RAYTHEON

TECHNICAL INFORMATION SERVICE

Technical Information

CK7044

MINIATURE DOUBLE TRIODE

The CK7044 is a heater-cathode type, medium-mu double triode of miniature construction designed for use in computer and other applications requiring long life, high transconductance, high perveance or high emission. The cathode material used in this type assures exceptional freedom from the development of cathode interface when operated for long periods of time under cut-off conditions. This type employs separate cathode connections and o heater center-tap permitting either series or parallel heater operation.

MECHANICAL DATA

ENVELOPE..... Glass T 6½
OUTLINE ..... JEDEC (6–3)
BASE... 9 Pin Miniature (E9–1)
BASING 9H
CATHODE..Coated unipotential
MOUNTING POSITION.... Any

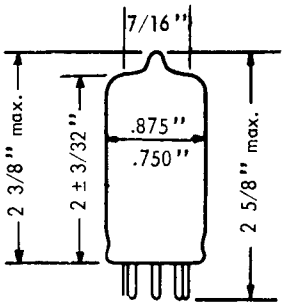
ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES (Without Shield) $\mu\mu f$

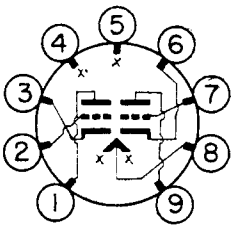
	SECTION 1		SECTION 2
Grid to Plate	6.0		6.0
Input	4.8		4.8
Output	0.65		0.55
Heater to Cathode	6.0		6.0
Grid to Grid		0.10	
Plate to Plate		1.4	

RATINGS AND NORMAL OPERATION (Each Section)	MIL – E – 1 Symbol	Test Limit or Absolute Minimum	Normal Operation	Test Limit or Absolute Maximum	MIL – E – 1 Units
Heater Voltage Series	Ef:	12.0	12.6	13.2	V
Heater Voltage Parallel	Ef:	6.0	6.3	6.6	V
Plate Voltage	Eb:	---	120	300	Vdc
Peak Plate Voltage (Note 1)	eb:	---	---	600	v
Grid Voltage	Ec1:	–100	–2.0	+1.0	Vdc
Peak Grid Voltage (Note 1)	eg:	–300	---	+30	v
Plate Dissipation (Note 2)	Pp/p:	---	4.3	4.5	W
Grid Current	ic1/g:	---	---	5.0	mAdc
Peak Positive Grid Current (Note 1)	ic1/g:	---	---	200	ma
Cathode Current	Ik/k:	---	---	50	mAdc
Peak Cathode Current (Note 1)	ik/k:	---	---	400	ma
Heater-Cathode Voltage (Note 3)	Ehk:	---	---	200	v
Grid Circuit Resistance:					
Fixed bias	Rg/g:	---	---	0.1	Meg.
Cathode bias	Rg/g:	---	---	0.47	Meg.
Bulb Temperature	T Bulb	---	---	160	°C

PHYSICAL DIMENSIONS



BASING



BOTTOM VIEW

TERMINAL CONNECTIONS:

Pin 1 Plate, Unit #2
Pin 2 Grid, Unit #2
Pin 3 Cathode, Unit #2
Pin 4 Heater
Pin 5 Heater
Pin 6 Cathode, Unit #1
Pin 7 Grid, Unit #1
Pin 8 Heater Center-Tap
Pin 9 Plate, Unit #1

ELECTRICAL DATA (Cont'd.)

RATINGS AND NORMAL OPERATION (Each Section)	MIL – E – 1 Symbol	Test Limit or Absolute Minimum	Normal Operation	Test Limit or Absolute Maximum	MIL – E – 1 Units
TESTS (Note 4)					
Heater Current Series	If:	410	450	490	mA
Heater Current Parallel	If:	820	900	980	mA
Heater - Cathode Leakage	Ihk:	---	---	30	μAdc
Plate Current	Ib/p:	26	36	45	mAdc
Transconductance	Sm/p:	8000	12,000	17,000	μmhos
Amplification Factor	Mu/p:	16	21	26	---
Plate Resistance	rp/p:	---	1750	---	ohms
Plate Current at Eb=90 Vdc; Ec1=–14 Vdc	Ib/p:	41	47	62	mAdc

NOTES:

Note 1: This Rating is based on a rectangular pulse of 10μsecond duration, 1% duty factor, rise time<1 μsecond, fall time <2 μsecond. The overshoot shall be<5% and the droop<10%.

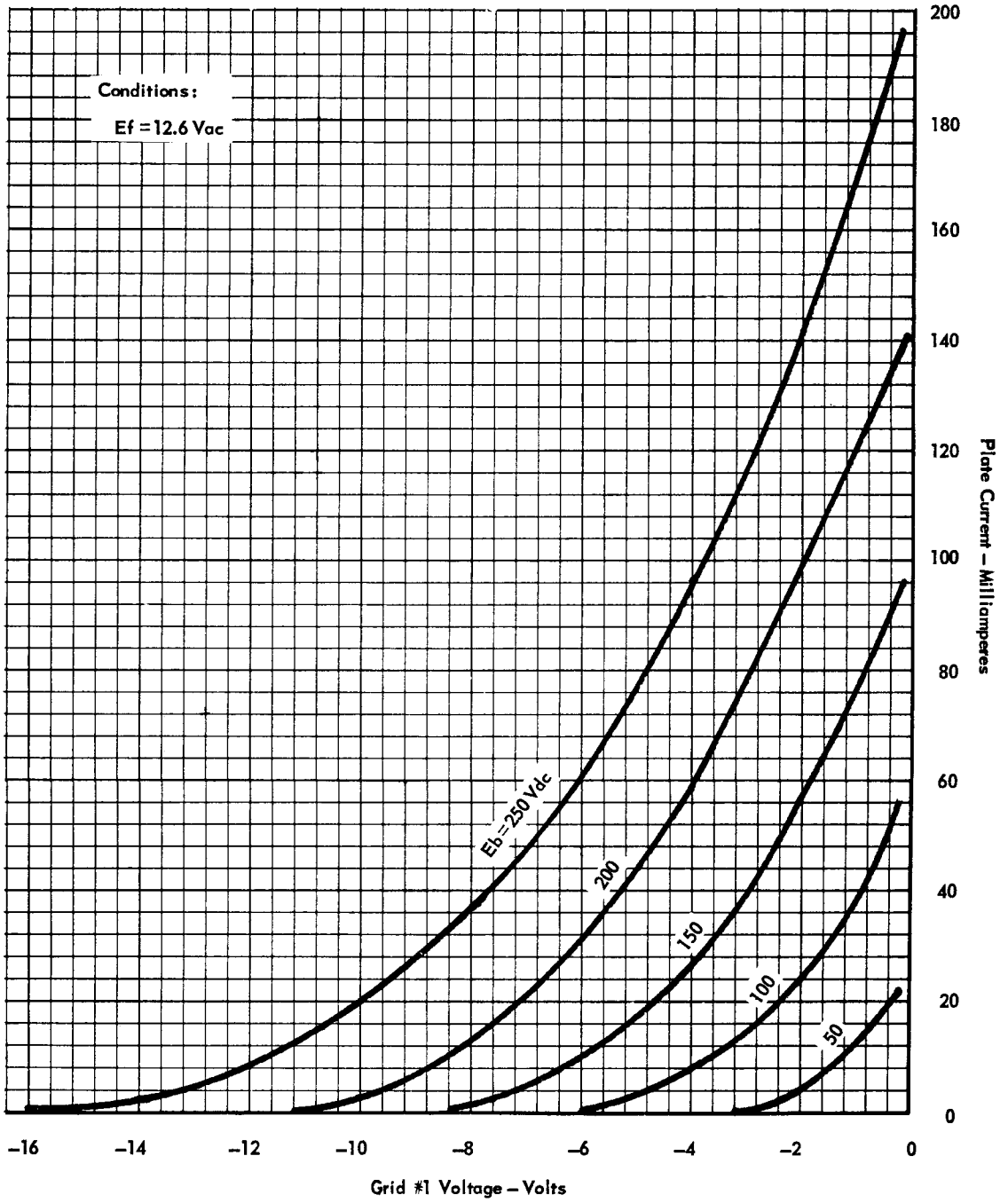
Note 2: The plate dissipation of one section may be as great as 4.5 watts provided that the maximum dissipation for both sections does not exceed 8.0 watts.

Note 3: Heater positive is not recommended for reliable operation. The total DC and peak heater - cathode voltage shall not exceed 200 **volts** and the maximum positive DC heater with respect to cathode voltage shall never exceed +100 Vdc.

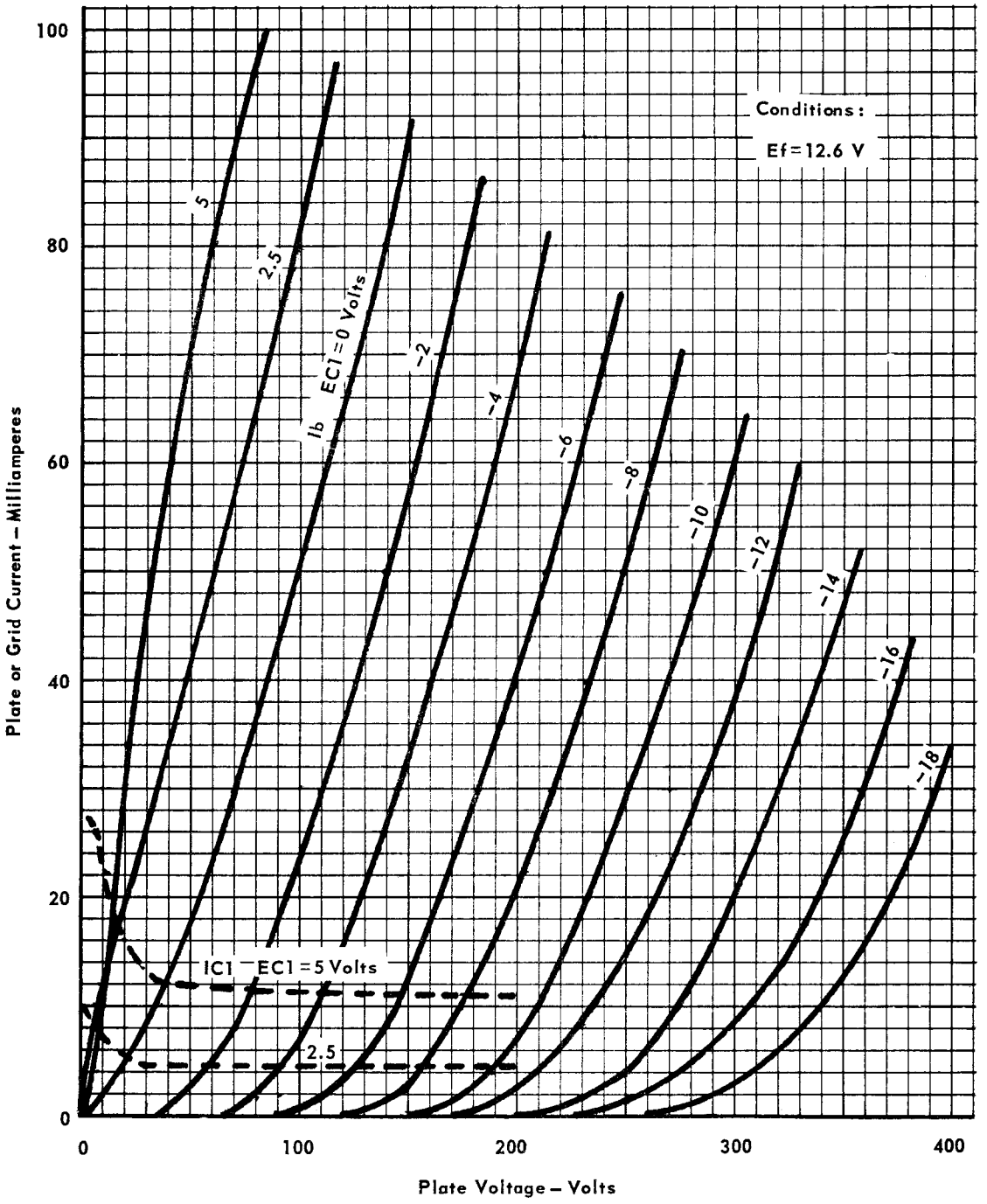
Note 4: Elements of the section not under test shall be grounded.

MINIATURE DOUBLE TRIODE

AVERAGE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS



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