



Excellence in Electronics

TYPE
CK5656

The CK5656 is a heater-cathode type, double tetrode of miniature construction, suitable for push-pull Class A and Class C RF amplifier service up to a frequency of 400 megacycles. The screen grids for the two sections are connected internally and are by-passed to the common cathode terminals by an internal condenser of approximately 15 $\mu\mu\text{f}$ capacitance. This terminal arrangement, by reducing the RF impedance between the separate screen grids and cathodes, permits the use of push-pull RF circuits which provide higher input impedance and lower plate circuit losses than other miniature tube types in the 200 to 400 megacycle frequency range.

MECHANICAL DATA

ENVELOPE: T-6 1/2 Glass

BASE: Miniature Button 9-Pin

TERMINAL CONNECTIONS:

- | | |
|----------------------------|----------------------------|
| Pin 1 Grid #2 (Both Units) | Pin 6 Cathode (Both Units) |
| Pin 2 Grid #1 (Unit #1) | Pin 7 Plate (Unit #2) |
| Pin 3 Grid #1 (Unit #2) | Pin 8 Plate (Unit #1) |
| Pin 4 Heater | Pin 9 Cathode (Both Units) |
| Pin 5 Heater | |

MOUNTING POSITION: Any

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES: Each Unit (Without External Shield) ($\mu\mu\text{f}$ s)

Grid #1 to Plate	0.06 max.
Grid #1 to All Others Except Plate	3.6
Plate to All Others Except Grid	1.5
Common Screen to Cathode Internal By-pass Condenser (approx.)	15

RATINGS - ABSOLUTE MAXIMUM VALUES - CLASS A1:

Heater Voltage (ac or dc)	6.3 \pm 10% volts
Plate Voltage	250 volts
Grid #2 Voltage	165 volts
Plate Dissipation, Each Section	3.0 watts
Grid #2 Dissipation	1.5 watts
Plate Current, Each Section	20 ma.
Heater-Cathode Voltage	100 volts
DC Grid #1 Circuit Resistance, Each Section	100,000 ohms

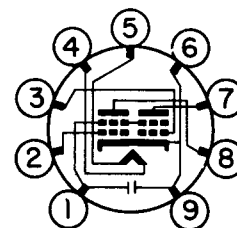
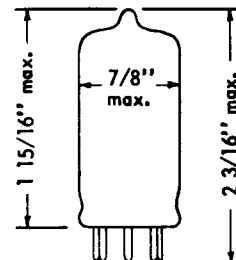
CHARACTERISTICS AND TYPICAL OPERATION - CLASS A1: (Each Unit)

Heater Voltage (ac or dc)	6.3 volts
Heater Current (Total For Both Units)	0.40 amps.
Plate Voltage	150 volts
Grid #2 Voltage	120 volts
Grid #1 Voltage	-2.0 volts
Plate Resistance (approx.)	60,000 ohms
Transconductance	5800 μmhos
Plate Current	15.5 ma.
Grid #2 Current	2.7 ma.
Grid #1 Voltage (approx.) for Plate Current = 200 μa .	-8.5 volts

RATINGS ABSOLUTE MAXIMUM VALUES - PUSH-PULL CLASS C TELEGRAPHY: (Cont. Service)

(Values are total for both units unless otherwise noted)

Heater Voltage (ac or dc)	6.3 \pm 10% volts
Plate Voltage	220 volts
Grid #2 Voltage	165 volts
Negative Grid #1 Voltage	-50 volts
Plate Dissipation, Each Section	2.5 watts
Grid #2 Dissipation	1.5 watts
Plate Current, Each Section	17.5 ma.
Grid #1 Current, Each Section	4.0 ma.
Heater-Cathode Voltage	100 volts
DC Plate Input Power	7.0 watts
DC Grid #1 Circuit Resistance, Each Section	50,000 ohms



BOTTOM VIEW

9F

Tentative Data

RAYTHEON MANUFACTURING COMPANY

RECEIVING AND CATHODE RAY TUBE OPERATIONS



DOUBLE TETRODE

ELECTRICAL DATA (Cont'd)

RATINGS ABSOLUTE MAXIMUM VALUES - PUSH-PULL CLASS C TELEGRAPHY INTERMITTENT "PUSH-to-TALK" SERVICE :

(Values are total for both units unless otherwise noted)

Heater Voltage (ac or dc)	6.3 ± 10% volts
Plate Voltage	250 volts
Grid #2 Voltage	165 volts
Negative Grid #1 Voltage	-50 volts
Plate Dissipation, Each Section	3.5 watts
Grid #2 Dissipation	1.8 watts
Plate Current, Each Section	25 ma.
Grid #1 Current, Each Section	4.0 ma.
Heater-Cathode Voltage	100 volts
DC Plate Input Power	11 watts
DC Grid #1 Circuit Resistance, Each Section	50,000 ohms

CHARACTERISTICS AND TYPICAL OPERATION - PUSH-PULL CLASS C 225 MEGACYCLE RF AMPLIFIER

INTERMITTENT "PUSH-to-TALK" SERVICE :

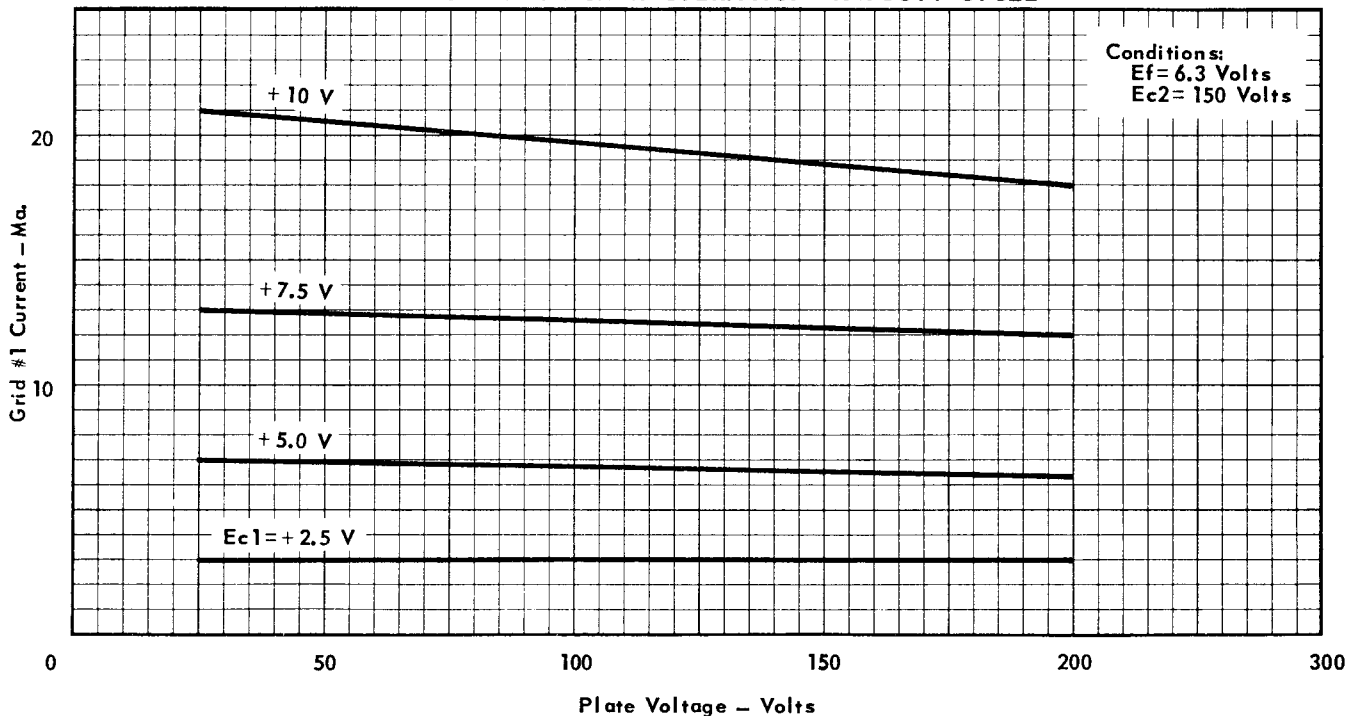
(Values are total for both units unless otherwise noted)

Heater Voltage (ac or dc)	6.3 volts
Heater Current	0.40 amps.
Plate Voltage	220 volts
Grid #2 Voltage (approx.) ●	110 volts
DC Grid #1 Voltage	-15 volts
or Separate Grid #1 Resistance for Each Section ■	5,000 ohms
Peak RF Grid #1 to Grid #1 Voltage	50.0 volts
Plate Current	45 ma.
Grid #2 Current	10.5 ma.
Grid #1 Current, Each Section	3.0 ma.
DC Plate Input Power	10 watts
Useful RF Power Output, 225 Mc.	4.6 watts

● Adjust for the required plate current.

■ It is recommended that the push-pull RF grid signal be carefully balanced. The use of a separate dc grid resistance for each section from the rectified grid current, provides some compensation for unbalanced RF grid drive voltage.

AVERAGE PLATE CHARACTERISTICS - 10% DUTY CYCLE

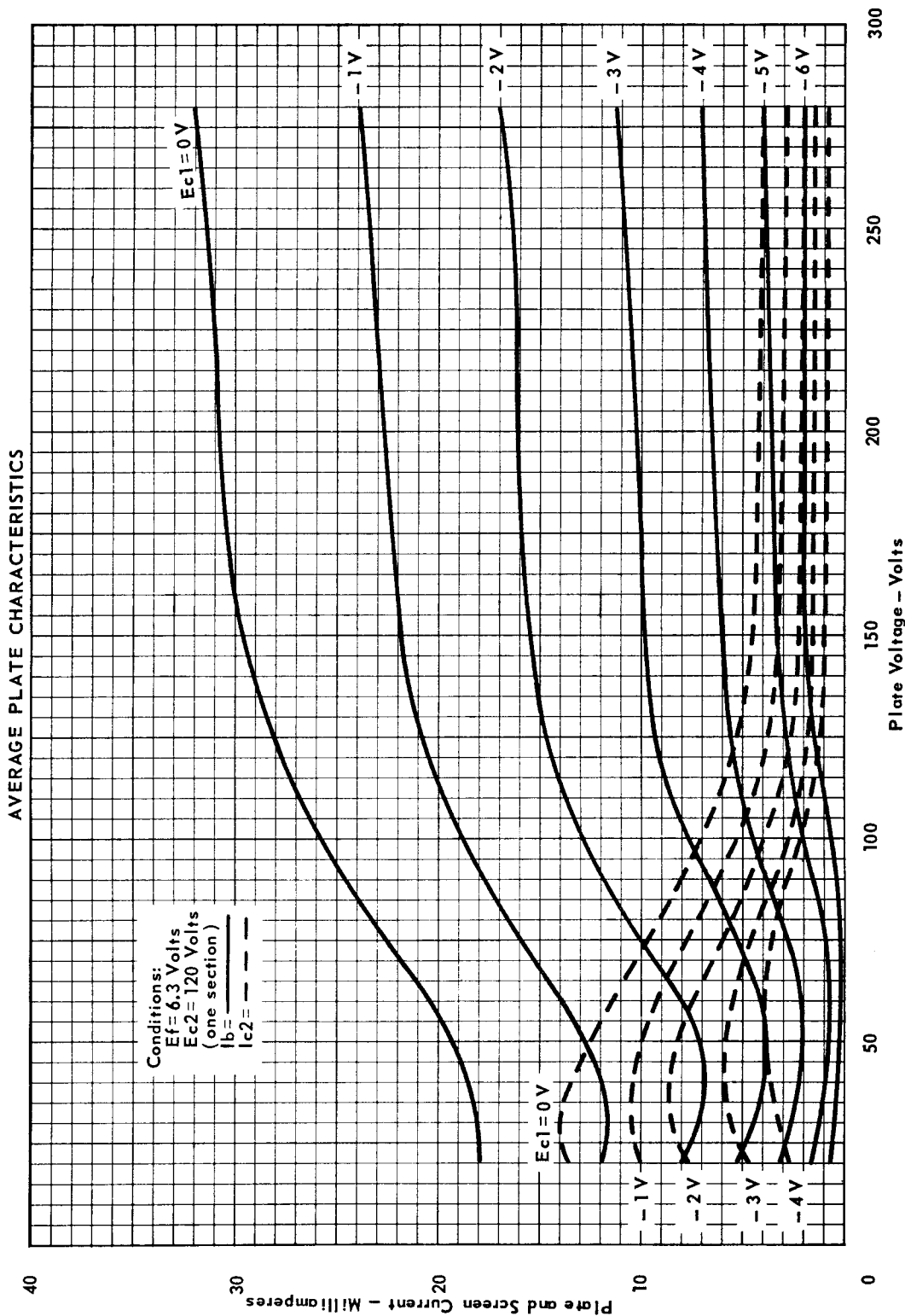


RAYTHEON MANUFACTURING COMPANY

RECEIVING AND CATHODE RAY TUBE OPERATIONS



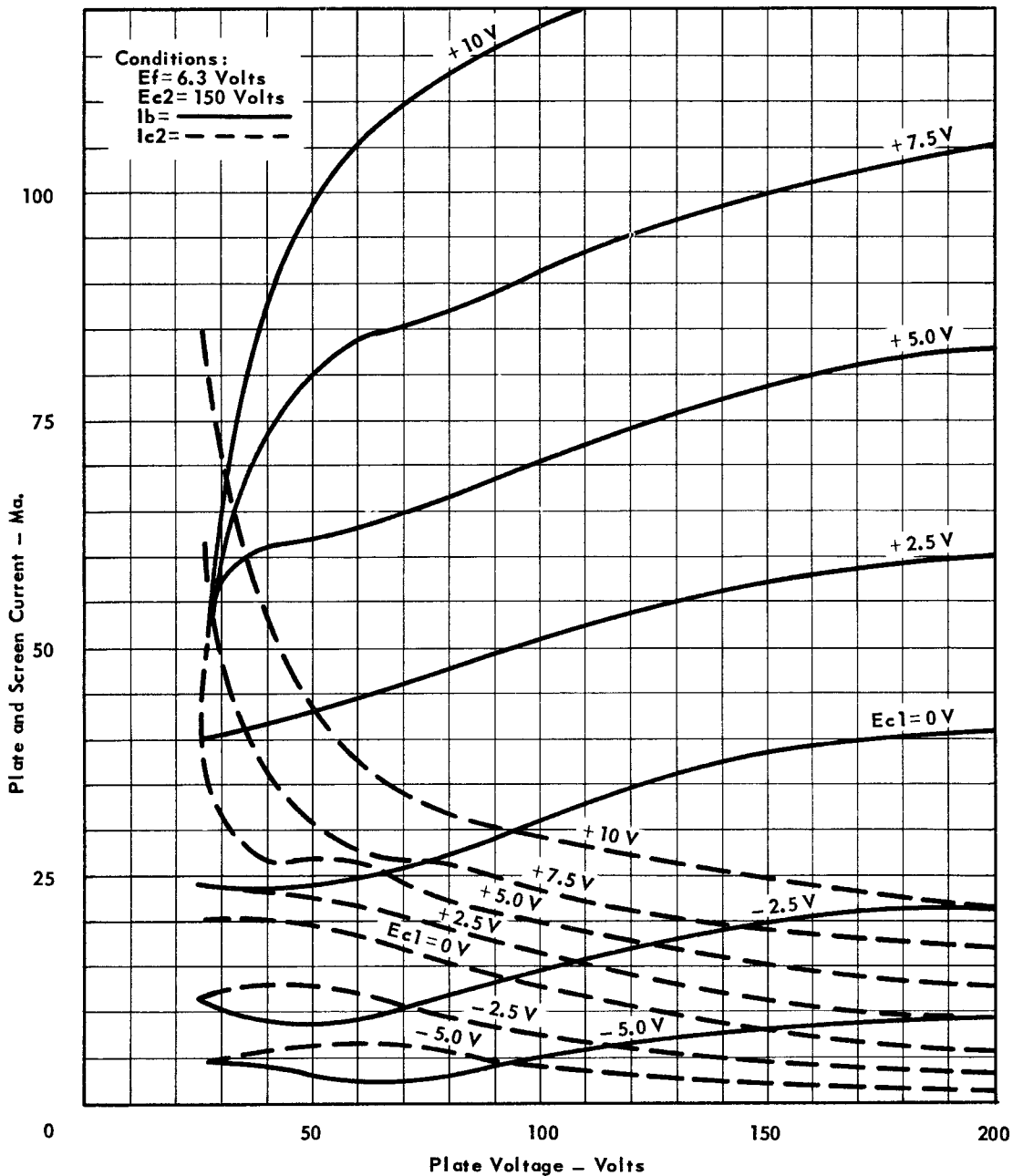
DOUBLE TETRODE





DOUBLE TETRODE

AVERAGE PLATE CHARACTERISTICS - 10% DUTY CYCLE



RAYTHEON MANUFACTURING COMPANY

RECEIVING AND CATHODE RAY TUBE OPERATIONS