



ELECTRONIC TUBE REFERENCE

12AD6

Voltage - Pentode or Tetrode (under 100V) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
HEPTODE

Miniature heptode frequency changer developed specifically for automobile radios operating directly from a 12 V battery. It performs oscillator and mixer functions effectively without a conventional high-voltage B-plus supply.

GENERAL CHARACTERISTICS

BASE DESIGNATION	7CH	BASE PINS	7
NOMINAL HEATER	12.6 V / 150 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

7CH - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – G1	A	G1 – Control Grid	CONNECTED
PIN2 – G5	A	G5 – Fifth Grid	CONNECTED
PIN2 – K	A	K – Cathode	CONNECTED
PIN3 – H	–	H – Heater	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – P	A	P – Plate (Anode)	CONNECTED
PIN6 – G2	A	G2 – Screen Grid	CONNECTED
PIN6 – G4	A	G4 – Fourth Grid	CONNECTED
PIN7 – G3	A	G3 – Suppressor Grid	CONNECTED

SECTION RATINGS

SECTION1 Heptode	
PLATE RESISTANCE	1000000 Ω
AMPLIFICATION FACTOR	9.4
MAXIMUM PLATE VOLTAGE	30 V
MAXIMUM SCREEN VOLTAGE	30 V
MAXIMUM CATHODE CURRENT	20 mA
<i>Published converter transconductance is conversion transconductance, so it is not promoted as generic Transconductance.</i>	

The 12AD6 is a pentagrid converter intended as a combined oscillator and mixer in superheterodyne receivers using a nominal 12-volt automotive battery supply.



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1958 Brimar Radio Valve No 7

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

1958 BRIMAR RADIO VALVE NO 7

Section 1 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	12.6 V	—
Heater Current	150 mA	—



SOURCE OPERATING CONDITIONS

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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 · Heptode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion Transconductance	320 μ S	Converter; Separate Excitation
Oscillator Transconductance	3600 μ S	Not Oscillating
Oscillator Amplification Factor	9.4	Not Oscillating
Connected To Plate	3600 μ S	—
Cathode Current	4.5 mA	—
E, =	12.6 V	—
B, =	12.6 V	—
Feyg =	12.6 V	—
Ef =	12.6 V	—

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Rg, =	33 ohm	—
Z{" =	200 ohm	—
Grid #	3 V	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Operating Voltage Minimum	10 V	PublishedRange
Heater Operating Voltage Maximum	15.9 V	PublishedRange
Plate Voltage –	16 V	—
Cathode Current	20 mA	—

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mixer Grid to Plate	0.3 pF	—
RF Input Capacitance	7 pF	—
Oscillator Input Capacitance	3.2 pF	—
Mixer Output Capacitance	7 pF	—
Oscillator Output Capacitance	11 pF	—


SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1966 Tung Sol Electronic Tubes 2 of 4

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

1966 TUNG SOL ELECTRONIC TUBES 2 OF 4

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate voltage	12.6 V	Converter;SeparateExcitation
Grid 2 and 4 voltage	12.6 V	Converter;SeparateExcitation
Grid 1 drive peak-to-peak	4.5 V	Converter;SeparateExcitation

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate resistance	0.4 Mohm	Converter;SeparateExcitation
Conversion transconductance	320 μ S	Converter;SeparateExcitation
Plate current	0.35 mA	Converter;SeparateExcitation
Cathode current	2.6 mA	Converter;SeparateExcitation
Oscillator transconductance	3600 μ S	Oscillator;NotOscillating
Oscillator amplification factor	9.4	Oscillator;NotOscillating
Oscillator cathode current	4.5 mA	Oscillator;NotOscillating



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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1968 General Electric Co

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

1968 GENERAL ELECTRIC CO

Section 1 · Heptode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage	30 V	—
Plate Voltage	12 V	—
Plate Voltage	12.6 V	—
Screen Voltage	12 V	—
Screen Voltage	12 V	—
Plate Current	0.45 mA	—
Screen Current	4 mA	—
Transconductance	260 μ S	—
Transconductance	3800 μ S	—
Amplification Factor	9	—
Plate Resistance	1 ohm	—
Plate Voltage	12.6 V	ConverterService
Screen Voltage	12.6 V	ConverterService

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Conversion Transconductance	260 μS	ConverterService
Plate Current	0.45 mA	ConverterService
Screen Current	1.5 mA	ConverterService
Oscillator Amplification Factor	9	OscillatorNotOscillating
Oscillator Transconductance	3800 μS	OscillatorNotOscillating
Cathode Current	5 mA	OscillatorNotOscillating

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