



Home

Up

Who we are

Contact us

Search

6CA7



6CA7 is A.F. Output
Pentode suitable for use
in power amplification

Note that 6CA7 is
essentially the same as
EL34, except for the
physical dimensions (i.e.
diameter) as sketched
below. Therefore, for
downloading data sheet,
please refer to [EL34 page](#).



Quick reference data

- Anode current $I_a = 100\text{mA}$
- Transconductance $S = 12,5\text{mA/V}$
- Amplification $\mu_{g2g1} = 11$
- Output power, Class B $W_O = 100\text{W}$

Heating

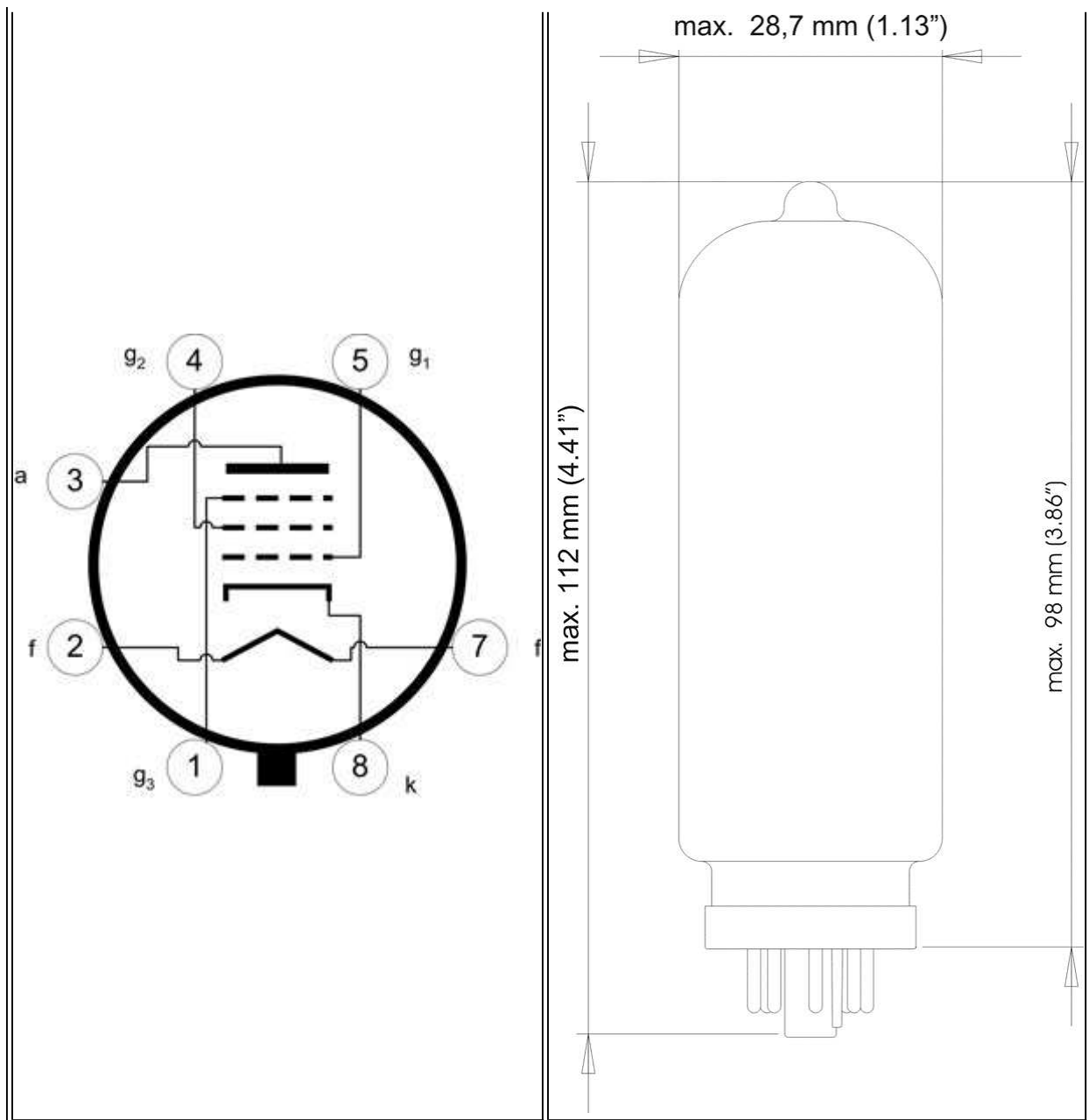
Heating is indirect by AC or DC, with parallel supply.

Heater voltage	V_f	6,3	(V)
Heater current	I_f	1,5	(A)

Dimensions and connections

Base: Octal





Operating characteristics

■ Class A

Supply voltage	V_b	265	265	(V)
Anode voltage	V_a	250	250	(V)
Grid No. 2 series resistor	R_{g2}	2	0	(k Ω)
Grid No. 3 voltage	V_{g3}	0	0	(V)
Grid No 1 . voltage	V_{g1}	-14,5	-13,5	(V)
Anode current	I_a	70	100	(mA)
Grid No. 2 current	I_{g2}	10	14,9	(mA)
Transconductance	S	11	12,5	(mA/V)

Amplification factor	μ_{g2g1}	11	11	
Internal resistance	R_i	20	17	(k Ω)
Load resistance	R_{aa}	3	2	(k Ω)
Grid No. 1 driving voltage	V_i	9,3	8,7	(V_{RMS})
Output Power	W_O	8	11	(W)
Distortion	d_{tot}	10	10	(%)
Grid No. 1 driving voltage for $W_O = 50$ mW	V_i	0.65	0,5	(V_{RMS})

■ Class B, two tubes in push-pull

Common grid No.2 series resistor (non decoupled)	R_{g2}	1000			470			(Ω)
Grid No.1 voltage	V_{g1}	-38			-32			(V)
Grid No. 3 voltage	V_{g3}	0			0			(V)
Grid No. 1 driving voltage	V_i	0	27	27	0	22,7	22,7	(V_{RMS})
Load resistance	R_{aa}		3,4	4		2,8	3,8	(k Ω)
Stupply voltage	V_b	425	425	400	375	375	350	(V)
Anode voltage	V_a	420	400	375	370	350	325	(V)
Anode current	I_a	2×30	2×120	2×100	2×35	2×120	2×93	(mA)
Grid No. 2 current	I_{g2}	2×4,4	2×25	2×25	2×4,7	2×25	2×25	(mA)
Output power	W_O	0	55	45	0	44	36	(W)
Distortion	d_{tot}		5	6		5	6	(%)

Common grid No.2 series resistor (non decoupled)	R_{g2}	750			750			(Ω)
Grid No.1 voltage	V_{g1}	-36			-39			(V)
Grid No. 3 voltage	V_{g3}	0			0			(V)
Grid No. 1 driving voltage	V_i	0	25,8	25,8	0	23,4	23,4	(V_{RMS})
Load resistance	R_{aa}		4	5		11	11	(k Ω)
Stupply voltage	V_b	500	500	475	800	800	750	(V)
Anode voltage	V_a	495	475	450	795	775	725	(V)

Anode current	I_a	2×30	2×125	2×102	2×25	2×91	2×84	(mA)
Grid No. 2 current	I_{g2}	2×4	2×25	2×25	2×3	2×19	2×19	(mA)
Output power	W_O	0	75	58	0	100	90	(W)
Distortion	d_{tot}		5	6		5	6	(%)

■ Class AB, two tubes in push-pull

Load resistance	R_{aa}	3,4		(k Ω)
Common grid No.2 series resistor (non decoupled)	R_{g2}	470		(Ω)
Common cathode resistor	R_k	130		(Ω)
Grid No. 3 voltage	V_{g3}	0		(V)
Grid No. 1 driving voltage	V_i	0	21	(V)
Stuppy voltage	V_b	375	375	(V)
Anode to earth voltage	$V_a + V_{Rk}$	355	350	(V)
Anode current	I_a	2×75	2×95	(mA)
Grid No. 2 current	I_{g2}	2×11.5	2×22.5	(mA)
Output power	W_O	0	35	(W)
Distortion	d_{tot}		5	(%)

Limiting - maximal values (design center rating system)

Anode voltage	V_{ao}	2000	(V)
	V_a	800	
Grid No. 2 voltage	V_{g2o}	800	(V)
	V_{g2}	500	
Anode dissipation	$W_a(V_i=0)$	25	(W)
	$W_a(V_i>0)$	27,5	
Grid No. 2 dissipation	W_{g2}	8	(W)
Cathode current	I_k	150	(mA)
Grid No. 1 resistor	$R_{g1}(\text{Class A \& AB})$	0,7	(MΩ)
	$R_{g1}(\text{Class B})$	0,5	
Cathode to heater voltage	V_{kf}	100	(V)

See [some graphs ...](#)

Send mail to eirc@eierc.com with questions or comments about this web site.

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