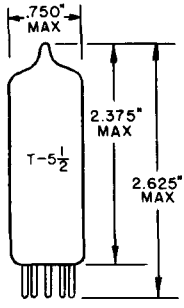
TUNG-SOL

PENTODE

MINIATURE TYPE

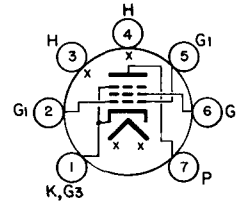


GLASS BULB
SMALL-BUTTON MINIATURE
7 PIN BASE E7-1
OUTLINE DRAWING
JEDEC 5-3

FOR USE IN
AUDIO OUTPUT STAGES OF
RADIO AND TV RECEIVERS
AND PHONOGRAPHS

UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 7CV

THE 25EH5 IS A POWER PENTODE IN THE 7 PIN MINIATURE CONSTRUCTION. IT HAS BEEN SPECIFICALLY DESIGNED FOR USE IN THE AUDIO OUTPUT STAGE OF RADIO AND TELEVISION RECEIVERS AND PHONOGRAPHS. EXCEPT FOR HEATER CHARACTERISTICS AND RATINGS, IT IS IDENTICAL TO THE 6EH5, 12EH5 AND THE 50EH5.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD

GRID 1 TO PLATE	0.65	pf
GRID 1 TO CATHODE & GRID 3, HEATER & GRID 2	17	pf
PLATE TO CATHODE & GRID 3, HEATER & GRID 2	9	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	25	VOLTS	300	MA.
HEATER SUPPLY LIMITS:				
CURRENT OPERATION			300 ± 20	MA.
MAXIMUM PEAK HEATER-CATHODE VOLTAGE:				
HEATER NEGATIVE WITH RESPECT TO CATHODE			200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			200 [B]	VOLTS

[B] THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.

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MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AMPLIFIER

PLATE VOLTAGE	→ 150	VOLTS
GRID 2 (SCREEN-GRID) VOLTAGE	→ 130	VOLTS
PLATE DISSIPATION	→ 5.5	WATTS
GRID 2 INPUT	→ 2	WATTS
BULB TEMPERATURE (AT HOTTEST POINT ON BULB SURFACE)	220	°C
GRID 1 CIRCUIT RESISTANCE:		
FOR FIXED-BIAS OPERATION	0.1	MEGOHM
FOR CATHODE-BIAS OPERATION	0.5	MEGOHM

TYPICAL OPERATING CHARACTERISTICS

CLASS A1 AMPLIFIER

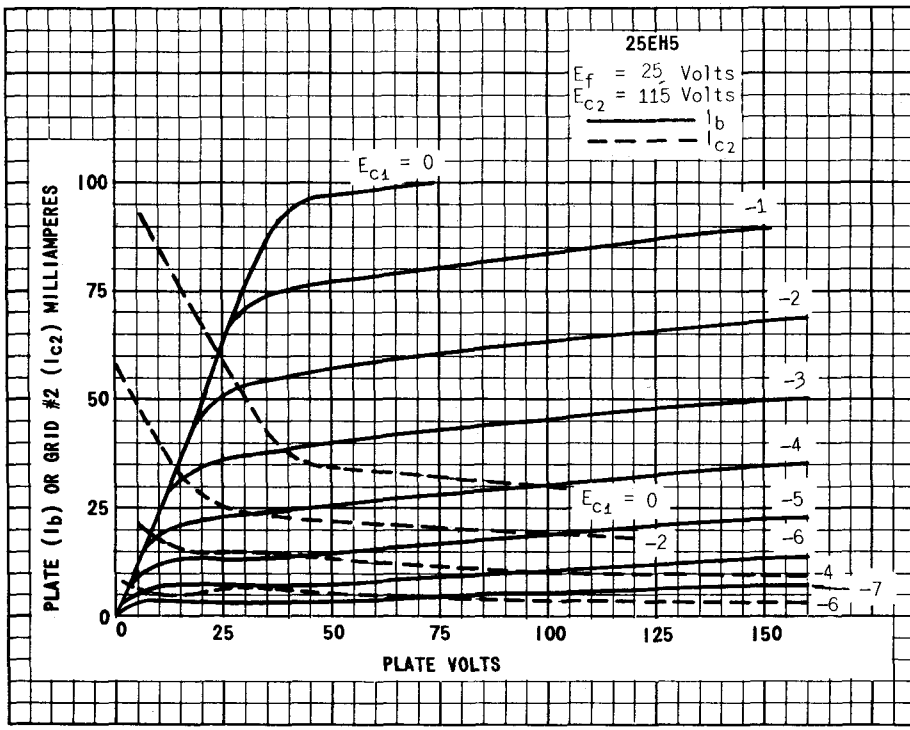
PLATE SUPPLY VOLTAGE	110	VOLTS
GRID 2 SUPPLY VOLTAGE	115	VOLTS
CATHODE RESISTOR	62	OHMS
PEAK AF GRID 1 VOLTAGE	3	VOLTS
ZERO-SIGNAL PLATE CURRENT	42	MA.
SIGNAL PLATE CURRENT (MAX.)	42	MA.
ZERO-SIGNAL GRID 2 CURRENT	11.5	MA.
SIGNAL GRID 2 CURRENT (MAX.)	14.5	MA.
TRANSCONDUCTANCE	14,600	μMHOS
PLATE RESISTANCE (APPROX.)	11,000	OHMS
LOAD RESISTANCE	3,000	OHMS
TOTAL HARMONIC DISTORTION	7	PERCENT
SIGNAL POWER OUTPUT (MAX.)	1.4	WATTS

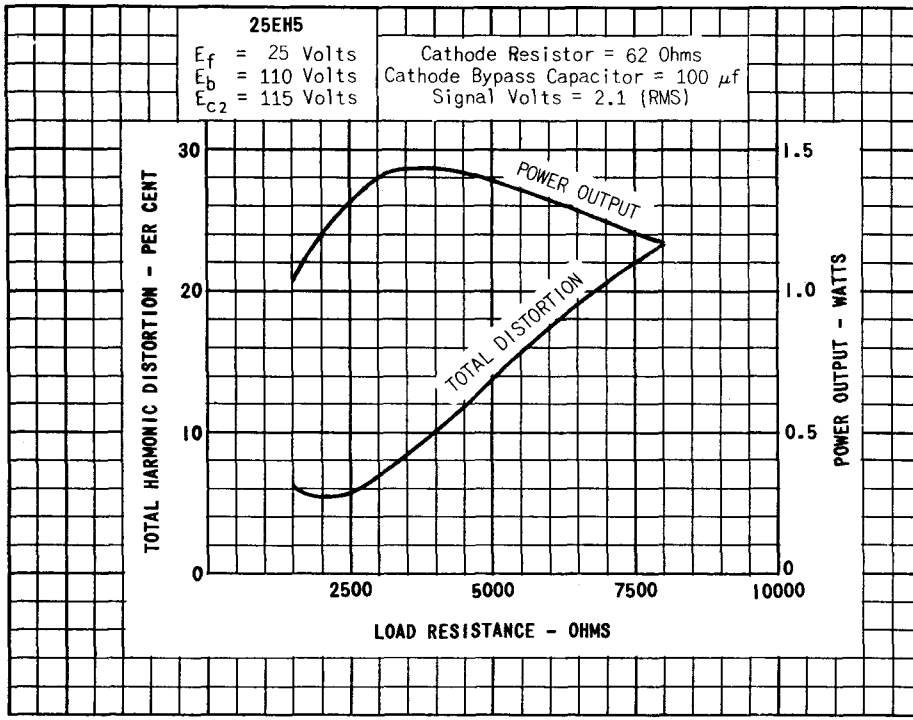
PUSH-PULL AF POWER AMPLIFIER - CLASS AB1

VALUES ARE FOR TWO TUBES

PLATE SUPPLY VOLTAGE	140	VOLTS
GRID 2 SUPPLY VOLTAGE	120	VOLTS
CATHODE RESISTOR	68	OHMS
PEAK AF GRID 1 TO GRID 1 VOLTAGE	9.4	VOLTS
ZERO-SIGNAL PLATE CURRENT	47	MA.
MAX. SIGNAL PLATE CURRENT	51	MA.
ZERO-SIGNAL GRID 2 CURRENT	11	MA.
MAX.-SIGNAL GRID 2 CURRENT	17.7	MA.
EFFECTIVE LOAD RESISTANCE (PLATE TO PLATE)	6000	OHMS
TOTAL HARMONIC DISTORTION	5	PERCENT
MAX.-SIGNAL POWER OUTPUT	3.8	WATTS.

→ INDICATES A CHANGE.


25EH5
E_f = 25 Volts
E_{c2} = 115 Volts
I_b
I_{c2}
E_{c1} = 0
-1
-2
-3
-4
-5
-6
-7
E_{c1} = 0
-2
-4
-6
PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES
100
75
50
25
0
0
25
50
75
100
125
150
PLATE VOLTS


25EH5
E_f = 25 Volts
E_b = 110 Volts
E_{c2} = 115 Volts
Cathode Resistor = 62 Ohms
Cathode Bypass Capacitor = 100 μf
Signal Volts = 2.1 (RMS)
POWER OUTPUT
TOTAL DISTORTION
TOTAL HARMONIC DISTORTION - PER CENT
30
20
10
0
POWER OUTPUT - WATTS
1.5
1.0
0.5
0
2500
5000
7500
10000
LOAD RESISTANCE - OHMS