



6CN7

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TWIN DIODE—HIGH-MU TRIODE

9-PIN MINIATURE TYPE

*With heater having controlled warm-up time***GENERAL DATA****Electrical:**

Heater, for Unipotential Cathodes:

	Series	Parallel	
Heater arrangement			
Voltage (AC or DC)	6.3	3.15	volts
Current	0.3	0.6	amp
Warm-up time (Average)	—	11	sec

Direct Interelectrode Capacitances (Approx.):^o**Triode Unit:**

Grid to plate	1.8	μf
Grid to cathode and heater.	1.5	μf
Plate to cathode and heater	0.5	μf

Diode Units:

Diode-No.1 plate to cathode of diodes No.1 and No.2 & internal shield, and heater.	3.6	μf
Diode-No.2 plate to cathode of diodes No.1 and No.2 & internal shield, and heater.	3.6	μf
Triode grid to either diode plate	0.006	μf

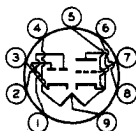
Characteristics, Class A₁ Amplifier (Triode Unit):

Plate Voltage	100	250	volts
Grid Voltage.	-1	-3	volts
Amplification Factor.	70	70	
Plate Resistance (Approx.)	54000	58000	ohms
Transconductance.	1300	1200	μmhos
Plate Current	0.8	1	ma

Mechanical:

Operating Position.	Any
Maximum Overall Length.	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip)	1-9/16" $\pm$ 3/32"
Diameter	0.750" to 0.875"
Dimensional Outline	See General Section
Bulb.	T6-1/2
Base.	Small-Button Noval 9-Pin (JEDEC No. E9-1)
Basing Designation for BOTTOM VIEW.	9EN

Pin 1—Diode-No.2
Plate
Pin 2—Diode-No.1
Plate
Pin 3—Cathode of
Diodes No.1
& No.2,
Internal
Shield



Pin 4—Heater
Pin 5—Heater
Pin 6—Triode
Cathode
Pin 7—Triode Grid
Pin 8—Triode Plate
Pin 9—Heater
Mid-Tap

← Indicates a change.

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TWIN DIODE—HIGH-MU TRIODE

TRIODE UNIT — AMPLIFIER — Class A₁

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE.	300 max.	volts
GRID VOLTAGE:		
Positive-bias value.	0 max.	volts
PLATE DISSIPATION.	1 max.	watt
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 [▲] max.	volts

Typical Operation as Resistance-Coupled Amplifier:

See *RESISTANCE-COUPLED AMPLIFIER CHART No. 7*
at front of this Section

DIODE UNITS — Two

Values are for Each Unit

Maximum Ratings, Design-Center Values:

PLATE CURRENT.	5 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 [▲] max.	volts

→ Characteristics:

Plate Current for plate volts = 5 20 ma

[○] Without external shield.

[▲] The dc component must not exceed 100 volts.

→ Curves shown under Type 6T8-A also apply to the 6CN7

→ indicates a change.

Twin Diode—High-Mu Triode

9-PIN MINIATURE TYPE

With Heater Having Controlled Warm-Up Time

GENERAL DATA

Electrical:

Heater Characteristics and Ratings (*Design-Maximum Values*):

Heater-section arrangement	Parallel	Series	Series	
Voltage (AC or DC)	3.15 ^a	6.3 ^b	6.3 ± 0.6	volts
Current . . .	0.600 ± 0.040	0.300 ± 0.020	0.300 ^c	amp
Warm-up time (Average)	11	11	—	sec
Peak heater-cathode voltage (Each unit):				
Heater negative with respect to cathode.			200 max.	volts
Heater positive with respect to cathode.			200 ^d max.	volts

Direct Interelectrode Capacitances (Approx):^e

Triode Unit:

Grid to plate	1.8	pf
Grid to cathode and heater.	1.5	pf
Plate to cathode and heater	0.5	pf

Diode Units:

Diode-No.1 plate to cathode of diodes No.1 and No.2 & internal shield, and heater.	3.6	pf
Diode-No.2 plate to cathode of diodes No.1 and No.2 & internal shield, and heater.	3.6	pf
Triode grid to either diode plate	0.006	pf

Characteristics, Class A₁ Amplifier (Triode Unit):

Plate Voltage	100	250	volts
Grid Voltage.	-1	-3	volts
Amplification Factor.	70	70	
Plate Resistance (Approx.)	54000	58000	ohms
Transconductance.	1300	1200	μmhos
Plate Current	0.8	1	ma

Mechanical:

Operating Position.	Any
Type of Cathodes.	Coated Unipotential
Maximum Overall Length.	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip)	1-9/16" ± 3/32"
Diameter.	0.750" to 0.875"
Dimensional Outline	See <i>General Section</i>
Bulb.	T6-1/2
Base.	Small-Button Noval 9-Pin (JEDEC No.E9-1)

← Indicates a change.



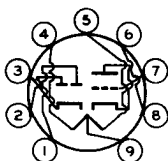
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Basing Designation for BOTTOM VIEW. 9EN

Pin 1—Diode—No.2
Plate

Pin 2—Diode—No.1
Plate

Pin 3—Cathode of
Diodes No.1
& No.2,
Internal
Shield



Pin 4—Heater

Pin 5—Heater

Pin 6—Triode

Cathode

Pin 7—Triode Grid

Pin 8—Triode Plate

Pin 9—Heater Tap

TRIODE UNIT — AMPLIFIER — Class A₁

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE	330 max.	volts
GRID VOLTAGE:		
Positive-bias value	0 max.	volts
PLATE DISSIPATION	1.1 max.	watts

Typical Operation as Resistance-Coupled Amplifier:

See *RESISTANCE-COUPLED AMPLIFIER CHART No.7*
at front of this section

DIODE UNITS — Two

Values are for Each Unit

Maximum Ratings, Design-Maximum Values:

PLATE CURRENT	5.5 max.	ma
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Characteristics, Instantaneous Value:

Plate Current for plate volts = 5	20	ma
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^a At heater amperes = 0.600.

^b At heater amperes = 0.300.

^c At heater volts = 6.3

^d The dc component must not exceed 100 volts.

^e Without external shield.

CURVES

For Triode shown under Type 6T8A also apply to the 6CN7