

Special quality r.f. pentode for use in equipment where high ambient temperatures, mechanical vibration and shocks are unavoidable and where statistically controlled major electrical characteristics are required.

This data should be read in conjunction with GENERAL NOTES—SPECIAL QUALITY VALVES which precede this section of the handbook, and the index numbers are used to indicate where reference should be made to a specific note.

HEATER

V_h^1	6.3	V
I_h	150	mA

MOUNTING POSITION

Any

Note—Direct soldered connections to the leads of this valve must be at least 5mm from the seal and any bending of the valve leads must be at least 1.5mm from the seal.

CAPACITANCES² (measured with external shield)

C_{a-g1}	<15	mpF
C_{in}	4.2	pF
C_{out}	3.4	pF

CHARACTERISTICS³

V_a	100	V
$*V_{g3}$	0	V
V_{g2}	100	V
V_{g1}	-1.5	V
I_a	7.5	mA
I_{g2}	2.4	mA
g_m	5.0	mA/V
r_a	>175	k Ω
R_k	0	Ω
$V_{g1} (I_a < 50\mu A)$	-9.0	V

*The suppressor grid should not be used for control or gating purposes.

LIMITING VALUES⁴ (absolute ratings)

V_h max.	6.6	V
V_h min.	6.0	V
$V_{a(b)}$ max.	330	V
V_a max.	165	V
p_a max.	800	mW
V_{g3} max.	22	V $\leftarrow$
$V_{g2(b)}$ max.	310	V
V_{g2} max.	155	V
p_{g2} max.	350	mW
$+V_{g1}$ max.	0	V $\leftarrow$
$-V_{g1}$ max.	55	V
I_k max.	16.5	mA
R_{g1-k} max.	1.1	M Ω
V_{h-k} max.	200	V
Maximum acceleration (continuous operation)	2.5	g
Maximum shock (short duration)	500	g
T_{bulb} max.	220	$^{\circ}C$

TEST CONDITIONS (unless otherwise specified)

TESTS	V_h (V)	V_{a-e} (V)	V_{g3-k} (V)	V_{g2-e} (V)	V_{g1-e} (V)	R_k (Ω)	C_k (μF)	V_{h-k} (V)	Lot average? ⁷ Min. Max.	Lot standard deviation ⁸ Max.
	6.3	100	0	100	0	150	1000	0		
				A.Q.L. ⁵		Individuals ⁶				
				(%)	Bogey ⁹	Min. Max.				
GROUP A										
Heater current					150	140 160	144	156		mA
Heater-to-cathode leakage current				0.65	—	—	—	—		4.2 mA
$V_{h-k} = \pm 100V$				0.65	—	5.0	—	—		μA
Reverse grid current				0.65	—	0 0.3	—	—		μA
$R_{g1} = 1.0M\Omega$				0.65	7.5	5.5 9.5	—	—		mA
Anode current				—	—	—	6.7	8.3		0.8 mA
Anode current				0.65	—	—	—	—		μA
$V_{g1} = -9.0V, R_k = 0\Omega$				0.65	—	50	—	—		mA
Screen-grid current				0.65	—	1.5 3.3	—	—		mA
Mutual conductance				0.65	5.0	4.2 5.8	—	—		mA/V
Sub-group quality level ¹⁰				1.0	—	—	4.7	5.3		0.31 mA/V
Inoperatives ¹⁶				0.4	—	—	—	—		—

GROUP B

Insulation

a-rest, measured at -300V
g₁-rest, measured at -100V

2.5 {

MΩ
MΩ

Change in mutual conductance

$V_h = 5.7V$

2.5

%

Reverse grid current $V_h = 7.5V$, $V_{g1} = -9.0V$,
 $R_{g1} = 1.0MΩ$, $R_k = 0Ω$. Measured after 5
minutes preheat under standard test con-
ditions, except $V_h = 7.5V$, $R_{g1} = 1.0MΩ$

μA

†A.F. noise at anode, $V_{g2-e} = 19V$, $R_{g1} = 100kΩ$

$R_{g2} = 1.0kΩ$, $R_s = 200kΩ$

mV

Anode impedance

6.5

kΩ

Capacitances² (shielded) No applied voltages

6.5

C_{in}

C_{out}

C_{a-g1}

pF

pF

mpF

Low pressure voltage breakdown

Pressure = 55 ± 5 mmHg

Voltage = $300V_{r.m.s.}$. No other applied
voltages

6.5

Microphonic noise at the anode at 50c/s, 15g
min. peak acceleration, $R_a = 10kΩ$

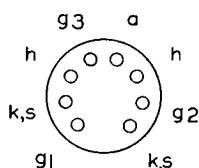
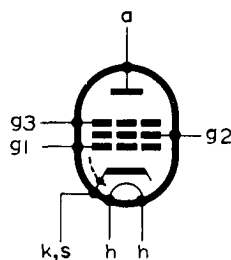
mV
(r.m.s.)

†The valve is tapped with a specified hammer and the output observed on a meter of specified dynamic response.

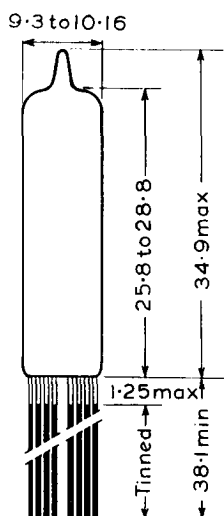
TESTS	A.Q.L. ⁵ (%)	Individuals ⁶		Lot average ⁷		Lot standard deviation ⁸ Max.
		Bogey ⁹	Min.	Max.	Min.	
GROUP C						
Lead fragility test ^{13B} 4 arcs	2.5	—	—	—	—	—
Fatigue¹⁴						
$V_h = 6.3V$. No other voltages applied. 2.5g min. peak acceleration, fixed frequency $f = 25c/s$ min. 60c/s max. for 32 hours in each of 3 mutually perpendicular planes						
Post fatigue tests						
Heater-to-cathode leakage current		—	—	—	—	—
$V_{h-k} = \pm 100V$	6.5	—	—	—	—	— μA
Change in mutual conductance		—	—	—	—	— %
Microphonic noise as in group B		—	—	—	—	— mV (r.m.s.)
Shock¹⁵						
$V_{h-k} = 100V$ (cathode negative), $R_{g1} = 100k\Omega$, 500g						
Post shock tests						
Heater-to-cathode leakage current		—	—	—	—	— μA
$V_{h-k} = \pm 100V$	20	—	—	—	—	— %
Change in mutual conductance		—	—	—	—	— mV
Microphonic noise as in group B		—	—	—	—	— (r.m.s.)
Glass strain test ^{11B} . No applied voltages	6.5	—	—	—	—	—

6205

SPECIAL QUALITY R.F. PENTODE



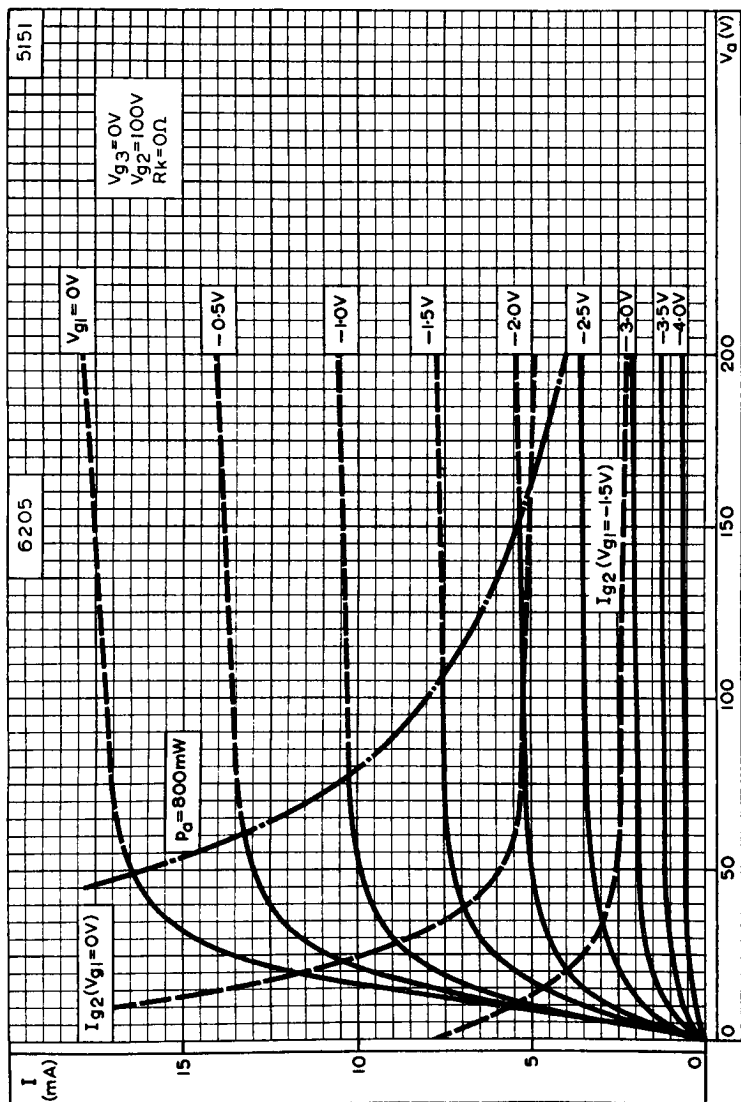
B8D/F Base



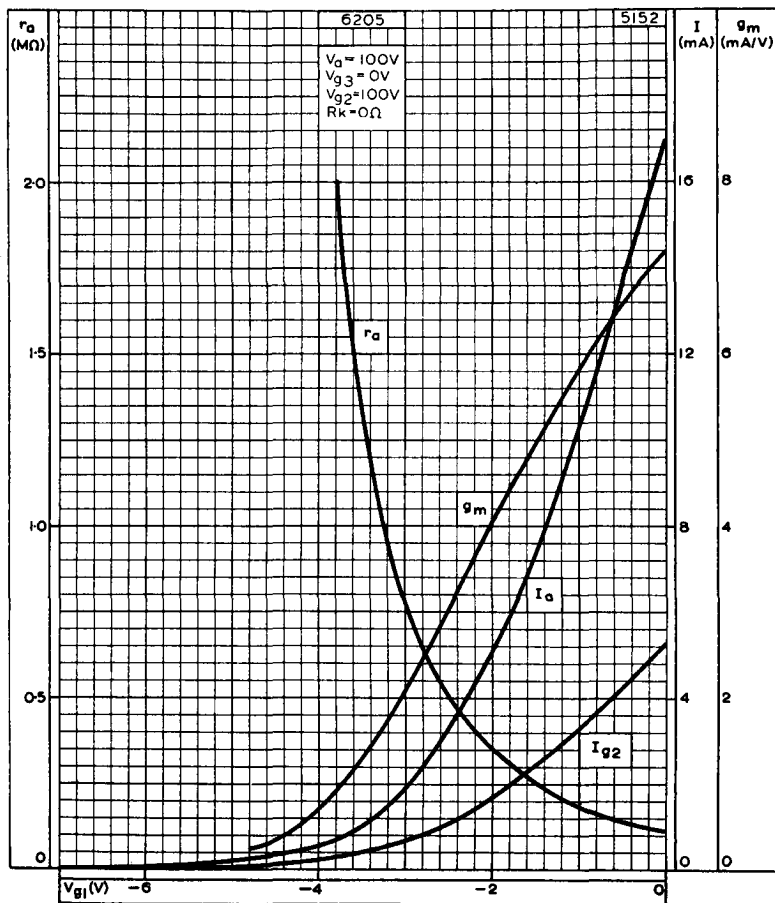
5544

All dimensions in mm

The bulb and base dimensions of this valve are in accordance with BS448, section B8D/F.



ANODE AND SCREEN-GRID CURRENTS PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER



ANODE AND SCREEN-GRID CURRENTS, MUTUAL CONDUCTANCE AND ANODE IMPEDANCE PLOTTED AGAINST CONTROL-GRID VOLTAGE