

ELECTRONIC TUBE REFERENCE

22DE4

Rectifier - Damper Diode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
RECTIFIER

Damper diode designed for television horizontal-deflection service, with ratings and operating characteristics suited to repetitive line-scan pulses.

GENERAL CHARACTERISTICS

BASE DESIGNATION	4CG	BASE PINS	5
NOMINAL HEATER	22.4 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

4CG - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – IC	–	–	IC
PIN2 – IC	–	–	IC
PIN3 – K	A	K – Cathode	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN7 – H	–	H – Heater	CONNECTED
PIN8 – H	–	H – Heater	CONNECTED

SECTION RATINGS

SECTION1 Rectifier	
MAXIMUM PLATE DISSIPATION	6.5 W
PEAK INVERSE VOLTAGE	6500 V
NOMINAL OUTPUT CURRENT	165 mA
PEAK FORWARD CURRENT	1.1 A
FORWARD VOLTAGE DROP	34 V
MAXIMUM HEATER-CATHODE VOLTAGE	5500 V
WARM-UP TIME	11 s
<i>Abbreviated heater variant of THE6DE4; parent electrical table not available locally, so unsupported promoted values were not invented.</i>	

22DE4 is a damper diode for television horizontal-deflection service. The supplied RCA manual excerpt was reviewed for heater data, physical sections, maximum ratings, electrical characteristics, capacitances, and stated operating conditions.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1961 Tung Sol

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

1961 TUNG SOL

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum Plate Dissipation	6.5 W	DamperService
MaximumPeakHeaterCathodeVoltageNegative	5500 V	—
MaximumPeakHeaterCathodeVoltagePositive	300 V	—
Heater Warmup Time	11 s	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PlateToHeaterAndCathodeCapacitance	8.5 pF	—
CathodeToHeaterAndPlateCapacitance	11.5 pF	—
Heater To Cathode Capacitance	4 pF	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1966 Tung Sol Electronic Tubes 3 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 3 OF 4

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak inverse plate voltage	5000 V	DamperService
Steady state peak plate current	1100 mA	DamperService

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC output current	165 mA	DamperService
Peak heater-cathode voltage	5000 V	HeaterNegative
Heater warm-up time	11 s	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate-to-heater-and-cathode capacitance	9.5 pF	—
Cathode-to-heater-and-plate capacitance	11.5 pF	—
Heater-to-cathode capacitance	4 pF	—



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1971 RCA HB3 Binder 5 of 7

SOURCE PDF

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

1971 RCA HB3 BINDER 5 OF 7
Section 1 · Rectifier

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater voltage	22.4 V	Nominal heater rating from supplied sheet
Heater current	450 mA	Nominal heater rating from supplied sheet
Warm-up time	11 s	Average warm-up time from supplied sheet



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

1975 RCA RC30

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1975 RCA RC30

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 6.3 17	22.4 V	Heater Voltage (ac/dc) 6.3 17 22.4 volts
Heater Current 1.6 0.6	450 mA	Heater Current 1.6 0.6 0.45 amperes
Heater Warm-up Time (Average) – 11	11 s	Heater Warm-up Time (Average) — 11 11 seconds
Peak Inverse Plate Voltage#	6500 V	Peak Inverse Plate Voltage# 6500 volts
Peak Plate Current	1100 mA	Peak Plate Current 1100 mA
Average Plate Current	180 mA	Average Plate Current 180 mA
Plate Dissipation	6.5 W	Plate Dissipation 6.5 watts
Tube Voltage Drop for plate current of	350 mA	Tube Voltage Drop for plate current of 350 mA 34 volts
# Pulse duration must not exceed 15% of a horizontal scanning: cycle (	10 us	# Pulse duration must not exceed 15% of a horizontal scanning: cycle (10 microseconds).
Heater Voltage (ac/dc) 4.2	6.3 V	Heater Voltage (ac/dc) 4.2 6.3 volts
Heater Current 0.45	300 mA	Heater Current 0.45 0.3 ampere
Heater Warm-up Time (Average)	11 s	Heater Warm-up Time (Average) 11 seconds
Plate Voltage	330 V	Plate Voltage 330 volts
Grid-No. 3 (Suppressor-Grid) Voltage, Positive value	0 V	Grid-No. 3 (Suppressor-Grid) Voltage, Positive value 0 volts
Grid-No.2 (Screen-Grid) Supply Voltage	330 V	Grid-No.2 (Screen-Grid) Supply Voltage 330 volts
Grid-No. I (Control-Grid) Voltage, Positive-bias value	0 V	Grid-No. I (Control-Grid) Voltage, Positive-bias value 0 volts
Plate Dissipation	2.3 W	Plate Dissipation 2.3 watts
Peak inverse/negative-pulse plate voltage	6500 V	Published section value
Average output/plate current	180 mA	Published section value

TUBE TINKER

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and their source documents.

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