid No.3 to cathode, grid No.1, grid No.2, plate, internal shield, and heater	7.5	pf
Grid No.1 to grid No.3	0.24	pf
Plate of beam power unit to plate of pentode unit	0.12	pf

Characteristics, Class A_1 Amplifier (Pentode Unit):

Plate Supply Voltage	150	volts
Grid–No.3 Supply Voltage	*Connected to cathode at socket*	
Grid–No.2 Supply Voltage	100	volts
Cathode Resistor	560	ohms
Plate Resistance (Approx.)	0.15	megohm
Transconductance, Grid No.1 to Plate	1000	μmhos
Transconductance, Grid No.3 to Plate	400	μmhos
Plate Current	1.3	ma
Grid–No.2 Current	2	ma
Grid–No.1 Voltage (Approx.) for plate μa = 10	−4.5	volts
Grid–No.3 Voltage (Approx.) for plate μa = 10	−4.5	volts

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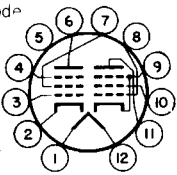
Mechanical:

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"
Bulb	T9
Base	Small-Button Duodecar 12-Pin (JEDEC No.E12-70)
Basing Designation for BOTTOM VIEW	12BU

Pin 1 – Heater
Pin 2 – Pentode Cathode
Pin 3 – Pentode Grid No.1
Pin 4 – Pentode Grid No.3
Pin 5 – Internal Shield
Pin 6 – Pentode Plate
Pin 7 – Pentode Grid No.2



Pin 8 – Beam Power Grid No.1
Pin 9 – Beam Power Cathode, Beam Power Plate
Pin 10 – Beam Power Grid No.2
Pin 11 – Beam Power Plate
Pin 12 – Heater

PENTODE UNIT — FM SOUND DETECTOR

Maximum Ratings, *Design-Maximum Values:*

PLATE VOLTAGE	330 max.	volts
GRID-No.3 (SUPPRESSOR-GRID) VOLTAGE	28 max.	volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	330 max.	volts
GRID-No.2 VOLTAGE	*See Grid-No.2 Input Rating Chart* at front of Receiving Tube Section	
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Positive-bias value	0 max.	volts
PLATE DISSIPATION	1.7 max.	watts
GRID-No.2 INPUT:		
For grid-No.2 voltages up to 165 volts	1.1 max.	watts
For grid-No.2 voltages between 165 and 330 volts	*See Grid-No.2 Input Rating Chart* at front of Receiving Tube Section	

BEAM POWER UNIT — AMPLIFIER — Class A_1

Maximum Ratings, *Design-Maximum Values:*

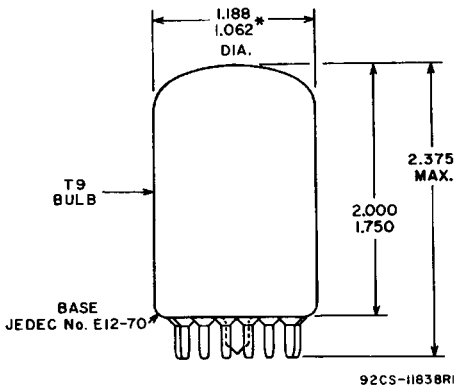
PLATE VOLTAGE	150 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	135 max.	volts
AVERAGE CATHODE CURRENT	65 max.	ma
PLATE DISSIPATION	6.5 max.	watts
GRID-No.2 INPUT	1.8 max.	watts

Typical Operation and Characteristics:

Plate Voltage	120	volts
Grid-No.2 Voltage	110	volts
Grid-No.1 (Control-Grid) Voltage	-8	volts
Peak AF Grid-No.1 Voltage	8	volts

Zero-Signal Plate Current.	49	ma
Max.-Signal Plate Current.	50	ma
Zero-Signal Grid-No.2 Current.	4	ma
Max.-Signal Grid-No.2 Current.	8.5	ma
Plate Resistance (Approx.)	10000	ohms
Transconductance	7500	μmhos
Load Resistance.	2500	ohms
Total Harmonic Distortion.	10	per cent
Max.-Signal Power Output	2.3	watts

[a] The dc component must not exceed 100 volts.
[b] Without external shield.



DIMENSIONS IN INCHES

* APPLIES TO MINIMUM DIAMETER EXCEPT IN AREA OF SEAL.