12AJ7 is a 9-pin miniature type triode-heptode designed for use as a frequency converter, IF and RF amplifier of transformer-less AM/FM receivers.

BASE E9-1 Small Button Noval 9-Pin

MOUNTING POSITION—Any

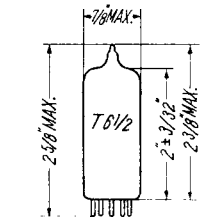
HEATER

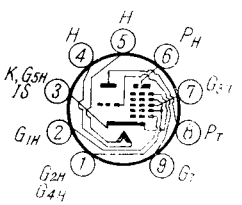
Voltage .....12.6 (V)

Current .....0.15 (A)

DIRECT INTERELECTRODE CAPACITANCES

(Without Shield)	Triode Unit	Heptode Unit	
Grid No. 1 to Plate	1.0	0.006 max.	(pF)
Input	2.6	4.8	(pF)
Output	2.1	7.9	(pF)
Grid No. 3 to All	—	6.0	(pF)
Plate to Plate	0.2		(pF)





MAXIMUM RATINGS (Design Center Values)

	Triode Unit	Heptode Unit	
Plate Voltage	250	240	(V)
Grid No. 2 Supply Voltage	—	125	(V)
Plate Dissipation	0.8	1.7	(W)
Grid No. 2 Dissipation	—	1.0	(W)
Total Cathode Current	6.5	12.5	(mA)
Peak Heater-Cathode Voltage			
Heater negative with respect to cathode		100	(V)
Heater positive with respect to cathode		100	(V)
Grid No. 1 Circuit Resistance	3.0	3.0	(MΩ)

TYPICAL OPERATION

	Heptode Unit (Converter)	Heptode Unit (RF/IF Amp.)	Triode Unit (Class A1 Amp.)	
Plate Voltage	100	100	100	(V)
Grid No. 3 Voltage		0	—	(V)
Grid No. 2 & No. 4 Voltage	63	60		(V)
Grid No. 1 Voltage	−1.1	−1.1	0	(V)
Grid No. 3 & Triode Grid Resistor	47	—	—	(kΩ)
Plate Current	1.7	3.4	13.5	(mA)
Grid No. 3+Triode Grid Current	115			(μA)
Grid No. 2+No. 4 Current	3.7	2.2		(mA)
Transconductance		2,000	3,700	(μ℧)
Conversion Transconductance	620			(μ℧)
Plate Resistance (Approx.)	800	450	—	(kΩ)
Amplification Factor		—	22	
Grid No. 1 Voltage (Approx.)				
G_m=20 μ℧	—	−16.5	—	(V)
G_c=6.2 μ℧	−14.5	—	—	(V)

TYPICAL CIRCUIT