



ELECTRONIC TUBE REFERENCE

28D7W

Power - Beam (NOT sweep) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

BEAMPOWER-BEAMPOWER

Sylvania 28D7W rugged low-voltage dual beam-power output tube for aircraft and mobile audio amplifiers and control equipment, with 28 V 400 mA heater and 8BS locking base.

GENERAL CHARACTERISTICS

BASE DESIGNATION	8BS	BASE PINS	8
NOMINAL HEATER	28 V / 400 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
PLATE RESISTANCE	4200 Ω
TRANSCONDUCTANCE	0.0034 S
MAXIMUM PLATE VOLTAGE	100 V
MAXIMUM SCREEN VOLTAGE	67.5 V
MAXIMUM PLATE DISSIPATION	3 W
MAXIMUM SCREEN DISSIPATION	0.5 W

Sylvania April 1953 28D7W rugged dual beam-power tube, physical beam-power section 1. Datasheet OCR often reads 28D1W, but 28D7W identified in application text; user authorized this interpretation. Absolute maximum per section plate 100 V, screen 67.5 V, plate dissipation 3 W, screen dissipation 0.5 W, heater-cathode 100 V. Typical Class A at V_a 28 V, V_{g2} 28 V, fixed V_{g1} -3.5 V: plate current average 12.5 mA, screen current 1 mA, gm 0.0034 A/V (range 0.0028–0.0048), rp ~4200 Ω , load 4 k Ω , output ~100 mW. Two sections can operate separately, in parallel, or push-pull. Heater 28 V 0.4 A shared. No intrinsic triode amplification factor for beam power section.

SECTION2 Beam Power	
PLATE RESISTANCE	4200 Ω
TRANSCONDUCTANCE	0.0034 S
MAXIMUM PLATE VOLTAGE	100 V
MAXIMUM SCREEN VOLTAGE	67.5 V
MAXIMUM PLATE DISSIPATION	3 W
MAXIMUM SCREEN DISSIPATION	0.5 W
<i>Sylvania April 1953 28D7W rugged dual beam-power tube, physical beam-power section 2. Datasheet OCR often reads 28D1W, but 28D7W identified in application text; user authorized this interpretation. Absolute maximum per section plate 100 V, screen 67.5 V, plate dissipation 3 W, screen dissipation 0.5 W, heater-cathode 100 V. Typical Class A at V_a 28 V, V_{g2} 28 V, fixed V_{g1} -3.5 V: plate current average 12.5 mA, screen current 1 mA, gm 0.0034 A/V (range 0.0028-0.0048), r_p ~4200 Ω, load 4 kΩ, output ~100 mW. Two sections can operate separately, in parallel, or push-pull. Heater 28 V 0.4 A shared. No intrinsic triode amplification factor for beam power section.</i>	

High-reliability dual triode intended for electronic equipment service.



SOURCE OPERATING CONDITIONS

SOURCE PDF

1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1950 SYLVANIA
Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (Avg.) . . 28 Volts MAX	28 V	Heater Voltage (Avg.) . . 28 Volts MAX
Heater Voltage (Abs. Max.) 30 Volts	30 V	Heater Voltage (Abs. Max.) 30 Volts
Heater Current (Max.)1! . 435 Ma	435 Ma	Heater Current (Max.)1! . 435 Ma
Plate Current (Maximum Signal) . . . = . . . e e e 14.5 19.0 Ma	19 Ma	Plate Current (Maximum Signal) . . . = . . . e e e 14.5 19.0 Ma
Screen Current (Maximum Signal) 2.5 3.0 Ma	3 Ma	Screen Current (Maximum Signal) 2.5 3.0 Ma
Plate Current (Maximum Signal) 13.1 16.0 Ma	16 Ma	Plate Current (Maximum Signal) 13.1 16.0 Ma
Screen Current (Maximum Signal) 2.8 3.5 Ma	3.5 Ma	Screen Current (Maximum Signal) 2.8 3.5 Ma
Plate Current (Maximum Sxgnal) e e e e e e e e e 58.0 Ma	58 Ma	Plate Current (Maximum Sxgnal) e e e e e e e e e e e 58.0 Ma
Screen Current (Maximum Signal) . e e e e e e e e e 17.0 Ma	17 Ma	Screen Current (Maximum Signal) . e e e e e e e e e e e 17.0 Ma
3. These ratings may be realized, provided the dc plate circuit resistance does not exceed 50 ohms p	50 ohms	3. These ratings may be realized, provided the dc plate circuit resistance does not exceed 50 ohms per section.

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (Design Center) 28 Volts	28 V	Heater Voltage (Design Center) 28 Volts
Heater Current (Avg.) 400 Ma	400 Ma	Heater Current (Avg.) 400 Ma
Heater Current (Min.)1 . 365 Ma	365 Ma	Heater Current (Min.)1 . 365 Ma
Plate Voltage 100 100 Volts	100 V	Plate Voltage 100 100 Volts
Screen Voltage 675 67.5 Volts	67.5 V	Screen Voltage 675 67.5 Volts
Plate Dissipation 30 3.0 Watts	3 W	Plate Dissipation 30 3.0 Watts
Screen Dissipation 05 0.5 Watt	0.5 W	Screen Dissipation 05 0.5 Watt
Heater-Cathode Voltage . . . 100 90 Volts	90 V	Heater-Cathode Voltage 100 90 Volts
Plate Current (Zero Signal) . 9.0 8.0 12.5 17.5 Ma	17.5 Ma	Plate Current (Zero Signal) . 9.0 8.0 12.5 17.5 Ma
Screen Current (Zero Signal) . 0.7 0.2 1.0 2.2 Ma	2.2 Ma	Screen Current (Zero Signal) . 0.7 0.2 1.0 2.2 Ma
Plate Voltage® 28.0 28.0 Volts	28 V	Plate Voltage® 28.0 28.0 Volts
Screen Voltage 0 28.0 28.0 Volts	28 V	Screen Voltage 0 28.0 28.0 Volts
GridVoltage « « — -3.5 Volts	-3.5 V	GridVoltage « « — -3.5 Volts
Screen Current (Zero Signal) 1.2 2.0 Ma	2 Ma	Screen Current (Zero Signal) 1.2 2.0 Ma
Peak AF Signal Voltage (Grid to Grid) . . . 9.8 9.8 Volts	9.8 V	Peak AF Signal Voltage (Grid to Grid) 9.8 9.8 Volts
Load Resistance (Plate to Plate) 6000 6000 Ohms	6000 Ohms	Load Resistance (Plate to Plate) 6000 6000 Ohms
Parallel Resistance Coupled ClassA2 Amphfier (BothSections)	2 A	Parallel Resistance Coupled ClassA2 Amphfier (BothSections)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage3 e e . 0. 280 28.0 Volts	28 V	Plate Voltage3 e e . 0. 280 28.0 Volts
Screen Voltage 28.0 28.0 Volts	28 V	Screen Voltage 28.0 28.0 Volts
GridVoltage — -3.5 Volts	-3.5 V	GridVoltage — -3.5 Volts
Plate Current (Zero Signal) 18.5 25.0 Ma	25 Ma	Plate Current (Zero Signal) 18.5 25.0 Ma
Screen Current (Zero Signal) 1.3 2.0 Ma	2 Ma	Screen Current (Zero Signal) 1.3 2.0 Ma
Peak AF Signal Voltage 4.9 4.9 Volts	4.9 V	Peak AF Signal Voltage 4.9 4.9 Volts
Load Resistance. . . e e e e e e e e e oo v . 2000 2000 Ohms	2000 Ohms	Load Resistance. . . e e e e e e e e oo v . 2000 2000 Ohms
Plate Voltage3 e e e e e 28.0 Volts	28 V	Plate Voltage3 e e e e e 28.0 Volts
Screen Voltage 28.0 Volts	28 V	Screen Voltage 28.0 Volts
Plate Current (Zero Signal) e e e e e e e e e e e e 64.0 Ma	64 Ma	Plate Current (Zero Signal) e e e e e e e e e e e e 64.0 Ma
Screen Current (Zero Signal) 4.0 Ma	4 Ma	Screen Current (Zero Signal) 4.0 Ma
Peak AF Signal Voltage (Grid to Gnd) e e e e e e e e 17.8 Volts	17.8 V	Peak AF Signal Voltage (Grid to Gnd) e e e e e e e 17.8 Volts
Load Resistance (Plate to Plate) 1560 Ohms	1560 Ohms	Load Resistance (Plate to Plate) 1560 Ohms
permits utilization of the total supply voltage. An increase in- effective B voltage of about 3.5 vo	3.5 V	permits utilization of the total supply voltage. An increase in- effective B voltage of about 3.5 volts is an

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power output and distortion data on Type 28D7W are given in the following table with the heater, pla	7 W	Power output and distortion data on Type 28D7W are given in the following table with the heater, plate and
screen voltages varied from 22 volts to 30 volts under fixed-bias and self-bias conditions. Values s	30 V	screen voltages varied from 22 volts to 30 volts under fixed-bias and self-bias conditions. Values shown are for
28 volts, a resistor should be inserted in series with the heater supply voltage and the heater.	28 V	28 volts, a resistor should be inserted in series with the heater supply voltage and the heater.
Several methods of driving the Type 28D7W tube are very satisfactory for applications where a 28 vol	28 V	Several methods of driving the Type 28D7W tube are very satisfactory for applications where a 28 volt power

TUBE TINKER

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