

ELECTRONIC TUBE REFERENCE

UCL83

Power - Pentode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

2 SECTIONS

CONSTRUCTION

PENTODE-TRIODE

100 mA series-heater triode/pentode combining audio voltage amplification with power-output service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	B9A	BASE PINS	9
NOMINAL HEATER	38 V / 100 mA	PARALLEL HEATER	– / –
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Dissimilar

SECTION RATINGS

SECTION1 Pentode	
PLATE RESISTANCE	53000 Ω
TRANSCONDUCTANCE	0.0055 S
AMPLIFICATION FACTOR	10
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM SCREEN VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	5.4 W
MAXIMUM SCREEN DISSIPATION	1.2 W
MAXIMUM CATHODE CURRENT	45 mA
Promoted values are mapped from the supplied datasheet; additional published ratings, characteristics, capacitances and operating points are retained in TUBE_SECTION_PARAMETER.	

SECTION2 Triode	
PLATE RESISTANCE	34000 Ω
TRANSCONDUCTANCE	0.0025 S
AMPLIFICATION FACTOR	85
MAXIMUM PLATE VOLTAGE	250 V
MAXIMUM PLATE DISSIPATION	3.5 W
<i>Triode AF voltage-amplifier section; promoted values use the published 200 V characteristic point.</i>	

Combined triode and output pentode with separate cathodes and a 100 mA heater for series-heater audio equipment.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Mullard

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1963 MULLARD

Section 1 · Pentode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode plate voltage	170 V	Section1
Pentode screen-grid voltage	170 V	Section1
Pentode plate current	30 mA	Section1
Pentode screen-grid current	5 mA	Section1
Pentode control-grid voltage	-9.5 V	Section1
Pentode transconductance	5500 μ S	Section1
Pentode plate resistance	53000 Ω	Section1
Pentode screen-to-control-grid amplification factor	10 ratio	Section1

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output power	2.2 W	ClassA;SingleEnded;Va=170V
Output power	2.5 W	ClassA;SingleEnded;Va=200V
Output power	5 W	ClassAB;PushPull;TwoTubes;Va=170V
Output power	7.2 W	ClassAB;PushPull;TwoTubes;Va=200V

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pentode output capacitance	4.7 pF	Section1

1963 MULLARD

Section 2 · Triode

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate voltage	170 V	Section2;Point1
Triode plate current	1.6 mA	Section2;Point1
Triode transconductance	2100 uS	Section2;Point1
Triode plate resistance	40000 Ohm	Section2;Point1
Triode amplification factor	82 ratio	Section2;Point1
Triode plate voltage	200 V	Section2;Point2
Triode transconductance	2500 uS	Section2;Point2
Triode plate resistance	34000 Ohm	Section2;Point2
Triode amplification factor	85 ratio	Section2;Point2

CAPACITANCE		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Triode plate-to-grid capacitance	1.6 pF	Section2
Triode input capacitance	2.3 pF	Section2



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1967 Mullard Receiving Tubes for Maintenance

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1967 MULLARD RECEIVING TUBES FOR MAINTENANCE

Section 1 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
separate cathodes and	100 mA	Published in approved UCL83.pdf target datasheet; Section2
Ca t _ gp <	0.1 pF	Published in approved UCL83.pdf target datasheet; Section2

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cat _ ap <	1.6 pF	Published in approved UCL83.pdf target datasheet; Section2
Cgt_ gp <	0.03 pF	Published in approved UCL83.pdf target datasheet; Section2
Cgt_a p <	0.05 pF	Published in approved UCL83.pdf target datasheet; Section2
Ca-gl <	0.2 pF	Published in approved UCL83.pdf target datasheet; Section2
' in	5.7 pF	Published in approved UCL83.pdf target datasheet; Section2
Cou t	4.7 pF	Published in approved UCL83.pdf target datasheet; Section2
Cgl_ h	0.4 pF	Published in approved UCL83.pdf target datasheet; Section2
Ca_ g	1.6 pF	Published in approved UCL83.pdf target datasheet; Section2
Cl n	2.3 pF	Published in approved UCL83.pdf target datasheet; Section2
' out D	32 pF	Published in approved UCL83.pdf target datasheet; Section2
la(o) 30	27 mA	Published in approved UCL83.pdf target datasheet; Section2
Ig 2 f0) 5.0	4.4 mA	Published in approved UCL83.pdf target datasheet; Section2
la(o) 2 x24 2 x	25 mA	Published in approved UCL83.pdf target datasheet; Section2
la (max. sig.) 2 x27 .5 2 x	29 mA	Published in approved UCL83.pdf target datasheet; Section2
Ig 2 (o) 2 x 3.8 2 x	3.9 mA	Published in approved UCL83.pdf target datasheet; Section2
Ig 2 (ma x . sig.) 2 x6.25 2 x	8.5 mA	Published in approved UCL83.pdf target datasheet; Section2
I k max	45 mA	Published in approved UCL83.pdf target datasheet; Section2
Ik max	15 mA	Published in approved UCL83.pdf target datasheet; Section2
separate cathode and	100 mA	Published in approved UCL83.pdf target datasheet; Section2

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
la	30 mA	Published in approved UCL83.pdf target datasheet; Section2
la 1.6	2.4 mA	Published in approved UCL83.pdf target datasheet; Section2
gm 2.1	2.5 mA	Published in approved UCL83.pdf target datasheet; Section2

1967 MULLARD RECEIVING TUBES FOR MAINTENANCE

Section 2 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
separate cathodes and	100 mA	Published in approved UCL83.pdf target datasheet; Section1
Ca t _ gp <	0.1 pF	Published in approved UCL83.pdf target datasheet; Section1
Cat _ ap <	1.6 pF	Published in approved UCL83.pdf target datasheet; Section1
Cgt_ gp <	0.03 pF	Published in approved UCL83.pdf target datasheet; Section1
Cgt_a p <	0.05 pF	Published in approved UCL83.pdf target datasheet; Section1
Ca-gl <	0.2 pF	Published in approved UCL83.pdf target datasheet; Section1
' in	5.7 pF	Published in approved UCL83.pdf target datasheet; Section1
Cou t	4.7 pF	Published in approved UCL83.pdf target datasheet; Section1
Cgl_ h	0.4 pF	Published in approved UCL83.pdf target datasheet; Section1
Ca_ g	1.6 pF	Published in approved UCL83.pdf target datasheet; Section1
Cl n	2.3 pF	Published in approved UCL83.pdf target datasheet; Section1
' out D	32 pF	Published in approved UCL83.pdf target datasheet; Section1
la(o) 30	27 mA	Published in approved UCL83.pdf target datasheet; Section1
Ig 2 f0) 5.0	4.4 mA	Published in approved UCL83.pdf target datasheet; Section1

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
$I_a(o) \times 24 \times 2$	25 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_a (max. sig.) \times 27.5 \times 2$	29 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_g \times 2(o) \times 3.8 \times 2$	3.9 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_g \times 2(max. sig.) \times 6.25 \times 2$	8.5 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_{k max}$	45 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_k max$	15 mA	Published in approved UCL83.pdf target datasheet; Section1
separate cathode and	100 mA	Published in approved UCL83.pdf target datasheet; Section1

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
I_a	30 mA	Published in approved UCL83.pdf target datasheet; Section1
$I_a 1.6$	2.4 mA	Published in approved UCL83.pdf target datasheet; Section1
$g_m \times 2.1$	2.5 mA	Published in approved UCL83.pdf target datasheet; Section1