RCA MANUFACTURING COMPANY, INC.
A RADIO CORPORATION OF AMERICA SUBSIDIARY
Harrison, New Jersey

RCA RADIOTRON
DIVISION

APPLICATION NOTE No.66
September 29, 1936
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APPLICATION NOTE
ON
EQUAL PLATE AND SCREEN VOLTAGE OPERATION OF THE 6L6

Equal plate- and screen-voltage operation of a power output tetrode or pentode is desirable because (1) the plate current of the output tube can be used to obtain proper excitation of the field coil of a loudspeaker and (2) inverse-feedback circuits can be employed to reduce distortion and the effects of variable speaker impedance. Inverse-feedback circuits reduce the plate impedance of a tube; therefore, adequate filtering is required in both plate- and screen-supply leads. To reduce the filtering required, it is economical to obtain the plate and the screen voltage from the same point on the power-supply unit.

The attached curves show the operating conditions at the grid-current point for Class A_1 operation of the type 6L6 tube when $E_b = E_{c2}$; one set of curves is for single-tube operation and the other, for push-pull operation. These curves were calculated from ideal vacuum-tube equations and are useful for determining approximate operating conditions throughout a practical range of B-supply voltages. However, the effects of plate, screen, and grid-bias regulation introduce some uncertainty into the results as determined from the curves. Final adjustment of operating conditions should, therefore, be made on the basis of measured data.

The plate and screen dissipation of the 6L6 should not exceed 24 watts; that of the screen, itself, should not exceed 3.5 watts. Screen dissipation increases with power output because of rectification in the screen circuit; plate dissipation decreases with increasing power output. Hence, the maximum screen dissipation value should not be exceeded with full signal applied and the maximum plate and screen dissipation value should not be exceeded when no signal is applied.

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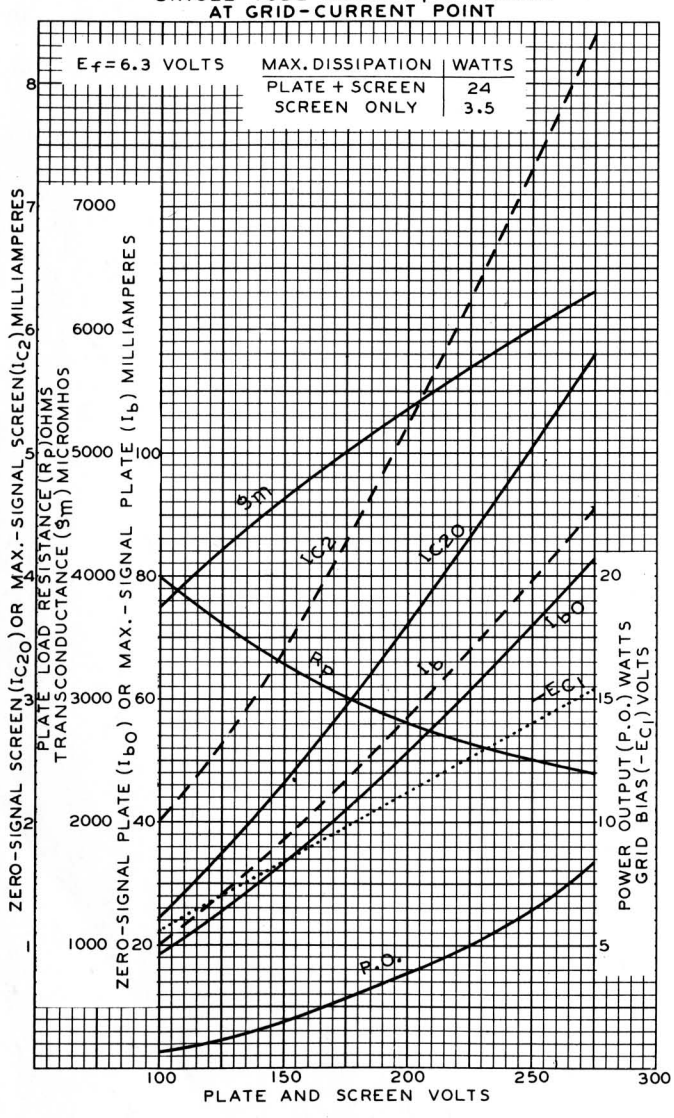
RCA Cunningham Radiotron RADIO TUBES

RCA-6L6

APPROXIMATE OPERATION CHARACTERISTICS

SINGLE-TUBE CLASS A_1 OPERATION
AT GRID-CURRENT POINT



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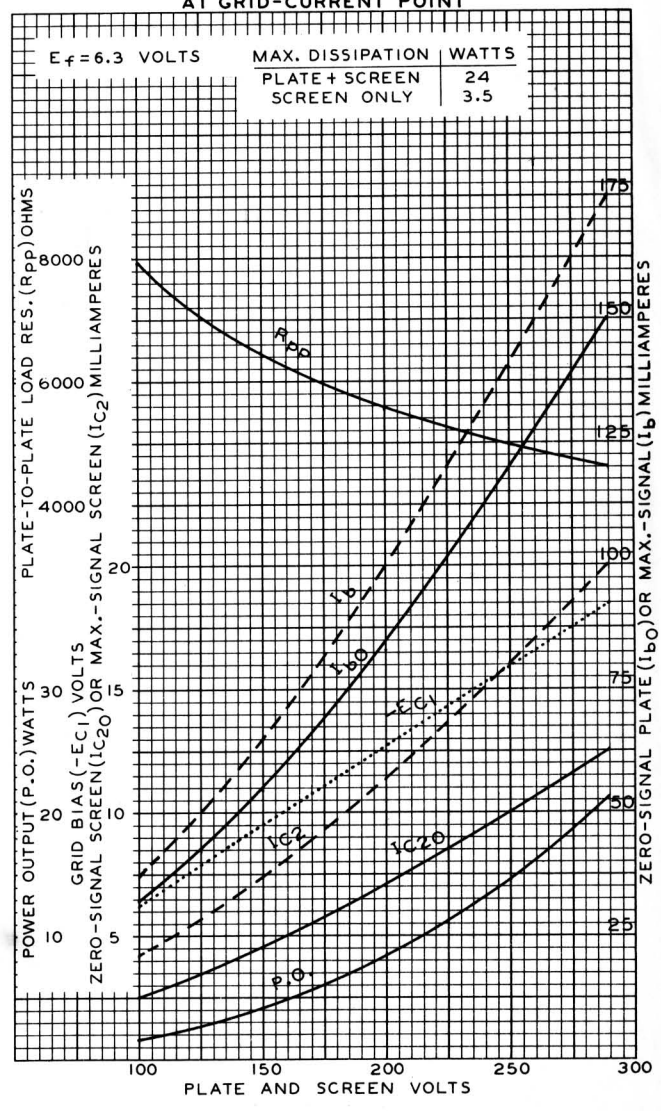
RCA Cunningham Radiotron RADIO TUBES

RCA-6L6

APPROXIMATE OPERATION CHARACTERISTICS

PUSH-PULL CLASS A_1 OPERATION
AT GRID-CURRENT POINT



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