Compactron Twin Pentode

8CB11

■ COLOR TV TYPE

■ TRANSCONDUCTANCE = 13000 MICROMHOS

The 8CB11 is a compactron containing two sharp-cutoff pentodes. It is intended primarily for intermediate-frequency amplifier service in color television receivers, and is also useful for bandpass amplifier, burst amplifier, and low-level video amplifier applications.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC★	8.4	Volts
Heater Current●	0.6 ± 0.04	Amperes
Heater Warm-up Time, average♦	11	Seconds

Direct Interelectrode Capacitances, approximate§

Section 1

Grid-Number 1 to Plate: (1g1 to 1p)	0.028	pf
Input: 1g1 to (h + 1k + 1g2 + 1g3 + 2g3 + i.s.)	12	pf
Output: 1p to (h + 1k + 1g2 + 1g3 + 2g3 + i.s.)	2.6	pf

Section 2

Grid-Number 1 to Plate: (2g1 to 2p)	0.02	pf
Input: 2g1 to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	12	pf
Output: 2p to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	2.8	pf

Coupling

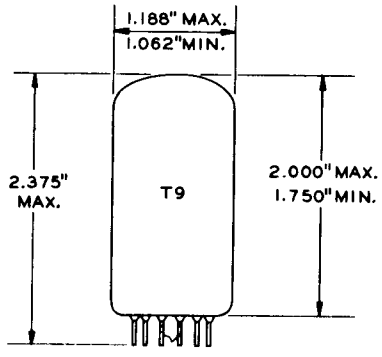
Plate, Section 1, to Plate, Section 2: (1p to 2p), maximum	0.004	pf
Grid-Number 1, Section 1, to Plate, Section 2: (1g1 to 2p), maximum	0.001	pf
Grid-Number 1, Section 2, to Plate, Section 1: (2g1 to 1p), maximum	0.002	pf
Grid-Number 1, Section 1, to Grid-Number 1, Section 2: (1g1 to 2g1), maximum	0.001	pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-58

Maximum Diameter	1.188	Inches
Minimum Diameter	1.062	Inches
Maximum Over-all Length	2.375	Inches
Maximum Seated Height	2.000	Inches
Minimum Seated Height	1.750	Inches

PHYSICAL DIMENSIONS

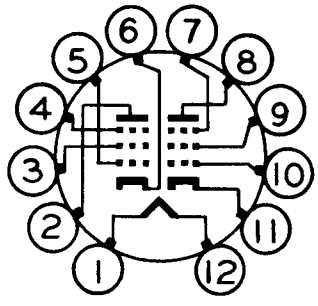


EIA 9-58

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Plate (Section 2)
Pin 3 - Grid Number 2 (Screen) (Section 2)
Pin 4 - Grid Number 3 (Suppressor) (Section 2)
Pin 5 - Grid Number 1 (Section 2)
Pin 6 - Cathode (Section 2)
Pin 7 - Grid Number 3 (Suppressor) (Section 1) and Internal Shield
Pin 8 - Plate (Section 1)
Pin 9 - Grid Number 2 (Screen) (Section 1)
Pin 10 - Grid Number 1 (Section 1)
Pin 11 - Cathode (Section 1)
Pin 12 - Heater

BASING DIAGRAM



EIA 12DM

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, Each Section

Plate Voltage	330	Volts
Screen Supply Voltage	330	Volts
Screen Voltage - See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	3.1	Watts
Screen Dissipation	0.65	Watts
Heater-Cathode Voltage		
Heater Positive with respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	0.25	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, Each Section

Plate Voltage	125	Volts
Suppressor, Connected to Cathode at Socket		
Screen Voltage	125	Volts
Cathode-Bias Resistor	56	Ohms
Plate Resistance, approximate	0.2	Megohms
Transconductance	13000	Micromhos
Plate Current	11	Milliamperes
Screen Current	3.8	Milliamperes
Grid-Number 1 Voltage, approximate		
Ib = 20 Microamperes	−3	Volts

NOTES

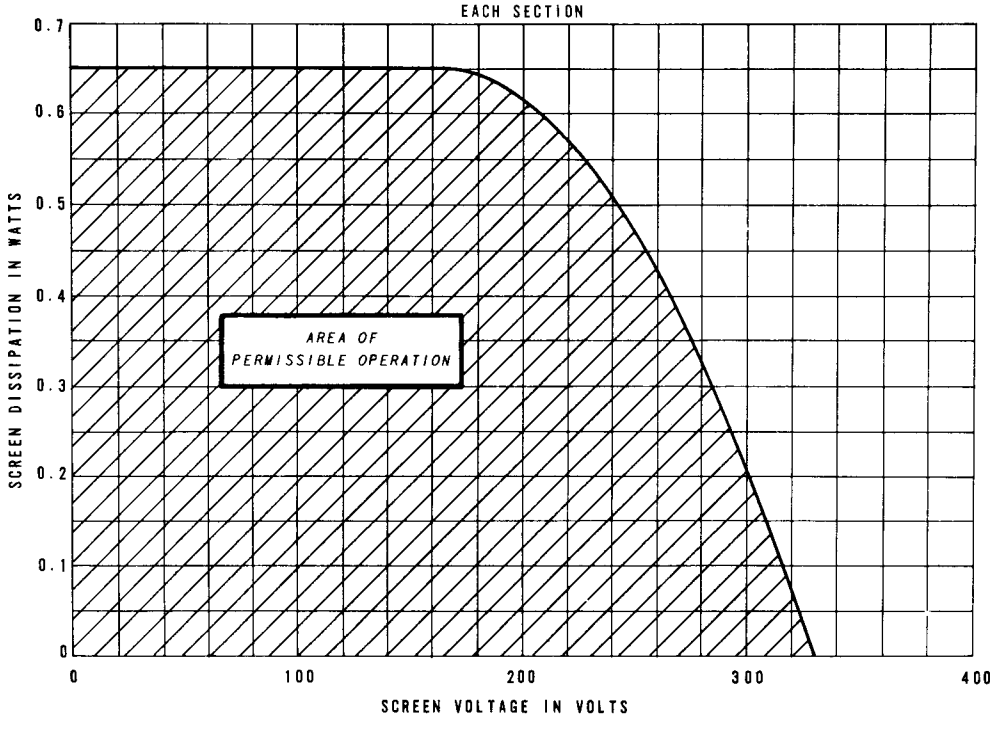
★ Heater voltage for a bogey tube at If = 0.6 amperes.

● The equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.

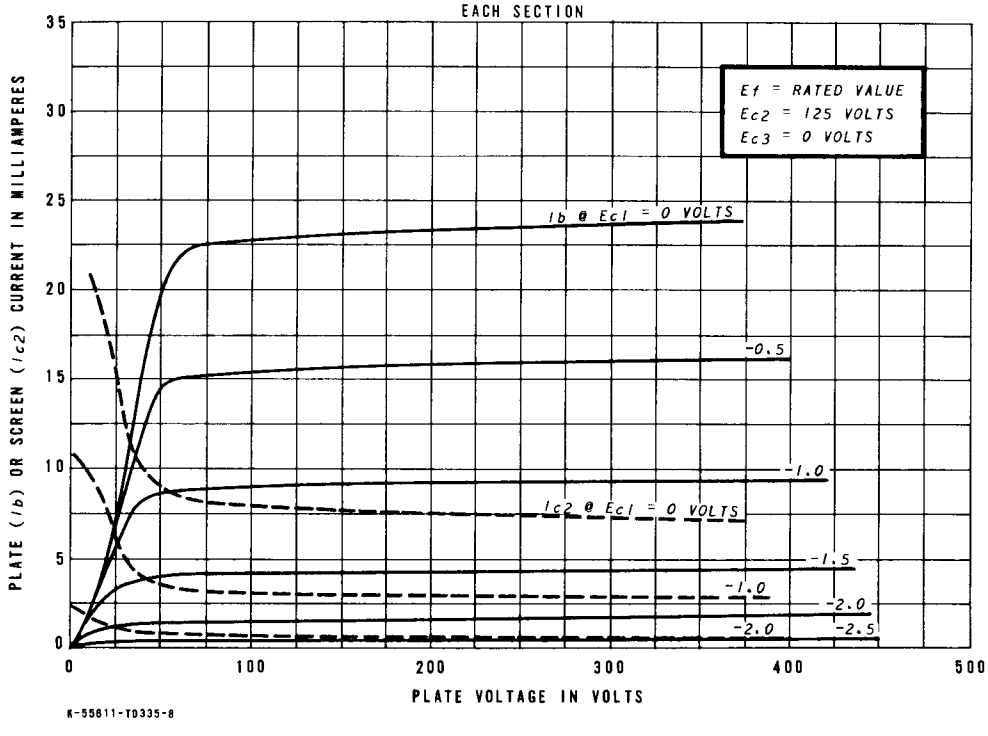
♦ The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.

§ With external shield (EIA 309) connected to cathode of section under test.

SCREEN RATING CHART



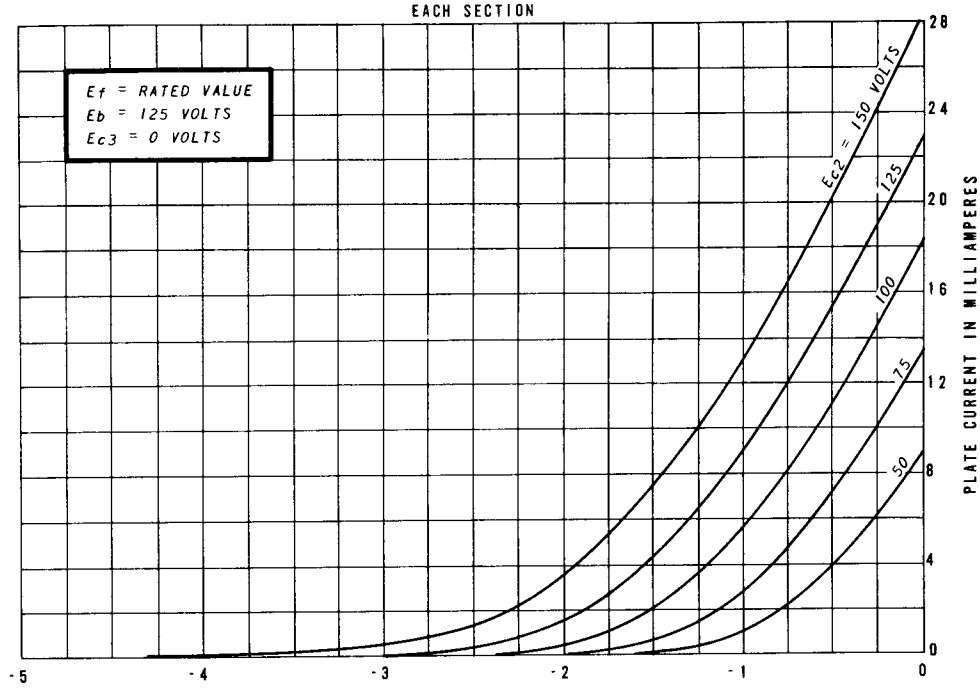
AVERAGE PLATE CHARACTERISTICS



K-55811-TD335-8

AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION



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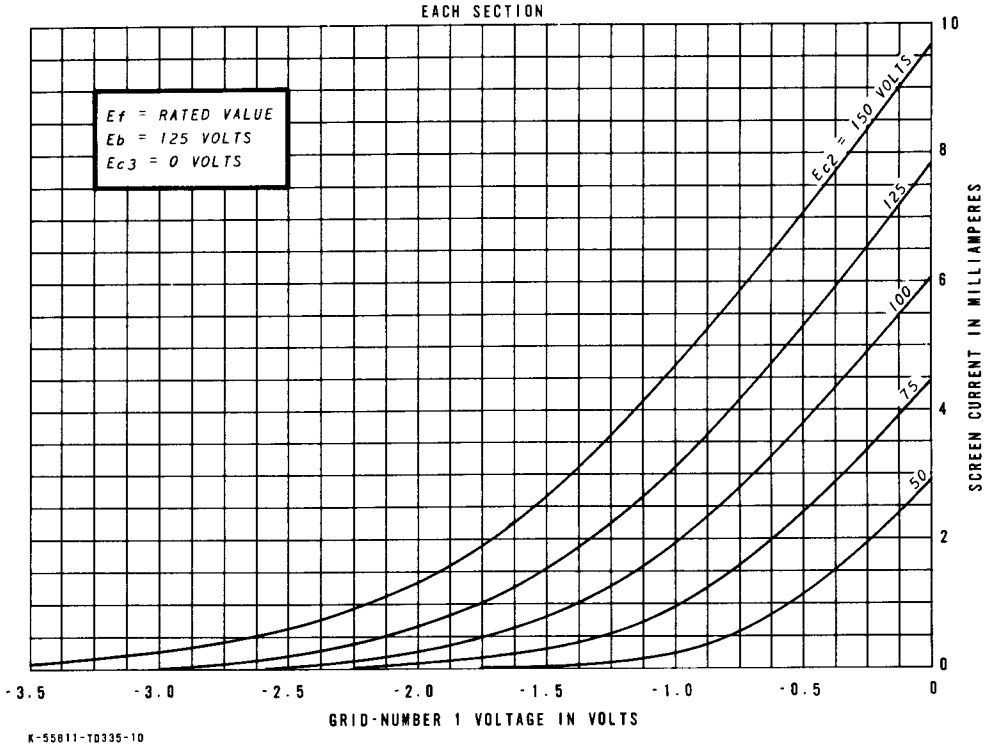
AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION



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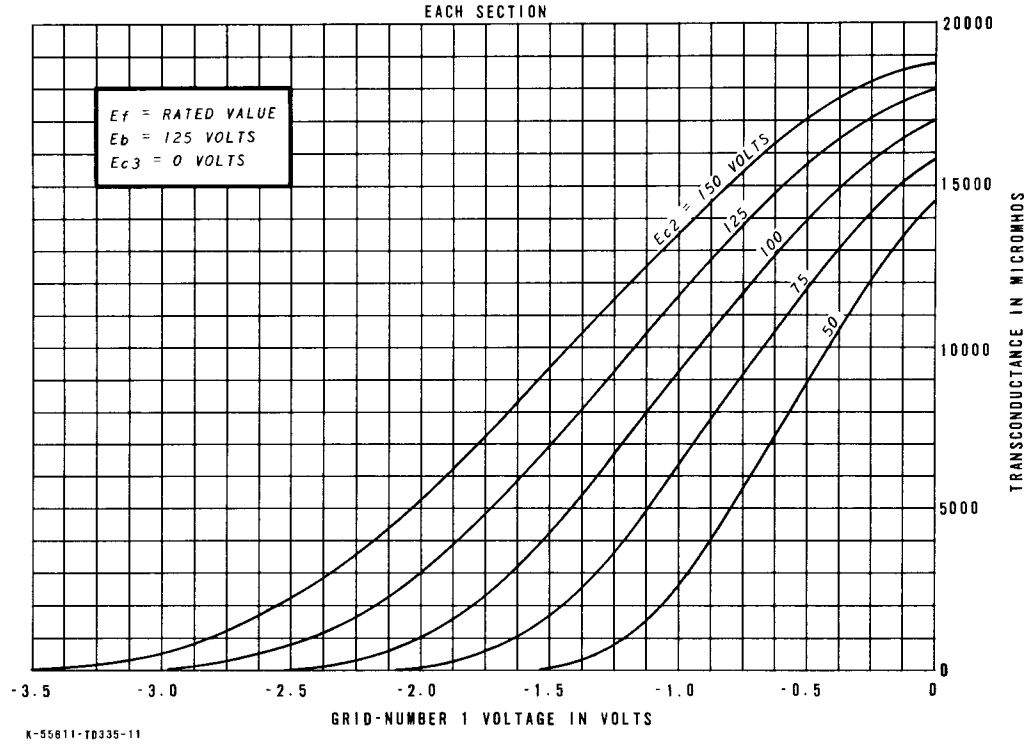
AVERAGE TRANSFER CHARACTERISTICS



TUBE PRODUCTS DEPARTMENT

GENERAL ELECTRIC

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