

# Matsushita Electronics Corporation

Telephone No.  
TAKATSUKI (5) 5521

Takatsuki, Osaka, Japan  
Telex: OS3461 MECTRON

Cable Address  
"MECTRON" TAKATSUKI

## 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 tunners.

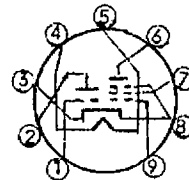
### General Data

#### 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

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

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

Triode section

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

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  $\mu$ mhos  
 Plate resistance . . . . . 0.35min. megohm

Triode section

Plate voltage . . . . . 100 volts  
 Grid voltage . . . . . -3 volts  
 Plate current . . . . . 14 ma  
 Transconductance . . . . . 5500  $\mu$ 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  $\mu$ a  
 Plate resistance . . . . . 0.6 megohm  
 Conversion transconductance . . . . . 4500  $\mu$ 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  $\mu$ mhos