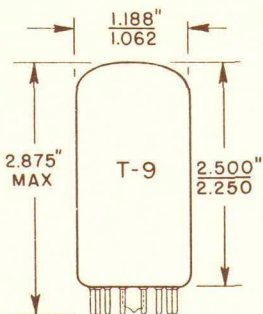


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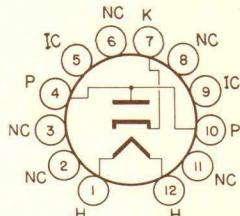
DIODE
COMPACTRON

T-9
GLASS BULB
BUTTON
12 PIN BASE E12-70
OUTLINE DRAWING
JEDEC 9-60

FOR TV DAMPING
DIODE APPLICATIONS

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM

JEDEC 12 GA

SOCKET TERMINALS 5, 6, 8 AND 9
SHOULD NOT BE USED AS TIE POINTS.
IT IS FURTHER RECOMMENDED THAT
THE SOCKET CLIPS FOR
THESE PINS BE REMOVED.

THE 6BE3 IS A COMPACTRON, SINGLE HEATER-CATHODE TYPE DIODE INTENDED FOR SERVICE AS THE DAMPING DIODE IN THE HORIZONTAL DEFLECTION CIRCUIT OF TELEVISION RECEIVERS. EXCEPT FOR HEATER CHARACTERISTICS AND RATINGS, THE 6BE3 IS IDENTICAL TO THE 12BE3 AND THE 17BE3.

DIRECT INTERELECTRODE CAPACITANCES - APPROX. WITHOUT EXTERNAL SHIELD

CATHODE TO PLATE AND HEATER: K TO (P + H)	10	pf
PLATE TO CATHODE AND HEATER: P TO (K + H)	8.0	pf
HEATER TO CATHODE: (H TO K)	3.4	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3	VOLTS	1200	MA
HEATER SUPPLY LIMITS: VOLTAGE OPERATION	6.3 ± 0.6	VOLTS		
MAXIMUM HEATER-CATHODE VOLTAGE: HEATER NEGATIVE WITH RESPECT TO CATHODE DC COMPONENT	900	VOLTS		
TOTAL DC AND PEAK	5000	VOLTS		
HEATER POSITIVE WITH RESPECT TO CATHODE DC COMPONENT	100	VOLTS		
TOTAL DC AND PEAK	300	VOLTS		

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TUNG-SOL

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MAXIMUM RATINGSDESIGN MAXIMUM VALUES ^B. SEE EIA STANDARD RS-239**TV DAMPER SERVICE**

PEAK INVERSE PLATE VOLTAGE	5000	VOLTS
PLATE DISSIPATION	6.5	WATTS
STEADY STATE PEAK PLATE CURRENT	1200	MA
DC OUTPUT CURRENT	200	MA

AVERAGE CHARACTERISTICS

TUBE VOLTAGE DROP, $I_b = 350$ MA. DC	25	VOLTS
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* INDICATES AN ADDITION.

→ INDICATES A CHANGE.

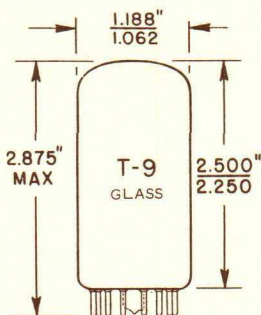
^B

FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN 'STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION'. THE DUTY CYCLE OF THE VOLTAGE PULSE NOT TO EXCEED 15 PERCENT OF A SCANNING CYCLE'

TUNG-SOL

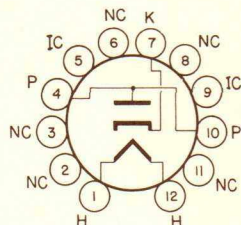
DIODE

COMPACTRON

OUTLINE DRAWING
JEDEC 9-60BASE 12 PIN BUTTON
JEDEC E12-70FOR TV DAMPING
DIODE APPLICATIONS

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION

BASING DIAGRAM
JEDEC 12 GA

BOTTOM VIEW

BASING DIAGRAM
JEDEC 12 GA

SOCKET TERMINALS 5, 6, 8 AND 9
SHOULD NOT BE USED AS TIE POINTS.
IT IS FURTHER RECOMMENDED THAT
THE SOCKET CLIPS FOR
THESE PINS BE REMOVED.

THE 6BE3A IS A COMPACTRON, SINGLE HEATER-CATHODE TYPE DIODE INTENDED FOR SERVICE AS THE DAMPING DIODE IN THE HORIZONTAL DEFLECTION CIRCUIT OF TELEVISION RECEIVERS. EXCEPT FOR HEATER CHARACTERISTICS AND RATINGS, THE 6BE3A IS IDENTICAL TO THE 12BE3A AND THE 17BE3A. THE VOLTAGE DROP OF THIS TYPE IS LOWER THAN THAT OF THE 6BE3.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.
WITHOUT EXTERNAL SHIELD

CATHODE TO PLATE AND HEATER: K TO (P + H)	10	pf
PLATE TO CATHODE AND HEATER: P TO (K + H)	8.0	pf
HEATER TO CATHODE: (H TO K)	3.4	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3	VOLTS	1200	MA
HEATER SUPPLY LIMITS:				
VOLTAGE OPERATION - AC OR DC	6.3 ± 0.6	VOLTS		
MAXIMUM HEATER-CATHODE VOLTAGE:				
HEATER NEGATIVE WITH RESPECT TO CATHODE				
DC COMPONENT	900	VOLTS		
TOTAL DC AND PEAK	5000	VOLTS		
HEATER POSITIVE WITH RESPECT TO CATHODE				
DC COMPONENT	100	VOLTS		
TOTAL DC AND PEAK	300	VOLTS		

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TUNG-SOL

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MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

TV DAMPER SERVICE SEE BELOW

PEAK INVERSE PLATE VOLTAGE	5000	VOLTS
PLATE DISSIPATION	6.5	WATTS
STEADY STATE PEAK PLATE CURRENT	1200	MA
DC OUTPUT CURRENT	200	MA

FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN 'STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCASTING STATIONS; FEDERAL COMMUNICATIONS COMMISSION'. THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15 PERCENT OF ONE SCANNING CYCLE.

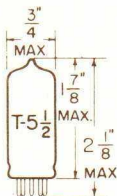
AVERAGE CHARACTERISTICS

TUBE VOLTAGE DROP, $I_b = 350$ MA, DC	22.5	VOLTS
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TUNG-SOL

HEPTODE

MINIATURE TYPE



GLASS BULB

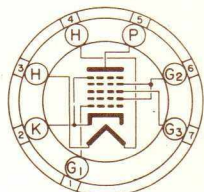
COATED UNIPOTENTIAL CATHODE

HEATER

6.3±10% VOLTS 0.3 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

MINIATURE BUTTON

7 PIN BASE

TCH

THE 6BE6¹ IS A PENTAGRID CONVERTER USING THE 7 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR SERVICE AS A COMBINED OSCILLATOR AND MIXER IN SUPERHETERODYNE RECEIVERS.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD ^A	WITHOUT SHIELD	
MIXER GRID TO PLATE: (G ₃ TO P) MAX.	0.25	0.30	μuf
MIXER GRID TO OSCILLATOR GRID; (G ₃ TO G ₄) MAX.	0.15	0.15	μuf
RF INPUT: G ₃ TO (H+K+G ₄ +G ₂ &4+G ₅ +P)	7.0	7.0	μuf
OSCILLATOR INPUT: G ₄ TO (H+K+G ₂ &4+G ₃ +G ₅ +P)	5.5	5.5	μuf
MIXER OUTPUT: P TO (H+K+G ₄ +G ₂ &4+G ₃ +G ₅)	13	8.0	μuf
OSCILLATOR GRID TO CATHODE: (G ₄ TO K+G ₅)	3.0	3.0	μuf
OSCILLATOR OUTPUT: K TO (H+G ₂ &4+G ₃ +P)	20	15	μuf
OSCILLATOR GRID TO PLATE: (G ₄ TO P) MAX.	0.05	0.1	μuf

^A EXTERNAL SHIELD #316 CONNECTED TO PIN #2.

RATINGS ←

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

HEATER VOLTAGE	6.3±10%	VOLTS
MAXIMUM PEAK HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE	200	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	200 ^C	VOLTS
MAXIMUM PLATE VOLTAGE	330	VOLTS
MAXIMUM GRIDS #2 AND #4 VOLTAGE	110	VOLTS
MAXIMUM GRIDS #2 AND #4 SUPPLY VOLTAGE	330	VOLTS
MAXIMUM NEGATIVE DC GRID #3 VOLTAGE	-55	VOLTS
MAXIMUM POSITIVE DC GRID #3 VOLTAGE	0	VOLTS
MAXIMUM PLATE DISSIPATION	1.1	WATT
MAXIMUM GRIDS #2 AND #4 DISSIPATION	1.1	WATT
MAXIMUM CATHODE CURRENT	15.5	MA.

^C THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.

→ INDICATES A CHANGE.

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TUNG-SOL

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CONVERTER SERVICE - SEPARATE EXCITATION^B

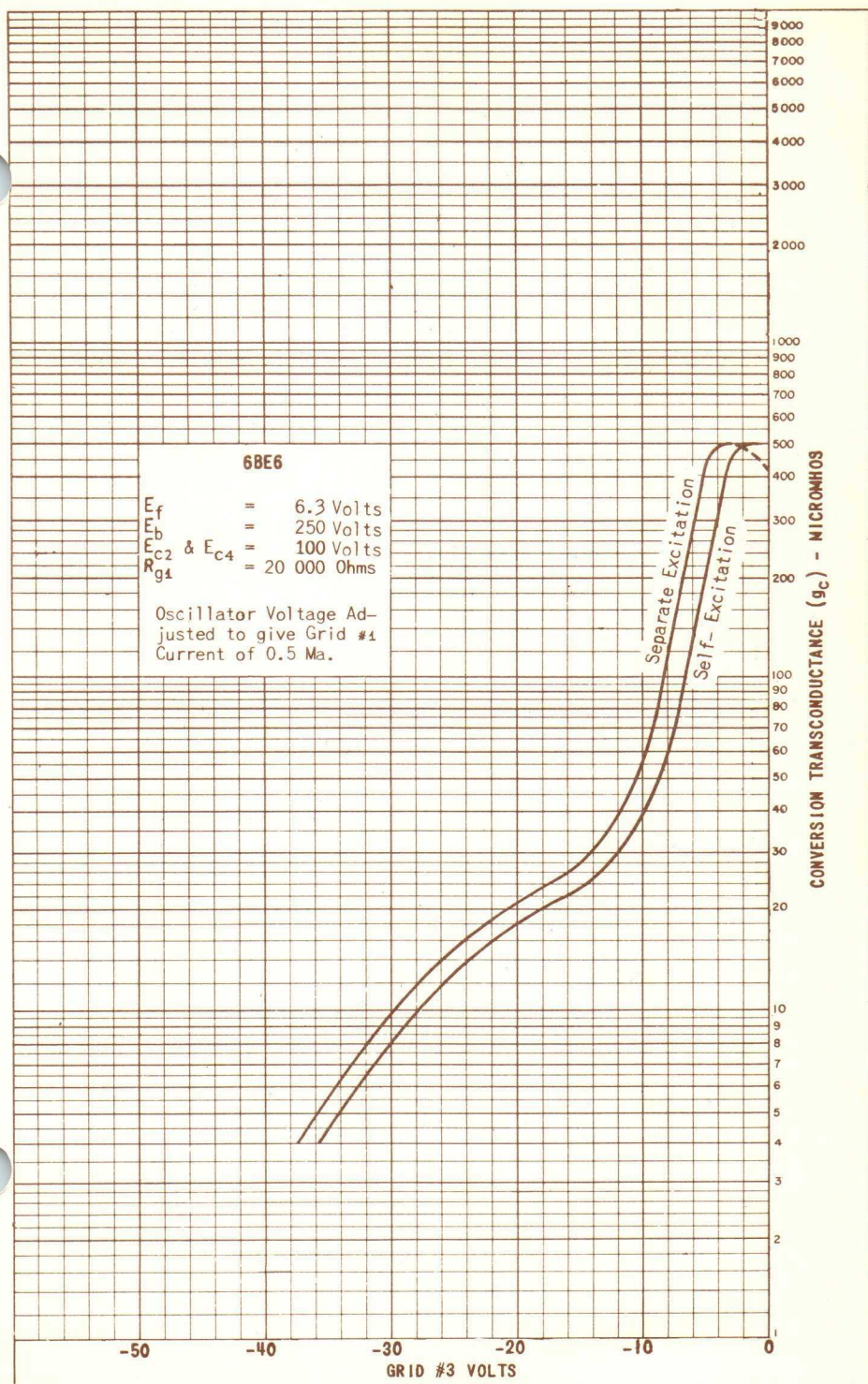
HEATER VOLTAGE	6.3±10%	VOLTS
HEATER CURRENT	0.3	AMP.
PLATE VOLTAGE	100	250 VOLTS
GRID #3 VOLTAGE	-1.5	-1.5 VOLTS
GRIDS #2 AND #4 VOLTAGE	100	100 VOLTS
GRID #1 VOLTAGE (OSCILLATOR GRID) RMS	10	10 VOLTS
GRID #1 RESISTANCE (OSCILLATOR GRID)	20 000	20 000 OHMS
PLATE RESISTANCE (APPROX.)	0.4	1.0 MEGOHMS
GRID #1 CURRENT (OSCILLATOR GRID)	0.5	0.5 MA.
CONVERSION TRANSCONDUCTANCE	455	475 μMHOS
PLATE CURRENT	2.6	2.9 MA.
GRIDS #2 AND #4 CURRENT	7.0	6.8 MA.
CATHODE CURRENT	10.1	10.2 MA.
GRID #3 VOLTAGE FOR $G_C = 10 \mu\text{MHOS}$ (APPROX.)	-30	-30 VOLTS
GRID #3 VOLTAGE FOR $G_C = 100 \mu\text{MHOS}$ (APPROX.)	-6	-6 VOLTS

^B CHARACTERISTICS SHOWN ARE OBTAINED IN THE STANDARD RMA CONVERSION CONDUCTANCE TEST SET WHICH USES SEPARATE EXCITATION. THE CHARACTERISTICS UNDER THESE CONDITIONS CORRESPOND VERY CLOSELY WITH THOSE OBTAINED IN A SELF-EXCITED OSCILLATORY CIRCUIT OPERATING WITH ZERO BIAS.

OSCILLATOR CHARACTERISTICS
NOT OSCILLATING

GRID #3 VOLTAGE	0	VOLTS
GRID #1 VOLTAGE (OSCILLATOR GRID)	0	VOLTS
GRIDS #2 AND #4 CONNECTED TO PLATE	100	VOLTS
TRANSCONDUCTANCE BETWEEN GRID #1 AND GRIDS #2 AND #4 CONNECTED TO PLATE	7 250	μMHOS
AMPLIFICATION FACTOR BETWEEN GRID #1 AND GRIDS #2 AND #4 CONNECTED TO PLATE	20	
CATHODE CURRENT	25	MA.
GRID #1 VOLTAGE (APPROX.) FOR $I_b = 10 \mu\text{A}$	-11	VOLTS

SIMILAR TYPE REFERENCE: Except for heater ratings, the 6BE6 is identical to the 12BE6.



6BE6 (12BE6)

