

February 1, 1957

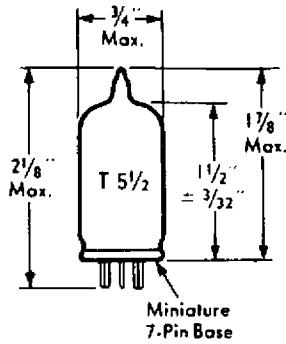
## Dual-Control Pentode Type WL-6954

The WL-6954 is a sharp-cutoff dual-control pentode of 7-pin miniature construction designed for service in industrial and military equipment as a gating, mixing or delay tube.

### GENERAL DATA

#### ELECTRICAL:

Cathode	.....	Coated Unipotential
Heater		
Voltage (ac or dc)	..... 6.3	Volts
Current	..... 0.3	Ampere
Direct Interelectrode Capacitances (Unshielded)		
Grid 1 to Plate	..... 0.0035 max.	$\mu\text{uf}$
Grid 3 to Plate	..... 1.5 max.	$\mu\text{uf}$
Grid 1 Input	..... 6.0	$\mu\text{uf}$
Output	..... 5.0	$\mu\text{uf}$
Grid 3 to All Other Elements	..... 3.0	$\mu\text{uf}$
Coupling (Grid 1 to Grid 3)	..... 0.09 max.	$\mu\text{uf}$



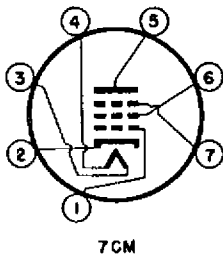
OUTLINE DRAWING

#### MECHANICAL:

Bulb	.....	T-5 1/2
Base	.....	Miniature 7-Pin (JETEC E7-1)
Outline	.....	S-2
Basing	.....	7CM
Mounting Position	.....	Any

### CHARACTERISTICS

Plate Voltage	..... 150	Volts
Grid 2 (Screen) Voltage	..... 150	Volts
Grid 3 Voltage	..... -3.0	Volts
Grid 1 Voltage	..... -1.0	Volts
Plate Resistance	..... 50,000	Ohms
Transconductance		
Grid 1 to Plate	..... 2050	$\mu\text{mhos}$
Grid 3 to Plate	..... 1000	$\mu\text{mhos}$
Plate Current	..... 5.8	Ma.
Grid 2 Current	..... 6.6	Ma.
Grid 1 Cutoff	..... -6.5	Volts
Grid 3 Cutoff	..... -9.5	Volts



SOCKET CONNECTIONS  
BOTTOM VIEW

### MAXIMUM RATINGS

(DESIGN CENTER VALUES)

Plate Voltage	..... 300 max.	Volts
Grid 2 Supply Voltage	..... 300 max.	Volts
Grid 2 Voltage	.....	See Grid 2 Input Rating Chart
Positive Grid 1 Voltage	..... 0 max.	Volts
Plate Dissipation	..... 3.0 max.	Watts
Grid 2 Dissipation	..... 1.0 max.	Watt
Heater-Cathode Voltage:		
Heater Positive with Respect to Cathode:		
DC Component	..... 100 max.	Volts
Total DC and Peak	..... 200 max.	Volts
Heater Negative with Respect to Cathode:		
Total DC and Peak	..... 200 max.	Volts

## TEST LIMITS

	Min.	Max.	
<b>HEATER CURRENT</b>	0.275	0.325	Ampere
Heater Volts = 6.3			
<b>PLATE CURRENT</b>			
Heater Volts = 6.3			
Plate Volts = 250			
Grid 2 Volts = 150			
(1) Cathode Bias Resistor § = 68 Ohms . . . . .	5.5	12.5	Ma.
(2) Grid 1 Volts = -8.0 . . . . .	0	35	μamp
(3) Grid 3 Volts = -15.0 & Grid 1 Volts = -2.0 . . . . .	0	100	μamp
<b>GRID 2 CURRENT</b>			
Heater Volts = 6.3			
Plate Volts = 250			
Grid 2 Volts = 150			
Cathode Bias Resistor § = 68 Ohms . . . . .	3.3	5.9	Ma.
<b>GRID 1 TRANSCONDUCTANCE</b>			
Heater Volts = 6.3                      Grid 2 Volts = 150			
Plate Volts = 250                      Cathode Bias Resistor § = 68 Ohms			
Initial . . . . .	3500	5600	μmhos
After 500 hrs. Life Test . . . . .	3000		μmhos
<b>INTERELECTRODE CAPACITANCES (Shielded) ▲</b>			
Grid 1 to Plate . . . . .		0.0035	μaf
Input . . . . .	4.4	6.6	μaf
Output . . . . .	3.5	6.5	μaf
<b>HEATER-CATHODE LEAKAGE</b>			
Heater 100 Volts Positive			
With Respect to Cathode . . . . .	0	20	μamp
Heater 100 Volts Negative			
With Respect to Cathode . . . . .	0	20	μamp
<b>TOTAL GRID CURRENT</b>	0	-1.0	μamp
Heater Volts = 6.3                      Grid 2 Volts = 150			
Plate Volts = 250                      Grid 1 Volts = -1.5			
<b>EMISSION</b>			Ma.
Heater Volts = 6.3                      Grid 2 Volts = 20			
Plate Volts = 20                      Grid 1 Volts = 20 †			
<b>LIFE TEST (Group A)</b>	500		Hours
Heater Volts = 6.3                      Grid 3 Volts = 0			
Plate Volts = 250                      Grid 1 Volts = -4.0			
Grid 2 Volts = 150                      Load Resistance = 250,000 Ohms			
<b>RADIO FREQUENCY NOISE (Calibrating R.F. Signal is 30 Millivolts)</b>			
Heater Volts = 6.3                      Grid 2 Volts = 150			
Plate Volts = 250                      Cathode Resistor = 68 Ohms			
<b>VIBRATION SIGNAL OUTPUT (at 25 cycles with 2.5G accelerations -</b>		100	millivolts
Heater Volts = 6.3                      Plate Resistor = 2000 Ohms			
Plate Volts = 250                      Grid 1 Resistor = 1.0 Megohm			
Grid 2 Volts = 150                      Grid 3 Resistor = 1.0 Megohm			
Cathode Bias Resistor = 68 Ohms			

### NOTES

- For Plate Current of 10 μamp.
- ▲ For Plate Current of 100 μamp.
- § Bypassed by Capacitor whose impedance is 5 ohms or less at frequency used.
- ▲ JETEC Shield No. 316 connected to cathode.
- † Cathode-Bias Resistor equals 0.