



ELECTRONIC TUBE REFERENCE

33GY7A

Rectifier - Damper Diode electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

BEAMPOWER-DIODE

Duodecar combination tube containing a damper diode and beam-power horizontal-deflection amplifier, providing both line-output and energy-recovery functions in television receivers.

GENERAL CHARACTERISTICS

BASE DESIGNATION	12FN	BASE PINS	12
NOMINAL HEATER	33.6 V / 450 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

12FN - TERMINAL PINOUT

TERMINAL	SECTION	ELEMENT	STATUS
PIN1	–	H – Heater	CONNECTED
PIN2	B	P – Plate (Anode)	CONNECTED
PIN4	B	K – Cathode	CONNECTED
PIN5	A	P – Plate (Anode)	CONNECTED
PIN7	–	–	IC
PIN8	A	G3 – Suppressor Grid	CONNECTED
PIN9	A	G1 – Control Grid	CONNECTED
PIN10	A	G1 – Control Grid	CONNECTED
PIN11	A	G2 – Screen Grid	CONNECTED
PIN12	–	H – Heater	CONNECTED

SECTION RATINGS

SECTION1 Diode	
MAXIMUM PLATE DISSIPATION	3.8 W
PEAK INVERSE VOLTAGE	4200 V
NOMINAL OUTPUT CURRENT	135 mA
PEAK FORWARD CURRENT	810 mA
FORWARD VOLTAGE DROP	21 V
MAXIMUM HEATER-CATHODE VOLTAGE	4200 V
WARM-UP TIME	11 s
<i>TV damper.</i>	

SECTION2 Beam Power	
PLATE RESISTANCE	10000 Ω
TRANSCONDUCTANCE	0.0065 S
AMPLIFICATION FACTOR	4
MAXIMUM PLATE VOLTAGE	400 V
MAXIMUM SCREEN VOLTAGE	150 V
MAXIMUM PLATE DISSIPATION	9 W
MAXIMUM SCREEN DISSIPATION	3 W
MAXIMUM CATHODE CURRENT	155 mA
MAXIMUM HEATER-CATHODE VOLTAGE	200 V
<i>Horizontal deflection; pulse plate 5000 V.</i>	

Duodecar diode plus beam-power tube used as a combined damper diode and horizontal-deflection amplifier in television receivers.



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 · Diode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube Voltage Drop	21 V	I _b =250mA DC

1968 GENERAL ELECTRIC CO

Section 2 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Positive Pulse Plate Voltage	5000 V	HorizontalDeflection



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 · Diode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 33.6	33.6 V	Published in approved 33GY7A target datasheet entry; Section1
Heater Current 0.45	450 mA	Published in approved 33GY7A target datasheet entry; Section1
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 33GY7A target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Supply Voltage	400 V	Published in approved 33GY7A target datasheet entry; Section1
Peak Positive-Pulse Plate Voltage#	5000 V	Published in approved 33GY7A target datasheet entry; Section1
Peak Negative-Pulse Plate Voltage	0 V	Published in approved 33GY7A target datasheet entry; Section1
DC Grid-No.2 Voltage	150 V	Published in approved 33GY7A target datasheet entry; Section1
DC Grid-No.1 Voltage	-55 V	Published in approved 33GY7A target datasheet entry; Section1
Peak Negative-Pulse Grid-No.1 Voltage	330 V	Published in approved 33GY7A target datasheet entry; Section1
Peak Cathode Current	540 mA	Published in approved 33GY7A target datasheet entry; Section1
Average Cathode Current	155 mA	Published in approved 33GY7A target datasheet entry; Section1
Plate Dissipation!	9 W	Published in approved 33GY7A target datasheet entry; Section1
Grid-No. 1-Circuit Resistance	1 MΩ	Published in approved 33GY7A target datasheet entry; Section1
# Pulse duration must not exceed 15</J of a horizontal scanning cycle (	10 microseconds	Published in approved 33GY7A target datasheet entry; Section1
Peak Inverse Plate Voltage#	4200 V	Published in approved 33GY7A target datasheet entry; Section1
Peak Plate Current	810 mA	Published in approved 33GY7A target datasheet entry; Section1
Average Plate Current	135 mA	Published in approved 33GY7A target datasheet entry; Section1
Plate Dissipation	3.8 W	Published in approved 33GY7A target datasheet entry; Section1
Peak value +200	-4200 V	Published in approved 33GY7A target datasheet entry; Section1
Average value +100	-400 V	Published in approved 33GY7A target datasheet entry; Section1
Bulb Temperature (At hottest point)	200 °C	Published in approved 33GY7A target datasheet entry; Section1
Tube Voltage Drop for plate current of	250 mA	Published in approved 33GY7A target datasheet entry; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Tube Voltage Drop for plate current of 250 mA	21 V	Published in approved 33GY7A target datasheet entry; Section1
# Pulse duration must not exceed I5 r/r of a horizontal scanning cycle (	10 microseconds	Published in approved 33GY7A target datasheet entry; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage 5000 60 130	130 V	Published in approved 33GY7A target datasheet entry; Section1
Grid-No.2 (Screen-Grid) Voltage 130 130 130	130 V	Published in approved 33GY7A target datasheet entry; Section1
Grid-No.1 (Control-Grid) Voltage 0 -22.5	-22.5 V	Published in approved 33GY7A target datasheet entry; Section1
Plate Resistance (Approx.)	10000 Ω	Published in approved 33GY7A target datasheet entry; Section1
Plate Current 320*	48 mA	Published in approved 33GY7A target datasheet entry; Section1
Grid-No.2 Current 22"	2.9 mA	Published in approved 33GY7A target datasheet entry; Section1
current of	1 mA	Published in approved 33GY7A target datasheet entry; Section1
current of 1 mA -80	-40 V	Published in approved 33GY7A target datasheet entry; Section1

1975 RCA RC30

Section 2 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage (ac/dc) 33.6	33.6 V	Published in approved 33GY7A target datasheet entry; Section2
Heater Current 0.45	450 mA	Published in approved 33GY7A target datasheet entry; Section2
Heater Warm-up Time (Average) 11	11 seconds	Published in approved 33GY7A target datasheet entry; Section2
DC Plate Supply Voltage	400 V	Published in approved 33GY7A target datasheet entry; Section2
Peak Positive-Pulse Plate Voltage#	5000 V	Published in approved 33GY7A target datasheet entry; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Negative-Pulse Plate Voltage	0 V	Published in approved 33GY7A target datasheet entry; Section2
DC Grid-No.2 Voltage	150 V	Published in approved 33GY7A target datasheet entry; Section2
DC Grid-No.1 Voltage	-55 V	Published in approved 33GY7A target datasheet entry; Section2
Peak Negative-Pulse Grid-No.1 Voltage	330 V	Published in approved 33GY7A target datasheet entry; Section2
Peak Cathode Current	540 mA	Published in approved 33GY7A target datasheet entry; Section2
Average Cathode Current	155 mA	Published in approved 33GY7A target datasheet entry; Section2
Plate Dissipation!	9 W	Published in approved 33GY7A target datasheet entry; Section2
Grid-No. 1-Circuit Resistance	1 MΩ	Published in approved 33GY7A target datasheet entry; Section2
# Pulse duration must not exceed 15% of a horizontal scanning cycle (	10 microseconds	Published in approved 33GY7A target datasheet entry; Section2
Peak Inverse Plate Voltage#	4200 V	Published in approved 33GY7A target datasheet entry; Section2
Peak Plate Current	810 mA	Published in approved 33GY7A target datasheet entry; Section2
Average Plate Current	135 mA	Published in approved 33GY7A target datasheet entry; Section2
Plate Dissipation	3.8 W	Published in approved 33GY7A target datasheet entry; Section2
Peak value +200	-4200 V	Published in approved 33GY7A target datasheet entry; Section2
Average value +100	-400 V	Published in approved 33GY7A target datasheet entry; Section2
Bulb Temperature (At hottest point)	200 °C	Published in approved 33GY7A target datasheet entry; Section2
Tube Voltage Drop for plate current of	250 mA	Published in approved 33GY7A target datasheet entry; Section2
Tube Voltage Drop for plate current of 250 mA	21 V	Published in approved 33GY7A target datasheet entry; Section2
# Pulse duration must not exceed 15 % of a horizontal scanning cycle (	10 microseconds	Published in approved 33GY7A target datasheet entry; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Voltage 5000 60 130	130 V	Published in approved 33GY7A target datasheet entry; Section2
Grid-No.2 (Screen-Grid) Voltage 130 130 130	130 V	Published in approved 33GY7A target datasheet entry; Section2
Grid-No.1 (Control-Grid) Voltage 0 -22.5	-22.5 V	Published in approved 33GY7A target datasheet entry; Section2
Plate Resistance (Approx.)	10000 Ω	Published in approved 33GY7A target datasheet entry; Section2
Plate Current 320*	48 mA	Published in approved 33GY7A target datasheet entry; Section2
Grid-No.2 Current 22"	2.9 mA	Published in approved 33GY7A target datasheet entry; Section2
current of	1 mA	Published in approved 33GY7A target datasheet entry; Section2
current of 1 mA -80	-40 V	Published in approved 33GY7A target datasheet entry; Section2

TUBE TINKER

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