

SPECIAL QUALITY DOUBLE TRIODE

M8162

Special quality double triode for use in equipment where 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

The heater is centre-tapped and the two sections may be operated in series or parallel with one another.

Series	V_h applied between pins 4 and 5		
Parallel	V_h applied between pin 9 and pins 4 and 5 connected together.		
	Series	Parallel	V
V_h^1	12.6	6.3	V
I_h	150	300	mA

CAPACITANCES² (measured without an external shield)

* C_{a-g}	1.6	pF
* C_{in}	2.5	pF
$C_{out'}$	470	mpF
$C_{out''}$	400	mpF
$C_{h-k'+k''}$	4.75	pF
$C_{a'-a''}$	240	mpF

*Each section

CHARACTERISTICS³ (each section)

V_a	250	V
I_a	10	mA
V_g	-2.0	V
g_m	5.5	mA/V
μ	60	
r_a	11	k Ω
R_k	0	Ω

LIMITING VALUES⁴ (absolute ratings) each section

$V_{a(b)}$ max.	550	V
V_a max.	380	V
p_a max.	2.8	W
I_k max.	15	mA
$-V_g$ max.	55	V
R_{g-k} max. (cathode bias)	1.0	M Ω
R_{g-k} max. (fixed bias)	500	k Ω
V_{h-k} max.	100	V
Maximum acceleration (continuous operation)	2.5	g
Maximum shock (short duration)	500	g
T_{bulb} max.	200	$^{\circ}C$



M8162

SPECIAL QUALITY DOUBLE TRIODE

TEST CONDITIONS (unless otherwise specified)

V_h (V)	V_{g-e} (V)	V_{g-c} (V)	R_{ik} (Ω)	C_k (μF)	V_{h-k} (V)
12.6	250	0	200	1000	0

TESTS

A.Q.L. ⁵ (%)	Individuals ⁶		Lot average ⁷		Lot standard deviation ⁸ Max.
	Bogey ⁹	Min.	Max.	Min.	

GROUP A

Insulation

a-rest measured at -300V,

g-rest measured at -100V

Reverse grid current. R_g max. = 500k Ω

GROUP B

Heater current

Heater to cathode leakage current

V_{h-k} = 100V cathode negative

V_{h-k} = 100V cathode positive

Anode current

Anode current V_{g-e} = -20V

Mutual conductance

Group quality level¹⁰

0.25	100	—	—	—	—	M Ω
0.25	100	—	—	—	—	M Ω
0.25	—	—	0.7	—	—	μA
0.65	138	162	—	—	—	mA
—	—	10	—	2.0	—	μA
—	—	10	—	2.0	—	μA
{ 0.65	10	7.0	14	—	—	mA
—	—	—	—	11.4	—	mA
0.65	—	—	10	—	—	μA
{ 0.65	5.5	4.5	6.5	—	—	mA/V
—	—	—	—	4.9	6.1	mA/V
1.0	—	—	—	—	—	0.46 mA/V

M8162

SPECIAL QUALITY DOUBLE TRIODE

TESTS	A.Q.L. ⁵ (%)	Individuals ⁶		Lot average ⁷		Lot standard deviation ⁸	
		Bogey ⁹	Min.	Max.	Min.	Max.	Min.
GROUP E							
Fatigue¹⁴							
V _h = 14V, 1 minute on 3 minutes off. No other voltages applied, 5g min. peak acceleration, f = 170c/s for 33 hours in each of 3 mutually perpendicular planes							
Post fatigue tests							
Heater to cathode leakage current.							
	2.5	—	—	30	—	—	—
	2.5	—	—	1.5	—	—	—
	2.5	—	3.8	—	—	—	—
	2.5	—	—	100	—	—	—
	6.5	—	—	—	—	—	—
Shock¹⁵							
No applied voltages; 500g							
Post shock tests							
Heater to cathode leakage current.							
	2.5	—	—	30	—	—	—
	2.5	—	—	1.5	—	—	—
	2.5	—	3.8	—	—	—	—
	2.5	—	—	100	—	—	—
	6.5	—	—	—	—	—	—

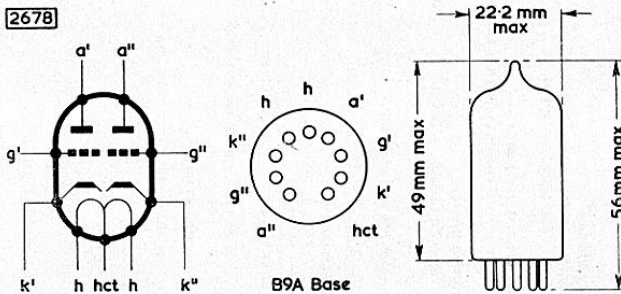
M8162

SPECIAL QUALITY DOUBLE TRIODE

GROUP G

	A.Q.L. ⁵ (%)	Min.	Max.	
Valves are held for 28 days and retested for Inoperatives ¹⁶	0.5	—	—	
Reverse grid current. R_g max. = 500k Ω	0.5	—	0.7	μ A

2678



The bulb and base dimensions of this valve are in accordance with BS448, Section B9A