

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA

12DQ7

1 SECTION
CONSTRUCTION
PENTODE

Voltage - Pentode Sharp Cutoff (single) electronic tube

Sharp-cutoff television video-amplifier pentode in the 12BY7A/12BV7/12DQ7 replacement family. Its high-frequency wideband characteristics make it a fixed-gain video signal tube rather than a conventional power pentode.

GENERAL CHARACTERISTICS

BASE DESIGNATION	9BF	BASE PINS	9
NOMINAL HEATER	12.6 V / 300 mA	PARALLEL HEATER	6.3 V / 600 mA
HEATING	Indirect	SERIES OPERATION	Capable
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

9BF - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1 – K	A	K – Cathode	CONNECTED
PIN2 – G1	A	G1 – Control Grid	CONNECTED
PIN3 – G3	A	G3 – Suppressor Grid	CONNECTED
PIN4 – H	–	H – Heater	CONNECTED
PIN5 – H	–	H – Heater	CONNECTED
PIN6 – HCT	–	HCT – Heater Center Tap	CONNECTED
PIN7 – P	A	P – Plate (Anode)	CONNECTED
PIN8 – G2	A	G2 – Screen Grid	CONNECTED
PIN9 – G3	A	G3 – Suppressor Grid	CONNECTED

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	53000 Ω
TRANSCONDUCTANCE	0.0105 S
MAXIMUM PLATE VOLTAGE	330 V
MAXIMUM SCREEN VOLTAGE	330 V
MAXIMUM PLATE DISSIPATION	6.5 W
MAXIMUM SCREEN DISSIPATION	1.1 W
<i>Promoted from published ratings/characteristics where directly applicable; additional published values retained in TUBE_SECTION_PARAMETER.</i>	

Sharp-cutoff pentode used as a television video amplifier; 12BY7A, 12BV7, and 12DQ7 are handled as the source-stated replacement family.



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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Service	Video output amplifier	—
Heater Warmup Time	11 s	—



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Current	26 mA	ClassA
Screen Current	5.6 mA	ClassA



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1975 RCA RC30

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

1975 RCA RC30

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 12.6	6.3 V	Published in approved 12DQ7 target entry; Section1
Heater Current 0.3	600 mA	Published in approved 12DQ7 target entry; Section1
Heater Warm-up Time (Average)	11 seconds	Published in approved 12DQ7 target entry; Section1
Plate Supply Voltage	330 V	Published in approved 12DQ7 target entry; Section1
Grid-No.3 (Suppressor-Grid) Voltage, Positive value	0 V	Published in approved 12DQ7 target entry; Section1
Grid-No.2 (Screen-Grid) Voltage	190 V	Published in approved 12DQ7 target entry; Section1
Negative-bias value	65 V	Published in approved 12DQ7 target entry; Section1
Positive-bias value	0 V	Published in approved 12DQ7 target entry; Section1
Plate Dissipation	6.5 W	Published in approved 12DQ7 target entry; Section1
Grid-No.2 Input	1.2 W	Published in approved 12DQ7 target entry; Section1
grid-no	2 V	Published in approved 12DQ7 target entry; Section1
For fixed-bias operation	0.25 MΩ	Published in approved 12DQ7 target entry; Section1
For cathode-bias operation	1 MΩ	Published in approved 12DQ7 target entry; Section1
Heater Voltage (ac/dc) 6.3 16.8	25.3 V	Published in approved 12DQ7 target entry; Section1
Heater Current 0.6 0.45	300 mA	Published in approved 12DQ7 target entry; Section1
Heater Warm-up Time {Average} 11 11	11 seconds	Published in approved 12DQ7 target entry; Section1
Peak Inverse Plate Voltage*	5000 V	Published in approved 12DQ7 target entry; Section1
Peak Plate Current	1200 mA	Published in approved 12DQ7 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Average Plate Current	250 mA	Published in approved 12DQ7 target entry; Section1
Plate Dissipation	4.75 W	Published in approved 12DQ7 target entry; Section1
Peak value +800	-5000 V	Published in approved 12DQ7 target entry; Section1
Average value -(-100	-900 V	Published in approved 12DQ7 target entry; Section1

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to Plate	0.063 pF	Published in approved 12DQ7 target entry; Section1
and Internal Shield	10.2 pF	Published in approved 12DQ7 target entry; Section1
Plate to Cathode, Heater, Grid No.2, and Internal Shield	3.5 pF	Published in approved 12DQ7 target entry; Section1
Plate to Cathode and Heater	12 pF	Published in approved 12DQ7 target entry; Section1
Cathode to Plate and Heater	9.5 pF	Published in approved 12DQ7 target entry; Section1
Heater to Cathode	2.8 pF	Published in approved 12DQ7 target entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Supply Voltage	250 V	Published in approved 12DQ7 target entry; Section1
Grid-No.2 Supply Voltage	180 V	Published in approved 12DQ7 target entry; Section1
Cathode-Bias Resistor	100 Ω	Published in approved 12DQ7 target entry; Section1
Plate Resistance (Approx.)	93000 Ω	Published in approved 12DQ7 target entry; Section1
Plate Current	26 mA	Published in approved 12DQ7 target entry; Section1
Grid-No.2 Current B	75 mA	Published in approved 12DQ7 target entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No.1 Voltage (Approx.) for plate current of 20 jtA	11.6 V	Published in approved 12DQ7 target entry; Section1

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