

April 15, 1961

SHARP - CUTOFF PENTODE TYPE 7056

The 7056 is a 7-pin miniature sharp-cutoff pentode type designed for service as a wide-band, high-frequency amplifier in communications equipment. The heater-cathode structure is designed to render dependable service throughout the range of voltages encountered in a storage battery-generator electrical system.

ELECTRICAL:

Cathode.....	Coated Unipotential		
Heater:			
Voltage Range (ac or dc).....	12.0 to 15.0	Volts	
Current at 13.5 Volts.....	0.150	Ampere	
Direct Interelectrode Capacitances:			
	Unshielded	Shielded*	
Grid 1 to Plate.....	0.02	0.01	max. $\mu\mu\text{f}$
Input.....	6.5	6.5	$\mu\mu\text{f}$
Output.....	2.0	3.0	$\mu\mu\text{f}$

MECHANICAL:

Bulb.....	T-5½
Base.....	Miniature, 7-Pin (JEDEC E7-1)
Outline.....	5-2
Basing.....	7CM
Mounting Position.....	Any

MAXIMUM RATINGS:

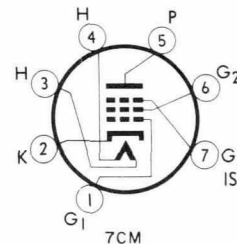
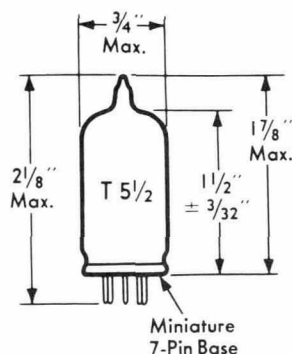
Absolute Maximum Values

Plate Voltage.....	330	max.	Volts
Grid 2 Supply Voltage.....	330	max.	Volts
Grid 2 Voltage.....	See Grid 2 Input Rating Chart		
Plate Dissipation.....	2.0	max.	Watts
Grid 2 Input.....	0.5	max.	Watt
Heater-Cathode Voltage			
Heater Negative with Respect to Cathode			
Total DC and Peak.....	120	max.	Volts
Heater Positive with Respect to Cathode			
Total DC and Peak.....	120	max.	Volts

CHARACTERISTICS AND TYPICAL OPERATION:

Plate Voltage.....	125	Volts
Grid 3 (Suppressor).....	Connected to cathode at socket	
Grid 2 Voltage.....	125	Volts
Cathode-Bias Resistor.....	56	Ohms
Plate Resistance (approx.).....	0.28	Megohm
Transconductance.....	8000	μmhos
Grid 1 Cutoff Bias⊕.....	-6.5	Volts
Plate Current.....	13	Ma.
Grid 2 Current.....	3.7	Ma.

⊕ For plate current of 100 microamperes.



CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Conditions	Min.	Max.	
Heater Current	1	0.138	0.164	Ampere
Transconductance	1, 2, 3 & 4	5000	7400	μmhos
Plate Current	1, 2 & 3	6.5	12.5	Ma.
Grid 2 Current	1, 2 & 3	1.6	4.0	Ma.
Reverse Grid 1 Current	1, 2 & 5	--	1	μA .
Heater-Cathode Leakage Current:				
Heater Negative with respect to Cathode	1 & 6	--	20	μA .
Heater Positive with respect to Cathode	1 & 6	--	20	μA .
Leakage Resistance:				
Between Grid and All Other Electrodes	1 & 7	50	--	Megohms
Between Plate and All Other Electrodes	1 & 8	50	--	Megohms

TEST CONDITIONS FOR CHARACTERISTICS

- (1) Heater Volts = 13.5 (ac or dc)
- (2) Plate Supply Volts = 200
Grid 3 Connected to Cathode at Socket
Grid 2 Supply Volts = 150
- (3) Cathode Bias Resistor = 180 ohms
- (4) Cathode Bypass Capacitor = 1000 μf
- (5) Grid 1 Volts = -1.5
- (6) Heater-to-Cathode Volts = 100 (dc)
- (7) Grid to All-Other-Electrodes Volts = -100
- (8) Plate to All-Other-Electrodes Volts = -300

SPECIAL TESTS

Heater-Cycling Life:

Conditions:

Heater Volts = 17: On 1 minute, Off 4 minutes

Heater-to-Cathode Volts = -150

Duration:

2000 Cycles Minimum

Low-Frequency Vibration:

Conditions:

Heater Volts = 13.5

Plate Supply Volts = 200

Grid 3 Connected to Cathode at Socket

Grid 2 Volts = 150

Grid 1 Volts = -2

Plate Load Resistor = 2000 ohms

Vibrational Acceleration = 2.5 G at 25 cps

Result:

Noise Signal Output Volts = 2.5×10^{-1} (rms)

Intermittent Life:

Conditions:

Heater Volts = 15

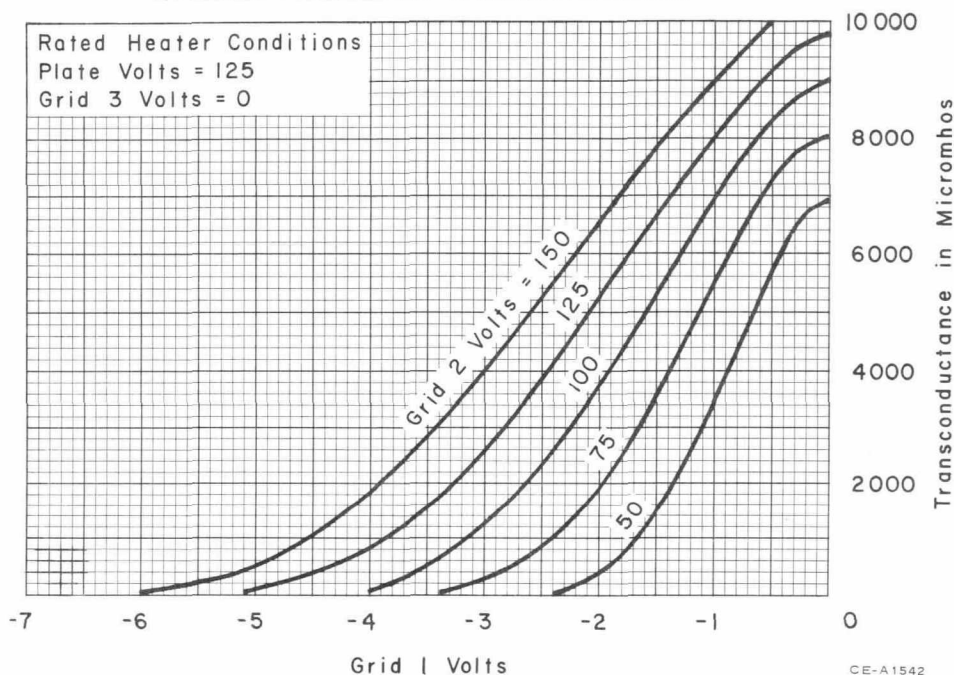
Plate Dissipation: Maximum Rated

Grid 2 Input: Maximum Rated

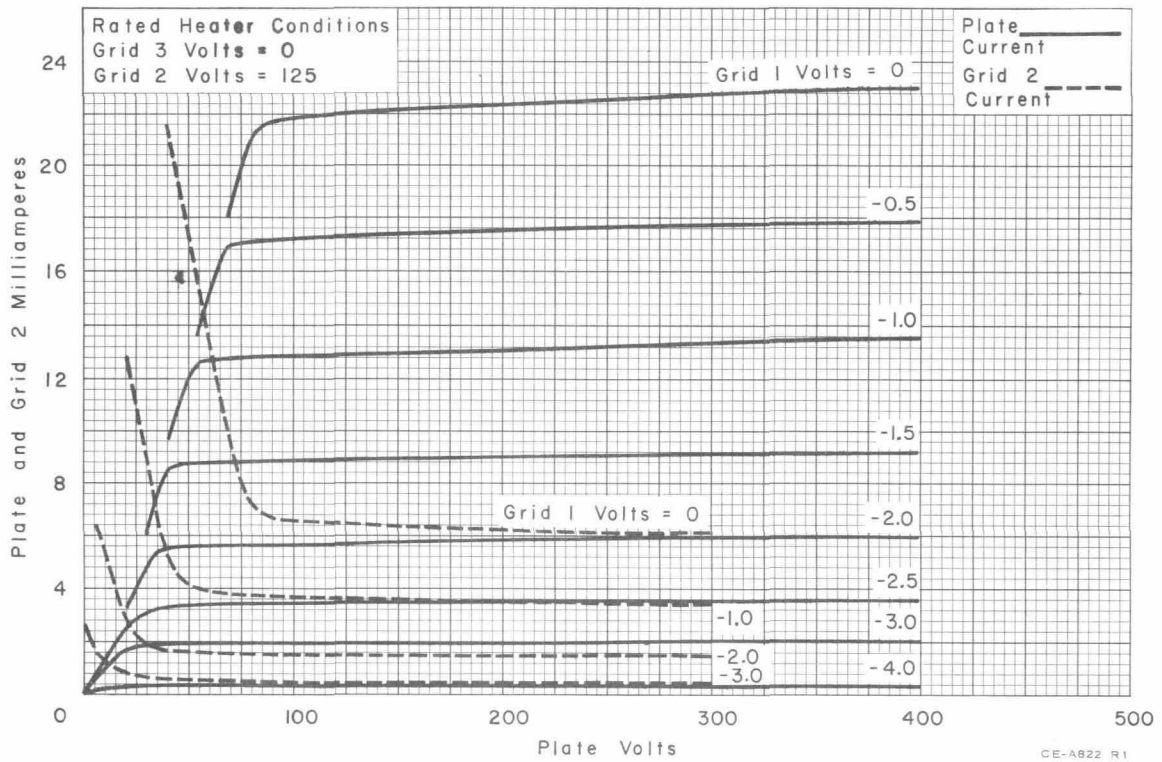
Duration:

500 Hours Minimum

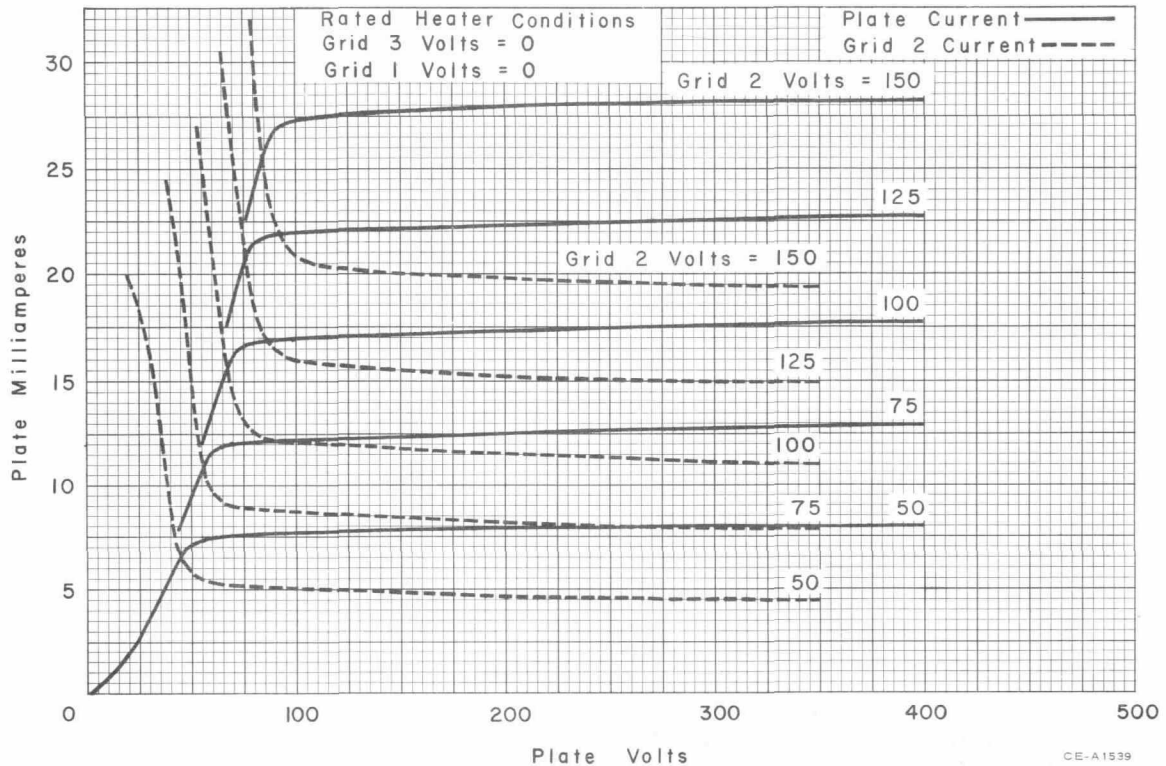
AVERAGE TRANSFER CHARACTERISTICS



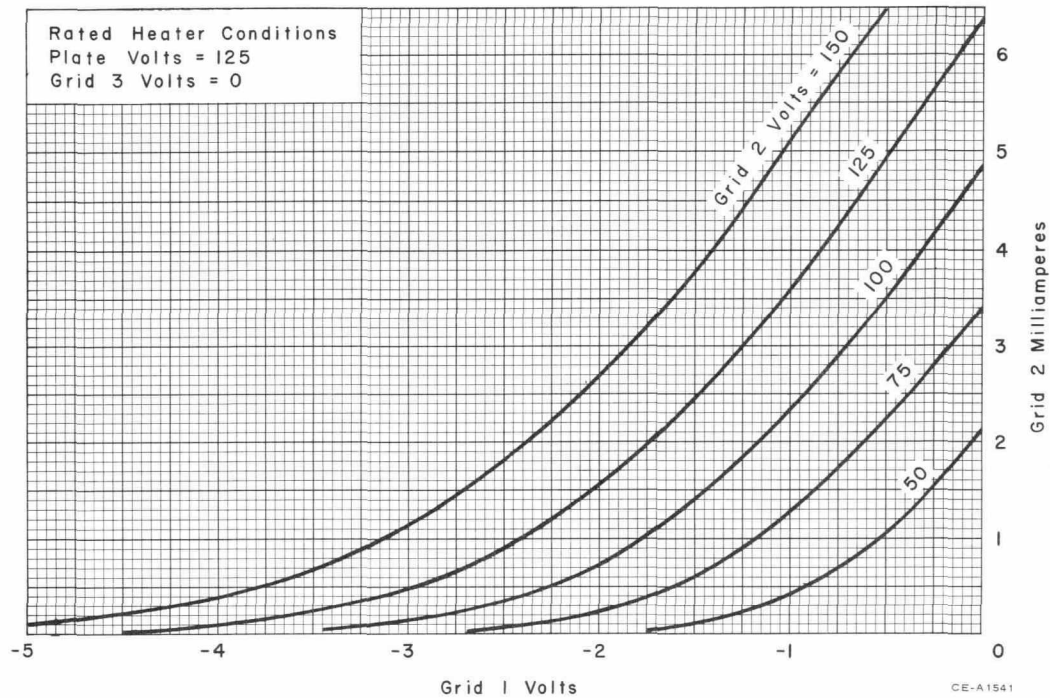
AVERAGE PLATE CHARACTERISTICS



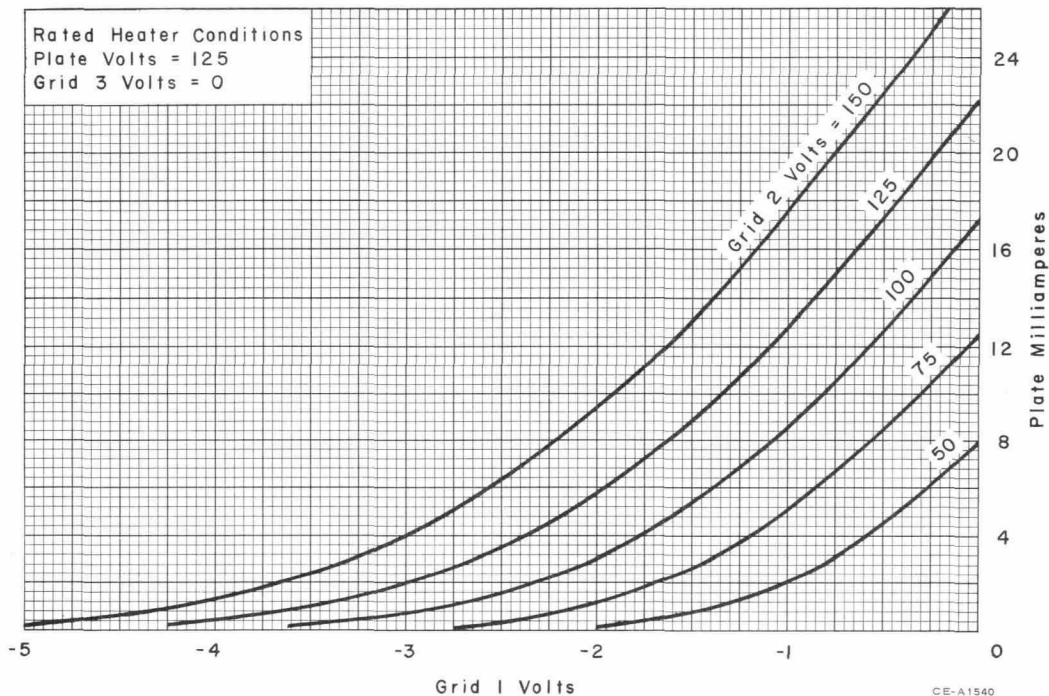
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



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