

# Power Triode

Provisional Data

## Description

The 3JC/171G is a ceramic/metal, high mu, forced-air-cooled power triode intended for use in zero bias, Class B amplifier in audio or radio frequency applications.

## OUTLINE

### Abridged Maximum (Absolute) Ratings

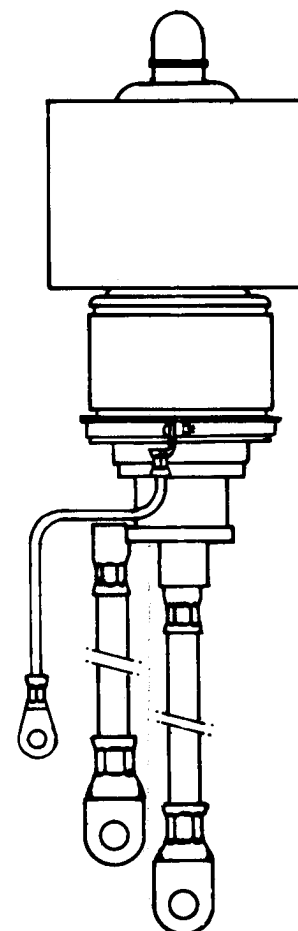
V <sub>a</sub>	(kV)	5,0
I <sub>a</sub>	(A)	2,5
P <sub>a</sub>	(kW)	3,0
P <sub>g</sub>	(W)	225

### Characteristics

Amplification factor, $\mu$ average		160
f	(V)	7,5 ± 0,375
I <sub>f</sub>	(A)	51

### Direct Interelectrode Capacitances

C <sub>g-f</sub>	(pF)	38
C <sub>g-a</sub>	(pF)	24
C <sub>a-f, max.</sub>	(pF)	1,0



### CLASS B R.F. LINEAR AMPLIFIER (GROUNDED GRID)

		Maximum Ratings	Typical	Operating	Conditions
V <sub>a</sub>	(kV)	5,0	4,0	4,8	4,8
I <sub>a</sub>	(A)	2,5			
zero signal	(A)		0,32	0,44	0,44
1 tone	(A)		2,0	1,7	2,0
2 tone	(A)		1,3	1,1	1,3
P <sub>a</sub>	(kW)	3,0	2,3	2,3	2,8
P <sub>g</sub>	(W)	225			
V <sub>k</sub> drive(pk)	(V)		210	182	208
P <sub>drive</sub>	(W)		420	295	410
Z <sub>drive</sub>	( $\Omega$ )		48	50	46
I <sub>g</sub> 1 tone	(mA)		500	340	450
2 tone	(mA)		250	190	240
P <sub>out</sub> 1 tone	(kW)		5,7	5,2	6,6
R <sub>L</sub>	( $\Omega$ )		1 210	1 720	1 425

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**CLASS B R.F. LINEAR AMPLIFIER (CARRIER CONDITIONS)**

		Maximum Ratings	Typical Operating Conditions
V <sub>a</sub>	(kV)	5,0	4,0
I <sub>a</sub>	(A)	2,5	
zero signal	(A)		0,32
1 tone	(A)		0,74
P <sub>a</sub>	(kW)	3,0	1,8
P <sub>g</sub>	(W)	225	
V <sub>g</sub> bias	(V)		0
V <sub>g</sub> drive(pk)	(V)		85
P <sub>drive</sub>	(W)		11,5
I <sub>g</sub> 1 tone	(mA)		140
P <sub>out</sub> 1 tone	(kW)		1,1
R <sub>L</sub>	(Ω)		1 750

**CLASS B A.F. POWER AMPLIFIER OR MODULATOR (SINUSOIDAL WAVE)**

		Maximum Ratings	Typical Operating Conditions
V <sub>a</sub>	(kV)	5,0	2 tubes 4,0
I <sub>a</sub>	(A)	2,5	
zero signal	(A)		2 x 0,32
max. signal	(A)		2 x 1,8
P <sub>a</sub>	(kW)	3,0	2,0 per tube
P <sub>g</sub>	(W)	225	
V <sub>g</sub> bias	(V)		0
V <sub>g</sub> drive (pk)	(V)		190
P <sub>drive</sub> (Note 1)	(W)		115
I <sub>g</sub> , max. signal (approx.)	(mA)		600
P <sub>out</sub>	(kW)		10,5 total
R <sub>L</sub> (plate to plate)	(Ω)		2 720

Note 1. Nominal drive power is one-half peak power.

**Cooling Data**

Maximum Temperatures		
Radiation core	(°C)	250
Ceramic/metal seals	(°C)	250

To keep within this limit it is necessary to direct at least 3cfm into the filament stem structure between the inner and outer filament terminals.

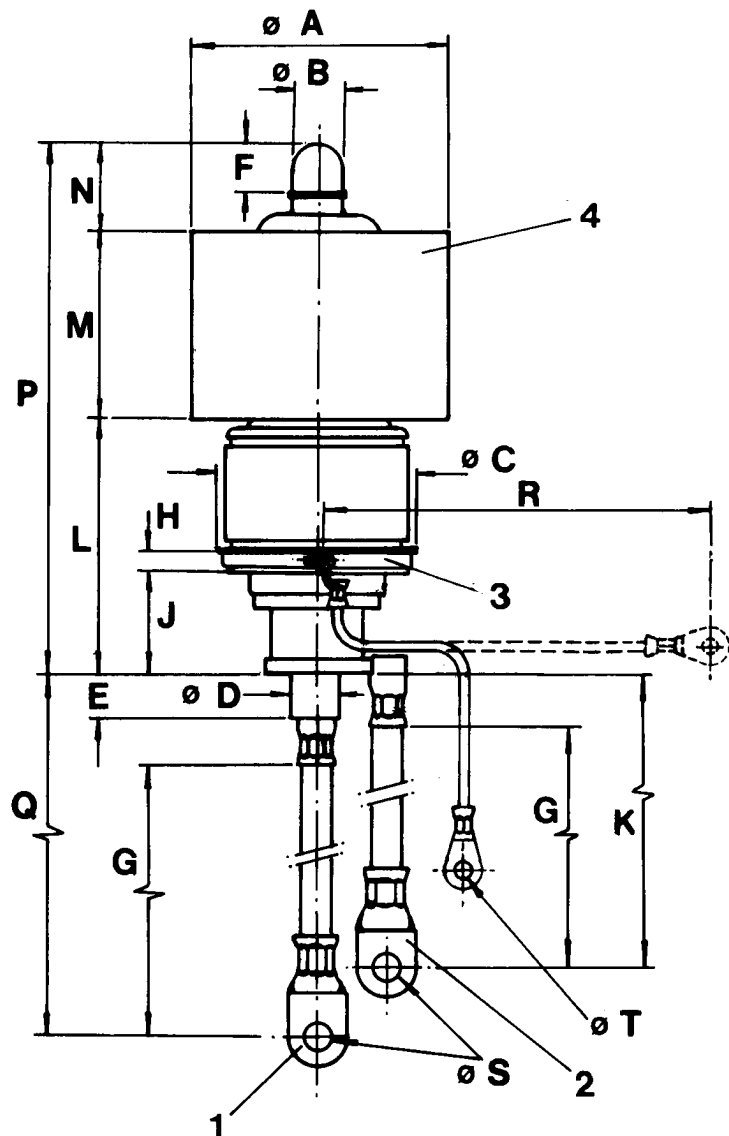
This feature may require special attention if the anode is cooled by air blow from the end remote from the base stem.

Anode-to-Base Air Flow (Note 2)				
Anode Dissipation (W)	Sea Level		10 000 Feet	
	Air Flow (cfm)	Pressure Drop S.W.G. (in.)	Air Flow (cfm)	Pressure Drop S.W.G. (in.)
1 500	33	0,6	48	0,9
2 500	66	1,25	96	1,82
3 000	72	1,40	105	2,04

Note 2. When air is supplied in the anode-to-base direction, a minimum of 3cfm must be directed into the filament-stem structure between the inner and outer filament terminals to maintain the base seals below 250°C. No separate air is required with base-to-anode airflow.

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Mechanical Data



Dimensions

	mm		in.	
	min.	max.	min.	max.
A	104,0	105,6	4,094	4,156
B	19,8	21,4	0,781	0,844
C	-	92,1	-	3,625
D	21,8	22,6	0,859	0,890
E	20,6	23,8	0,812	0,937
F	17,5	22,9	0,687	0,900
G	177,8	190,5	7,000	7,500
H	9,5	11,1	0,375	0,437
J	34,9	41,3	1,375	1,625
K	201,6	214,3	7,937	8,437
L	98,4	108,0	3,875	4,250
M	74,6	77,8	2,937	3,063
N	30,1	42,8	1,187	1,687
P	203,2	228,6	8,000	9,000
Q	227,0	239,7	8,937	9,437
R	161,9	168,3	6,375	6,625

Basic dimensions are inches

- S Bolt Size M10
- T Bolt Size M5

Connections

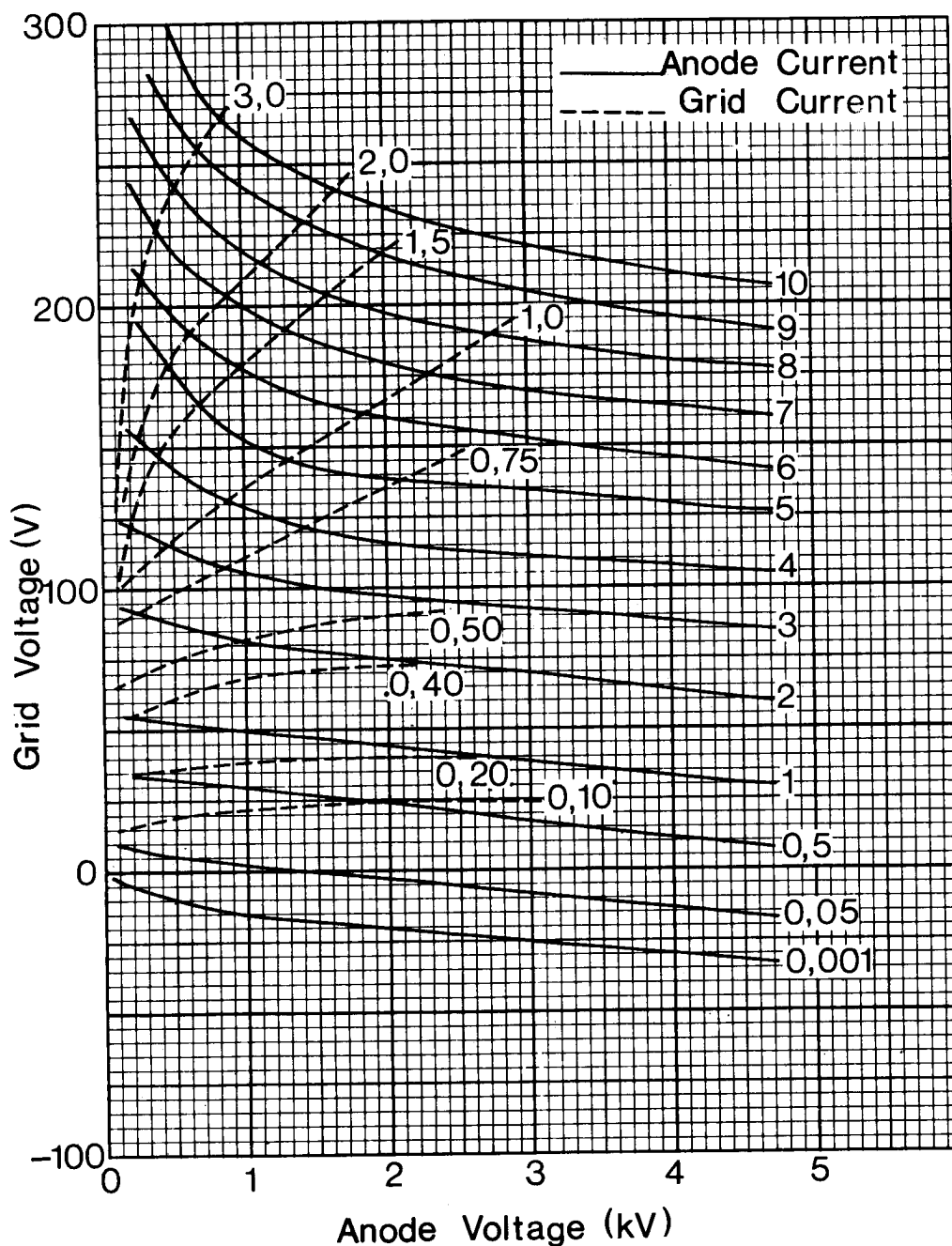
- 1 Filament
- 2 Filament
- 3 Grid
- 4 Anode

Mounting position

Vertical, anode up or down  
Tube weight, nett 2,84kg (6,25 lb)

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### Typical Constant Current Characteristics



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3JC/171G-4

These components are available from:

### ITT Components Group Europe

Standard Telephones and Cables Limited,  
Valve Product Division  
Brixham Road,  
PAIGNTON Devon. TQ4 7BE  
Tel. 0803 - 50762 Telex. 42830