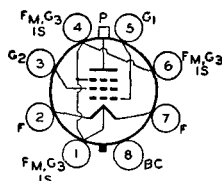


terminal), 0.05 *max* μf ; cathode to shell, 70 μf . Maximum CCS ratings as RF POWER AMPLIFIER AND OSCILLATOR, CLASS C TELEGRAPHY: dc plate volts, 500 *max*; dc plate milliamperes, 40 *max*; plate dissipation, 12 *max* watts; peak heater-cathode volts, ≈ 90 *max*. Characteristics as CLASS A₁ AMPLIFIER: plate-supply volts, 250; cathode resistor, 100 ohms; plate milliamperes, 20; transconductance, 8000 μmhos ; amplification factor, 48; plate resistance (approx.) 5600 ohms. The 2C43 is used principally for renewal purposes.



BEAM POWER TUBE

Glass-octal type having quick-heating coated filament used as af power amplifier and modulator and as rf power amplifier and oscillator in mobile- and emergency-communications

2E24

equipment. May be used with full input up to 125 Mc and with reduced input up to 175 Mc. Class C Telephony maximum plate dissipation, CCS 10 watts, ICAS 13.5 watts.

FILAMENT VOLTAGE (AC/DC).....	6.3 $\pm$ 10%	volts
FILAMENT CURRENT.....	0.65	ampere
FILAMENT HEATING TIME.....	less than 2	seconds
TRANSCONDUCTANCE*.....	3200	μmhos
MU-FACTOR, Grid No.2 to Grid No.1**.....	7.5	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid No.1 to plate.....	0.11 <i>max</i>	μf
Grid No.1 to filament mid-tap, grid No.3, internal shield, grid No.2, and base sleeve.....	8.5	μf
Plate to filament mid-tap, grid No.3, internal shield, grid No.2, and base sleeve.....	6.5	μf
BULB TEMPERATURE (At hottest point).....	210 <i>max</i>	$^{\circ}\text{C}$

* Plate volts, 500; grid-No.2 volts, 200; plate milliamperes, 16.

** Plate and grid-No.2 volts, 200; plate milliamperes, 16.

AF POWER AMPLIFIER AND MODULATOR—Class AB₂

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE.....	400 <i>max</i>	500 <i>max</i>	volts
DC GRID-NO.2 (SCREEN-GRID) VOLTAGE.....	200 <i>max</i>	200 <i>max</i>	volts
MAXIMUM-SIGNAL DC PLATE CURRENT.....	75 <i>max</i>	75 <i>max</i>	ma
MAXIMUM-SIGNAL PLATE INPUT.....	30 <i>max</i>	37.5 <i>max</i>	watts
MAXIMUM-SIGNAL GRID-NO.2 INPUT.....	2.5 <i>max</i>	2.5 <i>max</i>	watts
PLATE DISSIPATION.....	10 <i>max</i>	13.5 <i>max</i>	watts

Typical Operation (Values are for 2 tubes):

DC Plate Voltage.....	400	500	volts
DC Grid-No.2 Voltage.....	125	125	volts
DC Grid-No.1 (Control-Grid) Voltage†.....	-15	-15	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage.....	82	82	volts
Zero-Signal DC Plate Current.....	18	20	ma
Maximum-Signal DC Plate Current.....	150	150	ma
Zero-Signal DC Grid-No.2 Current.....	0.6	0.6	ma
Maximum-Signal DC Grid-No.2 Current.....	26	28	ma
Effective Load Resistance (Plate to plate).....	7000	9000	ohms
Maximum-Signal Driving Power (Approx.).....	0.43	0.46	watt
Maximum-Signal Power Output (Approx.).....	42	54	watts

Maximum Circuit Values (CCS or ICAS conditions):

Grid-No.1-Circuit Resistance.....	30000† <i>max</i>	ohms
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‡ Averaged over any audio-frequency cycle of sine-wave form.

† For ac filament supply.

‡ For operation at less than maximum ratings, this value may be as high as 100000 ohms.

PLATE-MODULATED RF POWER AMPLIFIER—Class C Telephony

Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE.....	400 <i>max</i>	500 <i>max</i>	volts

RCA Transmitting Tubes

DC GRID-NO.2 VOLTAGE.....	200 max	200 max	volts
DC GRID-NO.1 VOLTAGE.....	-175 max	-175 max	volts
DC PLATE CURRENT.....	60 max	70 max	ma
DC GRID-NO.1 CURRENT.....	3.5 max	3.5 max	ma
PLATE INPUT.....	20 max	27 max	watts
GRID-NO.2 INPUT.....	1.7 max	2.3 max	watts
PLATE DISSIPATION.....	6.7 max	9 max	watts

Typical Operation:

DC Plate Voltage.....	400	500	volts
DC Grid-No.2 Voltage [⊙]	180	180	volts
From a series resistor of.....	27500	40000	ohms
DC Grid-No.1 Voltage [†]	-45	-45	volts
From a grid-No.1 resistor of.....	18000	18000	ohms
Peak RF Grid-No.1 Voltage.....	61	62	volts
DC Plate Current.....	50	54	ma
DC Grid-No.2 Current.....	8	8	ma
DC Grid-No.1 Current (Approx.).....	2.5	2.5	ma
Driving Power (Approx.).....	0.15	0.16	watt
Power Output (Approx.).....	13.5	18	watts

Maximum Circuit Values (CCS or ICAS conditions):

Grid-No.1-Circuit Resistance.....	30000 [†] max	ohms
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⊙ Obtained preferably from separate source modulated along with plate supply, or from the modulated plate supply through series resistor of value shown.

† For ac filament supply.

⊕ Obtained preferably from grid-No.1 resistor or from a combination of grid-No.1 resistor with either fixed supply or cathode resistor.

‡ For operation at less than maximum ratings, this value may be as high as 100000 ohms.

RF POWER AMPLIFIER AND OSCILLATOR—Class C Telegraphy[#] and

RF POWER AMPLIFIER—Class C FM Telephony

Maximum Ratings:

	CCS	ICAS	
DC PLATE VOLTAGE.....	500 max	600 max	volts
DC GRID-NO.2 VOLTAGE.....	200 max	200 max	volts
DC GRID-NO.1 VOLTAGE.....	-175 max	-175 max	volts
DC PLATE CURRENT.....	75 max	85 max	ma
DC GRID-NO.1 CURRENT.....	3.5 max	3.5 max	ma
PLATE INPUT.....	30 max	40 max	watts
GRID-NO.2 INPUT.....	2.5 max	2.5 max	watts
PLATE DISSIPATION.....	10 max	13.5 max	watts

Typical CCS Operation:

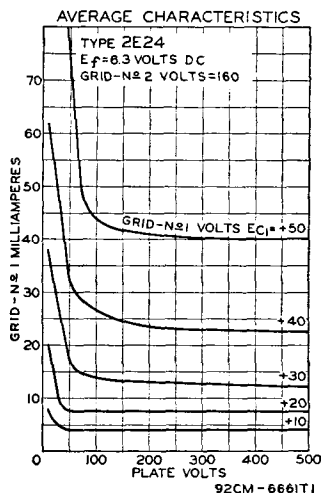
	125 Mc	160 Mc	
DC Plate Voltage.....	400	350	volts
DC Grid-No.2 Voltage [⊙]	200	170	volts
From a series resistor of.....	20000	29000	ohms
DC Grid-No.1 Voltage [†]	-45	-50	volts
From a grid-No.1 resistor of.....	15000	15000	ohms
Peak RF Grid-No.1 Voltage.....	62	65	volts
DC Plate Current.....	75	85	ma
DC Grid-No.2 Current.....	10	10.5	ma
DC Grid-No.1 Current.....	3	3	ma
Driving Power (Approx.).....	0.19	0.2	watts
Power Output (Approx.).....	20	20	watts

Typical ICAS Operation:

	125 Mc	
DC Plate Voltage.....	600	volts
DC Grid-No.2 Voltage [⊙]	195	volts
From a series resistor of.....	40500	ohms
DC Grid-No.1 Voltage [†]	-50	volts
From a grid-No.1 resistor of.....	16700	ohms
Peak RF Grid-No.1 Voltage.....	71	volts
DC Plate Current.....	66	ma
DC Grid-No.2 Current.....	10	ma
DC Grid-No.1 Current.....	3	ma
Driving Power (Approx.).....	0.21	watt
Power Output (Approx.).....	27	watts

Maximum Circuit Values (CCS or ICAS conditions):

- Grid-No.1-Circuit Resistance..... 30000† max ohms
- # Key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.
- * Obtained preferably from separate source, or from the plate-supply voltage with a voltage divider, or through a series resistor of value shown. Grid-No.2 voltage must not exceed 600 volts under key-up conditions.
- † For ac filament supply.
- Obtained from fixed supply, by grid-No.1 resistor, by cathode resistor, or by combination methods.
- ‡ For operation at less than maximum ratings, this value may be as high as 100000 ohms.



OPERATING CONSIDERATIONS

Type 2E24 requires Octal socket and may be mounted in vertical position with base up or down, or in horizontal position with pins 3 and 7 in vertical plane. Effective rf grounding and simplified shielding of input from output are facilitated by the base sleeve with separate base-pin connection and the single base-pin connection for filament mid-tap, grid No.3, and internal shield. OUTLINE 15, *Outlines* Section.

For operation at 150 Mc, plate voltage and plate input should be reduced to 83 per cent of maximum ratings; at 160 Mc, to 75 per cent; at 175 Mc, to 68 per cent. Plate shows no color when the tube is operated at maximum CCS or ICAS ratings.

