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7GS7
TRIODE-PENTODE TUBE

The Matsushita 7GS7 is a miniature medium mu triode and high-slope RF pentode for use as frequency changer in VHF television tuners.

General Data

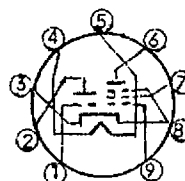
MECHANICAL DATA

Cathode	Coated unipotential
Outline drawing	6-2 Bulb . . T 6 $\frac{1}{2}$
Base	E9-1
Maximum diameter	7/8"
Maximum seated height	1 21/32"
Minimum seated height	1 15/32"
Maximum overall length	2 3/16"

Pin connections

Basing . . 9GF

Pin 1	.	.	.	.	.	Triode grid
Pin 2	.	.	.	.	.	Triode plate
Pin 3	.	.	.	.	.	Cathode
Pin 4	.	.	.	.	.	Heater
Pin 5	.	.	.	.	.	Heater
Pin 6	.	.	.	.	.	Pentode plate
Pin 7	.	.	.	.	.	Pentode grid No.2
Pin 8	.	.	.	.	.	Cathode, Pentode grid No.3
Pin 9	.	.	.	.	.	Pentode grid No.1



Mounting position Any

ELECTRICAL DATA

Heater characteristics

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Heater voltage . . . . . 7.6 volts
Heater current . . . . . 0.3 amp.
Maximum heater-cathode voltage* (Design center values)
    Heater negative with respect to cathode:
        DC . . . . . 100 volts
        Total DC and peak . . . . 100 volts
    Heater positive with respect to cathode:
        DC . . . . . 100 volts
        Total DC and peak . . . . 100 volts

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Remark: * To fulfil the modulation hum requirements in intercarrier receivers, heater-cathode voltage should not exceed 75 volts rms.
With respect to modulation hum in A.M. sound receivers, heater-cathode voltage should not exceed 50 volts rms.

Direct interelectrode capacitances (without external shield)

Pentode section

Grid No.1 to cathode & grid No.3, grid No.2 and heater	6.0	$\mu\mu f$
Plate to cathode & grid No.3, grid No.2 and heater	3.6	$\mu\mu f$
Grid No.1 to plate	0.012	$\mu\mu f$

Triode section

Grid to cathode & pentode grid No.3, heater . .	2.4	$\mu\mu f$
Plate to cathode & pentode grid No.3, heater . .	1.25	$\mu\mu f$
Grid to plate.	2.0	$\mu\mu f$

Maximum ratings (Design center values)

Pentode section

Maximum plate voltage	250	volts
Maximum grid No.2 voltage	150	volts
Maximum plate dissipation	2.0	watts
Maximum grid No.2 dissipation	0.5	watts
Maximum total cathode current	18	ma
Maximum grid No.1 circuit resistance with fixed bias	0.25	megohm
Maximum grid No.1 circuit resistance with automatic bias	0.5	megohm

Triode section

Maximum plate voltage	125	volts
Maximum plate dissipation	1.5	watts
Maximum cathode current	15	ma
Maximum grid circuit resistance	0.5	megohm

Typical characteristics

Pentode section

Plate voltage	170	volts
Grid No.2 voltage	150	volts
Grid No.1 voltage	-1.2	volts
Plate current	10	ma
Grid No.2 current	3.3	ma

Transconductance		12000	μ mhos
Plate resistance		0.35min.	megohm

Triode section

Plate voltage		100	volts
Grid voltage		-3	volts
Plate current		14	ma
Transconductance		5500	μ mhos
Amplification factor		17	

Operating characteristics

Pentode section for use as frequency changer

Plate voltage		190	volts
Grid No.2 supply voltage		190	volts
Grid No.2 circuit resistance		0.018	megohm
Grid No.1 circuit resistance		0.1	megohm
Oscillator voltage		2.3	volts rms
Plate current		8.5	ma
Grid No.2 current		2.7	ma
Grid No.1 current		30	μ a
Plate resistance		0.6	megohm
Conversion transconductance		4500	μ mhos

Triode section for use as oscillator

Plate supply voltage		190	volts
Plate circuit resistance		8200	ohms
Grid circuit resistance		10000	ohms
Oscillator voltage		4.5	volts rms
Plate current		12	ma
Transconductance		3500	μ mhos