

SPECIAL QUALITY DOUBLE TRIODE

EI82CC

Special quality double triode for use in computer circuits. This valve will maintain its emission capabilities after long periods of operation under cut-off conditions.

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

Suitable for parallel operation, a.c. or d.c. The heater is centre-tapped and two sections may be operated in series or in parallel with one another.

	Series	Parallel	
V_h^{11}	12.6	6.3	V
I_h	320	640	mA

The maximum variation of heater current at 6.3V is $\pm 35\text{mA}$.

CAPACITANCES² (measured without an external shield)

	Minimum	Average	Maximum	
$C_{g'-g'}$	3.4	4.0	4.6	pF
$C_{a''-g''}$	3.4	4.1	4.8	pF
* C_{in}	5.3	6.0	6.7	pF
$C_{out'}$	0.75	1.1	1.45	pF
$C_{out''}$	0.65	1.0	1.35	pF
$C_{g'-g''}$	—	—	150	mpF
$C_{a'-a''}$	—	600	800	mpF
$C_{a'-g''}$	—	—	100	mpF
$C_{a''-g'}$	—	—	100	mpF
* C_{h-k}	—	4.0	—	pF

*Each section

CHARACTERISTICS³ (each section)

V_a	120	V
I_a	36	mA
V_g	-2.0	V
g_m	15	mA/V
r_a	1.6	k Ω
μ	24	
R_k	0	Ω

CHARACTERISTIC RANGE VALUES FOR EQUIPMENT DESIGN

(each section)

	Average	Initial range	End of life*	
Anode current				
at $V_a = 90V$, $I_g = 250\mu A$	52	41 to 62	24	mA
at $V_a = 120V$, $V_g = -2V$	36	26 to 45	—	mA
at $V_a = 150V$, $V_g = -14V$	—	<0.2	—	mA
Mutual conductance				
at $V_{a-k} = 120V$, $V_{g-e} = 0V$				
$R_k = 55\Omega$	—	11.2 to 18.8	8.0	mA/V ←
Negative control-grid current				
at $V_a = 120V$, $V_g = -2V$, $R_g = 100k\Omega$	—	<0.2	1.0	μA

INSULATION

	Initial range	End of life*	
Between heater and cathode measured at $V_{h-k} = 200V$ (cathode positive) $R_{lim} = 1M\Omega$			
Leakage current	<15	30	μA
Between any two electrodes measured at 300V	>100	20	$M\Omega$

*To allow for valve deterioration during life, circuits should be designed to function with a valve in which one or more of the characteristics have changed to the values stated.

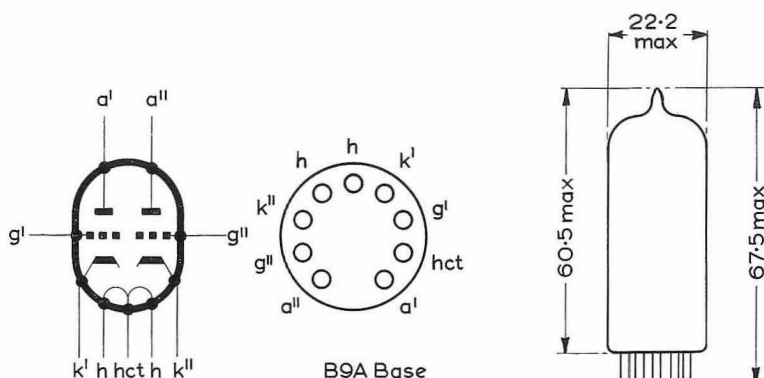
LIMITING VALUES⁴ (absolute ratings) each section

$V_{a(b)}$ max.	600	V
V_a max.	300	V
p_a max.	4.5	W
$p_{a'} + p_{a''}$ max.	8.0	W
$-V_g$ max.	100	V
$+V_g$ max.	1.0	V
* $-V_{g(pk)}$ max.	200	V
* $+V_{g(pk)}$ max.	30	V
I_g max.	8.0	mA
* $i_{g(pk)}$ max.	200	mA
I_k max.	60	mA
* $i_{k(pk)}$ max.	400	mA
R_{g-k} max. (fixed bias)	500	$k\Omega$
R_{g-k} max. (self bias)	1.0	$M\Omega$
V_{h-k} max.	120	V
$V_{h-k(pk)}$ max.	200	V
T_{bulb} max.	160	$^{\circ}C$

*Duty factor = 1%, max pulse duration = 10 μs .

OPERATING NOTE

The EI82CC is not intended for applications which are critical with regard to microphony or hum.

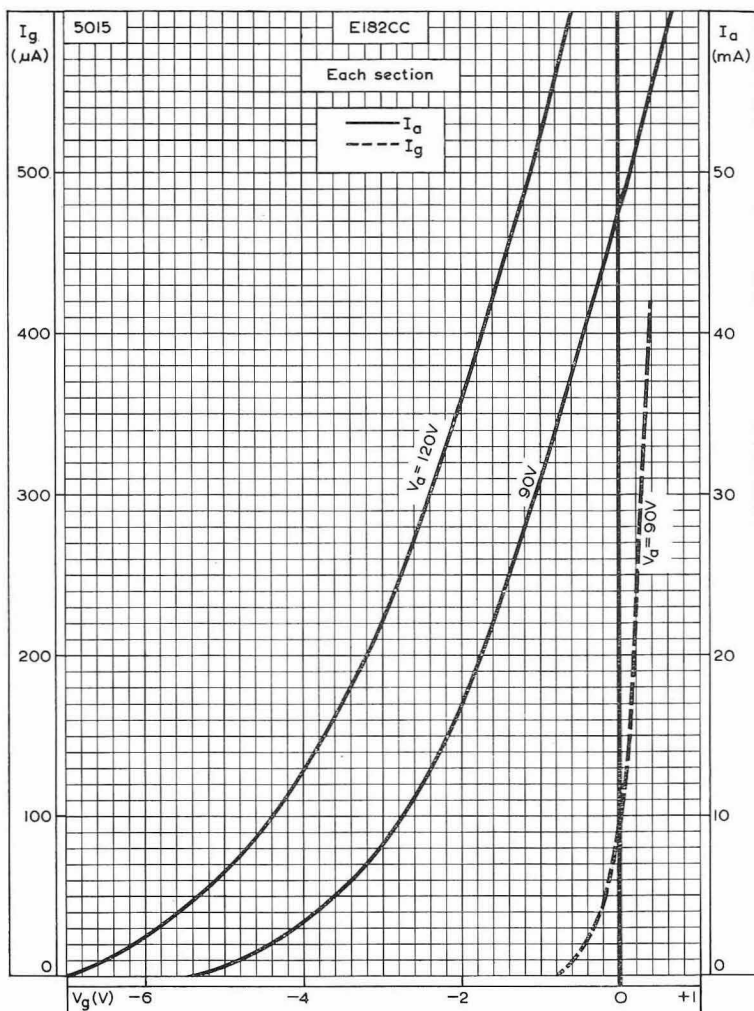


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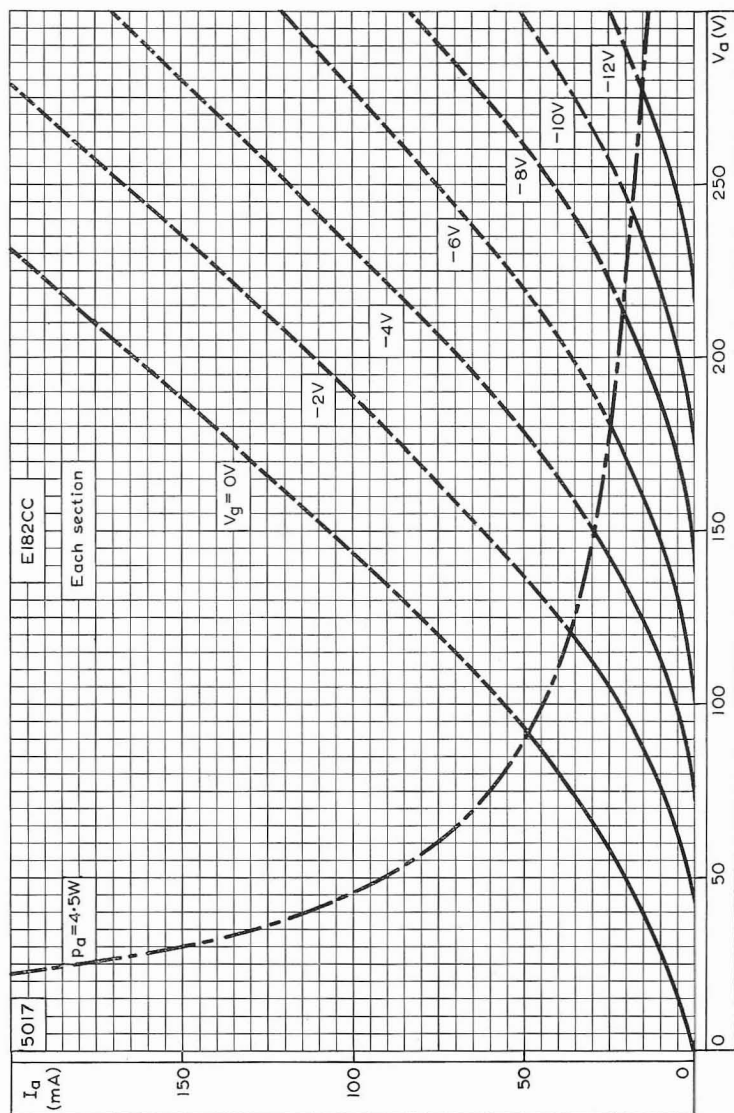
All dimensions in mm

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

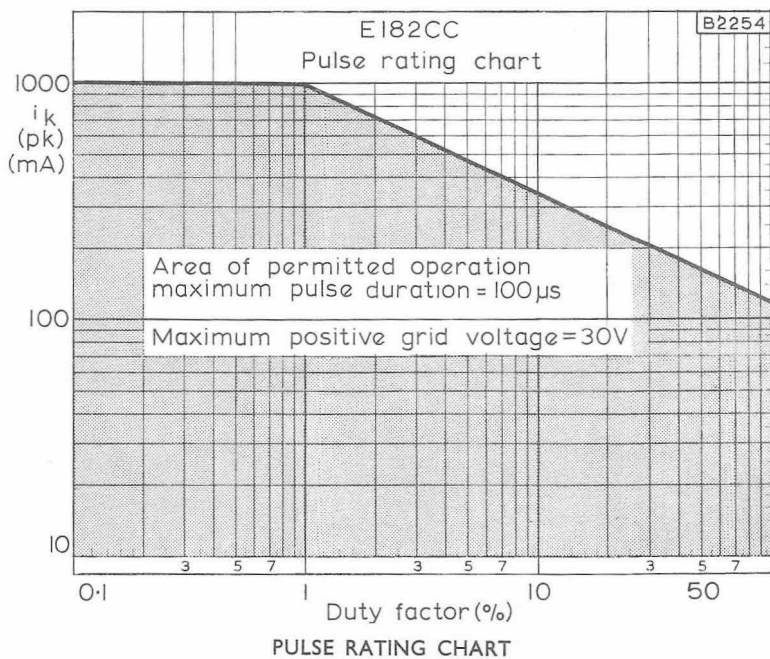


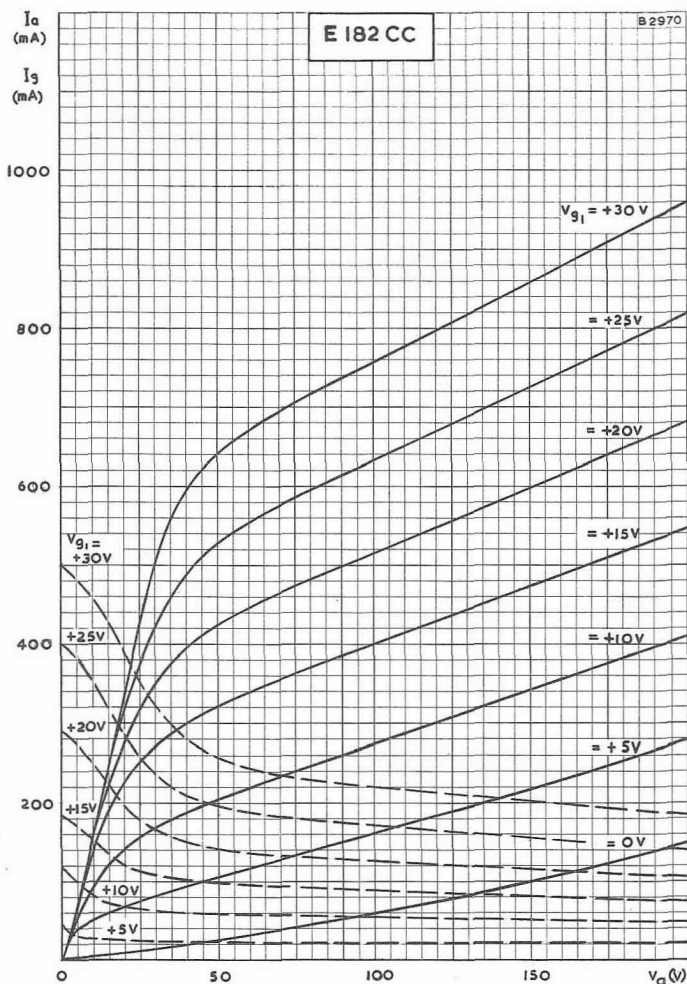


ANODE AND GRID CURRENTS PLOTTED AGAINST GRID VOLTAGE WITH ANODE VOLTAGE AS PARAMETER.



ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH GRID VOLTAGE AS PARAMETER.





ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH GRID VOLTAGE AS PARAMETER.

GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH GRID VOLTAGE AS PARAMETER