

APPLICATION GUIDE FOR RCA RECEIVING TUBES

APPLICATIONS

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| 3. Bandpass Amplifiers (Color TV) | 24. Keyed AGC Amplifiers |
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In the Application Guide on the following pages, RCA receiving tubes are classified in two ways: (a) by functional and (b) by structure (diode, triode, etc.). The functional classification covers 42 principal types of application.

Tube types are grouped by structure under each classification; they are also keyed to indicate miniature, octal, novistor, duodecar, and novar types.

Triodes are designated as *low*, *medium*, or *high- μ* types on the following basis: *low*, less than 10; *medium*, 10 or more, but less than 50; *high*, 50 or more. Where applicable, tubes are designated as *sharp*, *semiremote*, or *remote-cutoff* on the basis of the ratio, in per cent, of the negative control-grid voltage to the screen-grid voltage (or, for triodes, the plate voltage) for cut-off, as given in the characteristics or typical operation values. These terms are defined as follows: *sharp*, less than 10 per cent; *semiremote*, 10 or more, but less than 20 per cent; *remote*, 20 per cent or more.

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1. AUDIO-FREQUENCY AMPLIFIERS

Voltage Amplifiers

Medium-Mu Triode with Twin Diode

- 6BF6
- Medium-Mu Triode—Sharp-Cutoff Pentode
- 6LQ8 • 11LQ8 • 7199†

Medium-Mu Twin Triode

- 5J6 • 7AU7 • 12SN7GTA
- 6J6A • 9AU7 • 19J6
- 6SN7GTB • 12AU7A/ECC82

Twin Diode—High-Mu Triode

- 3AV6 • 6BN8 • 12AV6
- 4AV6 • 6CN7 • 14GT8
- 6AT6 • 8BN8 • 18FY6A
- 6AV6 • 12AT6

High-Mu Twin Triode

- 6EU7†
- 12AZ7A • 12SL7GT
- 6SL7GT • 12BZ7 • 20EZ7
- 12AX7A/ECC83†
- 7025†

Triple Diode—High-Mu Triode

- 5T8 • 6T8A

High-Mu Triode—Sharp-Cutoff Pentode

- 6KT8
- Sharp-Cutoff Pentode
- 3DT6A* • 6DT6A* • 5879†
- 4DT6A* • 6GX6* • 7543†
- 5HZ6*

Power Amplifiers

Beam Power Tube

- 5AQ5 • 6L6 • 17CU5/17C5
- 5CZ5 • 6L6GC†
- 5V6GT • 6V6 • 25C5
- 6AQ5A • 6V6GTA • 25F5A
- 6AS5 • 6W6GT • 34GD5A
- 6CM6 • 6Y6GA/6Y6G • 35C5
- 6CU5 • 11DS5 • 35L6GT
- 6CZ5 • 12AB5 • 50B5
- 6DG6GT • 12AQ5 • 50C5
- 6DS5 • 12CA5 • 50L6GT
- 6GC5 • 12CU5/12C5 • 6973†
- 6HG5 • 12V6GT • 7408†
- 12W6GT

Beam Power Tube—Sharp-Cutoff Pentode

- † 6AD10 † 6AL11 † 12BF11*
- † 6BF11* † 12AL11 † 17BF11*

Pentode—Beam Power Tube

- † 6Z10/6J10 † 13Z10/13J10

Power Pentode

- 6BQ5/EL84 • 6K6GT • 35EH5
- 6EH5 • 10BQ5 • 50EH5
- 6F6 • 12FX5 • 60FX5
- 6GK6 • 25EH5 • 7189†
- 7868†

2. AUTOMATIC GAIN CONTROL

CIRCUITS (AGC & AVC)

Diode—Remote-Cutoff Pentode

- 6EQ7 • 12EQ7

Twin Diode—High-Mu Triode

- 3AV6 • 6AV6 • 12AV6
- 4AV6 • 6AT6 • 12AT6
- 6AT6 • 18FY6A

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5AN8 • 6BA8A • 6GH8A
- 5GH8A • 6BH8 • 8BA8A
- 6AN8A • 6CU8 • 8BH8
- 6AZ8

High-Mu Triode—Sharp-Cutoff Pentode

- 6AW8A • 6JV8 • 8JV8
- 6HF8 • 8AW8A • 10HF8

Sharp-Cutoff Twin Pentode

- 3BU8/3GS8 • 4HS8 • 6HS8
- 6BU8

• Miniature † Duodecar • Octal • Novar • † For high-fidelity equipment § Neonval

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3. BANDPASS AMPLIFIER (COLOR TV)

- Medium-Mu Triode—Sharp-Cutoff Pentode
- 5GH8A • 6HL8 • 6MQ8
 - 6GH8A
- High-Mu Triode—Sharp-Cutoff Pentode
- 6AW8A • 6KV8 • 8AW8A
 - 6KT8 • 6LF8 • 11KV8

4. BLANKERS

- Medium-Mu Triode—Sharp-Cutoff Pentode
- 5GH8A • 6GH8A • 6MQ8

- Medium-Mu Twin Triode
- 6FQ7/6CG7 • 8FQ7/8CG7 • 12BH7A
 - 6GU7 • 8GU7

- Medium-Mu Triode—Semiremote-Cutoff Pentode
- 6LM8

- High-Mu Triode—Sharp-Cutoff Pentode
- 6KT8

5. BURST AMPLIFIERS

Beam-Deflection Tube

- 6JH8

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5EA8 • 6EA8 • 19EA8
- 5GH8A • 6GH8A

Medium-Mu Triode—Semiremote-Cutoff Pentode

- 6LM8 • 6MU8

Twin Diode—High-Mu Triode

- 6BN8 • 8BN8

Sharp-Cutoff Pentode

- 3JC6A • 4JC6A • 6EW6
- 4EW6 • 5EW6 • 6JC6A

6. CATHODE-DRIVE RF AMPLIFIERS (GROUNDED-GRID)

Medium-Mu Triode

- 6BC4

Medium-Mu Twin Triode

- 4BC8 • 5BK7A • 6BQ7A/
- 4BQ7A • 5BQ7A 6BZ7/
- 4BS8 • 6BC8/6BZ8 6BS8
- 4BZ7 • 6BK7B

High-Mu Triode

- 4CW4 • 4HQ5 • 6DS4
- 2DS4 • 6AB4 • 6HQ5
- 2HQ5 • 6CW4 • 13CW4
- 3HQ5

High-Mu Twin Triode

- 6DT8 • 12AZ7A • 12DT8
- 12AT7/ECC81

7. CHROMA AMPLIFIERS

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5GH8A • 6GH8A

Medium-Mu Triple Triode

- 6MD8 • 12MD8

Medium-Mu Twin Triode

- 6FQ7/6CG7 • 8FQ7/8CG7 • 12BH7A
- 6GU7 • 8GU7

8. COLOR KILLERS

Quadruple Diode

- 6JU8A • 8JU8A

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5GH8A • 6GH8A • 6MQ8

High-Mu Triode—Sharp-Cutoff Pentode

- 6KT8

• Miniature • Nuvistor • Novar

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9. COLOR MATRIXING CIRCUITS	Diode—Sharp-Cutoff, Three-Plate Tetrode	12. DAMPERS
<p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6FQ7/6CG7 • 8FQ7/8CG7 • 12BH7A • 6GU7 • 8GU7 <p>Medium-Mu Triode—Sharp Cutoff Pentode</p> <ul style="list-style-type: none"> • 5GH8A • 6GH8A <p>Medium-Mu Triple Triode</p> <ul style="list-style-type: none"> ▲ 6MD8 † 6MJ8 ▲ 12MD8 <p>High-Mu Triple Triode</p> <ul style="list-style-type: none"> † 6MN8 <p>Twin Pentode</p> <ul style="list-style-type: none"> • 6LE8 • 10LE8 • 15LE8 <p>Quadruple Diode</p> <ul style="list-style-type: none"> • 6JU8A • 8JU8A 	<p>Diode—Sharp-Cutoff, Three-Plate Tetrode</p> <ul style="list-style-type: none"> • 6KM8 <p>Medium-Mu Triode—Three-Plate Tetrode</p> <ul style="list-style-type: none"> • 6FH8 <p>11. CONVERTERS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 4KE8 • 5X8 • 5EA8 • 6EA8 • 5GH8A • 6GH8A • 5KE8 • 6KE8 • 5U8 • 6KZ8 <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6DT8 • 12AZ7A • 12AT7/ECC81 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3AU6 • 6AU6A • 4AU6 • 12AU6 <p>Pentagrid</p> <ul style="list-style-type: none"> • 6BA7 • 12BE6 • 6BE6 • 18FX6A 	<p>Half-Wave (Diode)</p> <ul style="list-style-type: none"> ○ 6AU4GTA ○ 6DM4A/6DA.4 ○ 6AX4GTB ▲ 6DW4B ▲ 6AY3B ○ 6W4GT ▲ 6BA3 ○ 12AX4GTB † 6BE3/6BZ3 ○ 12AY3A ▲ 6BH3A † 17BW3 ▲ 6BS3A † 12BE3 † 6CG3/6CE3/▲ 12BS3A/ 6CD3/6BW3 12DW4A ▲ 6CJ3/6CH3 ▲ 12CL3 ▲ 6CK3 ○ 12D4 ▲ 6CL3 ○ 17AX4GTA ▲ 6CM3 ○ 17AY3A ○ 6DE4/ † 17BE3/ 6CQ4 17BZ3
<p>10. COMPLEX-WAVE GENERATORS</p> <p>High-Mu Twin Double-Plate Triode</p> <ul style="list-style-type: none"> • 12FQ8 <p>Diode—Sharp-Cutoff, Twin-Plate Tetrode</p> <ul style="list-style-type: none"> • 6FA7 	<p>13. DEMODULATORS (COLOR TV)</p> <p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12BH7A <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5GH8A • 6GH8A <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12AZ7A 	<p>▲ 17BH3A</p> <ul style="list-style-type: none"> • 17BR3/17RK19 ▲ 17BS3A/17DW4A † 17BW3 ▲ 17CK3 • 17CT3 ○ 17D4 ○ 17DE4 ○ 17DM4A ▲ 22BH3A † 22BW3 ○ 22DE4 ○ 25AX4GT

9. COLOR MATRIXING CIRCUITS	Diode—Sharp-Cutoff, Three-Plate Tetrode	12. DAMPERS
<p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6FQ7/6CG7 • 8FQ7/8CG7 • 12BH7A • 6GU7 • 8GU7 <p>Medium-Mu Triode—Sharp Cutoff Pentode</p> <ul style="list-style-type: none"> • 5GH8A • 6GH8A <p>Medium-Mu Triple Triode</p> <ul style="list-style-type: none"> ▲ 6MD8 † 6MJ8 ▲ 12MD8 <p>High-Mu Triple Triode</p> <ul style="list-style-type: none"> † 6MN8 <p>Twin Pentode</p> <ul style="list-style-type: none"> • 6LE8 • 10LE8 • 15LE8 <p>Quadruple Diode</p> <ul style="list-style-type: none"> • 6JU8A • 8JU8A 	<p>Diode—Sharp-Cutoff, Three-Plate Tetrode</p> <ul style="list-style-type: none"> • 6KM8 <p>Medium-Mu Triode—Three-Plate Tetrode</p> <ul style="list-style-type: none"> • 6FH8 <p>11. CONVERTERS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 4KE8 • 5X8 • 5EA8 • 6EA8 • 5GH8A • 6GH8A • 5KE8 • 6KE8 • 5U8 • 6KZ8 <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6DT8 • 12AZ7A • 12AT7/ECC81 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3AU6 • 6AU6A • 4AU6 • 12AU6 <p>Pentagrid</p> <ul style="list-style-type: none"> • 6BA7 • 12BE6 • 6BE6 • 18FX6A 	<p>Half-Wave (Diode)</p> <ul style="list-style-type: none"> ○ 6AU4GTA ○ 6DM4A/6DA.4 ○ 6AX4GTB ▲ 6DW4B ▲ 6AY3B ○ 6W4GT ▲ 6BA3 ○ 12AX4GTB † 6BE3/6BZ3 ○ 12AY3A ▲ 6BH3A † 17BW3 ▲ 6BS3A † 12BE3 † 6CG3/6CE3/▲ 12BS3A/ 6CD3/6BW3 12DW4A ▲ 6CJ3/6CH3 ▲ 12CL3 ▲ 6CK3 ○ 12D4 ▲ 6CL3 ○ 17AX4GTA ▲ 6CM3 ○ 17AY3A ○ 6DE4/ † 17BE3/ 6CQ4 17BZ3
<p>10. COMPLEX-WAVE GENERATORS</p> <p>High-Mu Twin Double-Plate Triode</p> <ul style="list-style-type: none"> • 12FQ8 <p>Diode—Sharp-Cutoff, Twin-Plate Tetrode</p> <ul style="list-style-type: none"> • 6FA7 	<p>13. DEMODULATORS (COLOR TV)</p> <p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12BH7A <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5GH8A • 6GH8A <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12AZ7A 	<p>▲ 17BH3A</p> <ul style="list-style-type: none"> • 17BR3/17RK19 ▲ 17BS3A/17DW4A † 17BW3 ▲ 17CK3 • 17CT3 ○ 17D4 ○ 17DE4 ○ 17DM4A ▲ 22BH3A † 22BW3 ○ 22DE4 ○ 25AX4GT

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<p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5HZ6 • 6GY6 † 6BV11 <p>Pentagrid Amplifier</p> <ul style="list-style-type: none"> • 3BY6 • 6BY6 <p>Twin Pentode</p> <ul style="list-style-type: none"> • 6LE8 • 10LE8 • 15LE8 <p>Beam Deflection Tube</p> <ul style="list-style-type: none"> • 6JH8 • 6ME8 <p>Sharp-Cutoff Twin Pentode</p> <ul style="list-style-type: none"> • 6MK8 <p>14. DETECTORS</p> <p>Diode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AM8 • 6AM8A • 5AS8 • 6AS8 <p>Diode—Remote-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6CR6 • 12CR6 • 12EQ7 • 6EQ7 <p>Twin Diode</p> <ul style="list-style-type: none"> • 3AL5 • 6AL5 • 12AL5 <p>Twin Diode—High-Mu Triode</p> <ul style="list-style-type: none"> • 3AV6 • 6BN8 • 6CN7 • 6AT6 • 8BN8 • 6AV6 • 12AT6 	<p>Triple Diode</p> <ul style="list-style-type: none"> • 6BJ7 <p>Triple Diode—High-Mu Triode</p> <ul style="list-style-type: none"> • 5T8 • 6T8A <p>Quadruple Diode</p> <ul style="list-style-type: none"> • 6JU8A • 8JU8A <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3DT6A* • 5HZ6* • 4DT6A* • 6DT6A* • 5GX6* <p>15. DC RESTORERS</p> <p>Diode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AM8 • 6AM8A • 5AS8 • 6AS8 <p>Triple Diode</p> <ul style="list-style-type: none"> • 6BJ7 <p>16. DISCRIMINATORS</p> <p style="text-align: center;"><i>FM</i></p> <p>Twin Diode</p> <ul style="list-style-type: none"> • 3AL5 • 6AL5 • 12AL5 <p>Twin Diode—High-Mu Triode</p> <ul style="list-style-type: none"> • 6BN8 • 14CT8 <p>Triple Diode—High-Mu Triode</p> <ul style="list-style-type: none"> • 5T8 • 6T8A 	<p>Beam Tube</p> <ul style="list-style-type: none"> • 3BN6 • 4BN6 • 6BN6/6KS6 <p>Beam Power Tube—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> † 6AL11 † 12AL11 † 6BF11 † 12BF11 <p>Pentode—Beam Power Tube</p> <ul style="list-style-type: none"> † 6Z10/6J10 † 13Z10/13J10 † 17AB10/17X10 <p style="text-align: center;"><i>FM Quadrature-Grid</i></p> <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3DT6A* • 6DT6A* • 4DT6A* • 6GX6* • 5HZ6* <p>Beam Tube</p> <ul style="list-style-type: none"> • 3BN6 • 4BN6 • 6BN6/6KS6 <p style="text-align: center;"><i>Horizontal AFC</i></p> <p>Twin Diode—High-Mu Triode</p> <ul style="list-style-type: none"> • 6BN8 • 8BN8 • 6CN7 • 8CN7 <p>Twin Diode—Sharp Cutoff Pentode</p> <ul style="list-style-type: none"> • 6LT8 • 8LT8 • 11LT8
<p>17. FREQUENCY DIVIDERS</p> <p>High-Mu Twin Double-Plate Triode</p> <ul style="list-style-type: none"> • 12FQ8 <p>18. FM DETECTORS</p> <p style="text-align: right;">(See 16. Discriminators)</p>		
<p>• Miniature</p>	<p>⊙ Octal</p>	<p>* Dual-control grids † Duodecap</p>



19. GATED NOISE, AGC, AND SYNC AMPLIFIERS

- High-Mu Triode—Sharp-Cutoff Pentode
 - 6KA8
 - 8KA8
 - 8LC8
- Sharp-Cutoff Pentode
 - 6GY6*
- Sharp-Cutoff Twin Pentode
 - 3BU8/
 - 3GS8
 - 4HS8
 - 6BU8
- Pentagrid Amplifier
 - 3BY6
 - 4CS6
 - 3CS6
 - 6BY6
 - 6CS6

20. GROUNDED-GRID RF AMPLIFIERS

(See 6. Cathode-Drive RF Amplifiers)

21. HARMONIC GENERATORS (See 10. Complex-Wave Generators)

22. HORIZONTAL-DEFLECTION CIRCUITS

- Beam Power Tube
 - ▲ 6AU5GT
 - ▲ 6JT6A
 - ▲ 6AV5GA
 - ▲ 6JU6
 - 6BQ6GTB/
 - 6CU6
 - ▲ 6LQ6/
 - 6JE6C
 - 6CD6GA
 - 12AV5GA
 - 12BQ6GTB/
 - 12CU6
 - ▲ 6GJ5A
 - ▲ 6GT5A
 - ▲ 12JB6A
 - ▲ 12JT6A
 - 17BQ6GTB
 - ▲ 17GJ5A
 - ▲ 17GT5A
 - 17GW6/
 - ▲ 6JF6
 - ▲ 6JG6A
 - ▲ 6JM6A
 - ▲ 6JR6
 - ‡ 6JS6C
- Amplifiers
 - ▲ 17JG6A
 - ‡ 17JM6A
 - ▲ 17JT6A
 - ▲ 22JF6
 - ▲ 22JG6A
 - ▲ 22JR6
 - ▲ 22KM6
 - ▲ 24LQ6/
 - 24JE6C
 - 25AV5GA
 - 25BQ6GTB/
 - 25CU6
 - 25CD6GB
 - 25DN6
 - ‡ 31JS6C
 - ▲ 31LQ6
- Oscillators
 - Medium-Mu Triode—Sharp-Cutoff Pentode
 - 5GH8A
 - 6GH8A
 - Medium-Mu Twin Triode
 - 6FQ7/6CG7
 - 8FQ7/8CG7
 - 12BH7A
 - 6SN7GTB
 - 9AU7
 - 12SN7GTA
 - 7AU7
 - 12AU7A/ECC82

23. INTERMEDIATE-FREQUENCY AMPLIFIERS

- Medium-Mu Triode—Sharp-Cutoff Tetrode
 - 5CQ8
 - 6CQ8
- Medium-Mu Triode—Sharp-Cutoff Pentode
 - 5AN8
 - 5GH8A
 - 6AN8A
 - 6AZ8
 - 6BH8
 - 6CU8
- High-Mu Triode—Sharp-Cutoff Pentode
 - 6AW8A
 - 6GN8
 - 6HF8
 - 6JV8
 - 6KT8
 - 6W8A
 - 8AW8A
 - 8GN8/
 - 8E88
 - 8JV8
 - 10GN8
 - 10HF8
 - 10JA8/
 - 10LZ8
 - 11KV8
- Sharp-Cutoff Pentode
 - 3AU6
 - 3BC5/3CE5
 - 3CB6/3CF6
 - 3DK6
 - 3JC6A
 - 4AU6
 - 4CB6
 - 4DE6
 - 4DK6
 - 4EW6
 - 4JC6A
 - 4JD6*
 - 5EW6
 - 6AG5
 - 6AK5/
 - EF95
 - 6AU6A
 - 6C6A
 - 6HS6
 - 6JG6A
 - 6JD6*
 - 12AU6
 - 12AW6
 - 6DC6
 - 6DE6
 - 18GD6A

* Miniature ○ Octal * Dual-control grids † Duodecar ▲ Nuvisitor ▲ Novar

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<p>Diode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AM8 • 6AM8A • 6AS8 • 5AS8 <p>Semiremote-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3BZ6 • 4KT6 • 5GM6 • 3KT6 • 4BZ6 • 6BZ6 • 4EH7/LF183 • 6EH7/EF183 • 12BZ6 • 4GM6 • 6GM6 • 19HR6 • 4JH6 <p>Remote-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6BA6/EF93 • 12BA6 • 18FW6A <p>Remote-Cutoff Pentode with Diode</p> <ul style="list-style-type: none"> • 6EQ7 • 12EQ7 	<p>Power Pentode—Beam Power Tube</p> <ul style="list-style-type: none"> ‡ 6Z10/6J10 ‡ 13Z10/13J10 ‡ 17AB10/17X10 <p>26. MIXERS—RF</p> <p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 5J6 • 6J6A <p>High-Mu Triode</p> <ul style="list-style-type: none"> △ 2CW4 △ 6CW4 △ 13CW4 • 6AB4 	<p>28. MULTIVIBRATORS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5GH8A • 6GH8A <p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6FQ7/6CG7 • 8FQ7/8CG7 • 12BH7A • 6GU7 • 8GU7 ○ 12SN7-GTA • 6SN7GTB • 9AU7 • 7AU7 • 12AU7A/ECC82 <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12AX7A/ECC83
<p>24. KEYED AGC AMPLIFIERS (See 19, Gated Noise, AGC, and Sync Amplifiers)</p> <p>25. LIMITERS</p> <p>Beam Tube</p> <ul style="list-style-type: none"> • 3BN6 • 4BN6 • 6BN6/6KS6 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3AU6 • 6GX6 • 6HZ6 • 4AU6 • 6HS6 • 12AU6 • 6AU6A 	<p>27. MIXER-OSCILLATORS—RF</p> <p>Medium-Mu Triode—Sharp-Cutoff Tetrode</p> <ul style="list-style-type: none"> • 5CL8A • 6CL8A • 19JN8/19CL8A • 5CQ8 • 6CQ8 <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 4KE8 • 5U8 • 6KE8 • 5AT8 • 5X8 • 6KZ8 • 5B8 • 6AT8A • 6U8A/6U8A/ • 5BR8/6BR8A/ • 5FV8 • 6FV8A • 6X8A/6X8A/ • 5CG8 • 6CG8A • 9KZ8 • 5EA8 • 9U8A • 5FG7 • 6FG7 • 19EA8 • 5KE8 • 6HB7 • 19X8 <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6DT8 • 12AT7/ECC81 • 12DT8 	<p>29. NOISE INVERTERS (NOISE IMMUNE CIRCUITS)</p> <p>High-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6KA8 • 8KA8 • 8LC8 • 6LC8 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6GY6* <p>Quadruple Diode</p> <ul style="list-style-type: none"> • 6JU8A • 8JU8A
<p>30. OSCILLATORS</p> <p><i>Radio Frequency—UHF</i></p> <p>Medium-Mu Triode</p> <ul style="list-style-type: none"> • 2AF4B/2DZ4 • 3AF4A/3DZ4 △ 2DV4 • 6AF4A △ 6DV4 • 6DZ4 	<p>• Approaches semiremote-cutoff characteristics; used in first-if amplifier applications</p> <p>• Miniature ○ Octal * Dual-control grids † Duodecar</p>	

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Radio Frequency—VHF

Medium-Mu Twin Triode
• 5J6 • 6J6A

High-Mu Triode
• 6AB4

Power Triode
• 6C4 (Class C)

3.58-MHz (Color TV)
Medium-Mu Triode—Sharp-Cutoff Pentode
• 5GH8A • 6GH8A

High-Mu Triode—Sharp-Cutoff Pentode
• 6KT8

Low Frequency, Sweep Type

Medium-Mu Triode—Sharp-Cutoff Pentode
• 5AN8 • 6BA8A • 8AU8
• 6AN8A • 6BH8 • 8BA8A
• 6AU8A • 6CH8 • 8BH8
• 6AZ8

Twin Diode—High-Mu Triode

• 6BN8 • 8BN8 • 8CN7
• 6CN7

High-Mu Twin Triode
• 12AX7A/ECC83

31. PHASE INVERTERS

Medium-Mu Twin Triode

• 6FQ7/6CG7 • 8GU7 • 12BH7A
• 6GU7 • 8FQ7/8CG7 • 12SN7-GTA
• 6SN7GTB • 9AU7
• 7AU7 • 12AU7A/ECC82

High-Mu Triode—Sharp-Cutoff Pentode

• 6AW8A • 8AW8A • 10GN8
• 6EB8 • 8GN8/8EB8 • 10HF8
• 6GN8 • 8EB8 • 10JA8/10LZ8

High-Mu Twin Triode

• 6SL7GT • 12SL7GT • 7025
• 12AX7A/ECC83

Medium-Mu Triple Triode

† 6AV11

32. PHASE SPLITTERS

Medium-Mu Triode—Sharp-Cutoff Tetrode

• 5CQ8 • 6CQ8

Medium-Mu Triode—Sharp-Cutoff Pentode

• 5AN8 • 6BA8A • 8BA8A
• 6AN8A • 6CU8 • 7199
• 6AZ8

High-Mu Triode—Sharp-Cutoff Pentode
• 6AW8A • 8AW8A

33. RADIO-FREQUENCY AMPLIFIERS

Medium-Mu Triode

• 2BN4A • 6BC4 • 6BN4A
• 3BN4A

Medium-Mu Triode—Sharp-Cutoff Tetrode

• 5CQ8 • 6CQ8

Medium-Mu Twin Triode

• 4BC8 • 5BQ7A • 6BQ7A/
• 4BQ7A • 5J6 • 6BZ7/
• 4BS8 • 6BC8/6BZ8 • 6BS8
• 5BK7A • 6BK7B • 6J6A

High-Mu Triode

△ 2CW4 • 3ER5 • 6DS4
• 2DS4 • 3FH5 • 6ER5
• 2EG4 • 3GK5 • 6FH5
• 2ER5 • 3HMS/3HA5 • 6GK5/
• 2FH5 • 4GK5 • 6FQ5A
• 2GK5/ • 6AR4 • 6HMS/6HA5
• 2FQ5A • 6CW4 • 13CW4

* Dual-control grids † Duodecar

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<p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6DT8 • 12AZ7A • 12DT8 <p>Power Triode</p> <ul style="list-style-type: none"> • 6C4 (Class C) <p>Sharp-Cutoff Tetrode</p> <ul style="list-style-type: none"> • 2CY5 • 6CY5 • 3CY5 • 6FV6 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3AU6 • 3BC5/3CE5 • 3CB6/ • 3CF6 • 4AU6 • 4CB6 • 4DE6 • 6AG5 • 6AK5/EF95 • 6AU6A • 6BC5/6CE5 • 6BH6 • 6CB6A/6CF6 • 6DC6 • 6DE6 • 12AU6 • 12AW6 • 18GD6A <p>Remote-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6BA6/EF93 • 12BA6 • 6BJ6 • 18FW6A <p>Remote-Cutoff Pentode with Diode</p> <ul style="list-style-type: none"> • 6EQ7 • 12EQ7 	<p>High-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6AW8A • 8AW8A <p>35. RECTIFIERS</p> <p><i>Power-Supply Types—Vacuum</i></p> <p>Half-Wave (Diode)</p> <ul style="list-style-type: none"> • 35W4 • 35Z5GT • 36AM3B • 50DC4 <p>Full-Wave (Twin Diode)</p> <ul style="list-style-type: none"> • 3DG4 • 5AS4A • 5D14 • 5U4GB • 5V3A • 5AU4 • 5V4GA • 5Y3GT • 6CA4 • 6X4 • 6X5GT • 12X4 <p><i>High-Voltage Types (For rf-rectifier or pulsed low-current applications)—Vacuum</i></p> <p>Half-Wave (Diode)</p> <ul style="list-style-type: none"> • 1BC2 • 1G3GT/ • 1B3GT • 1K3/1J3 • 1V2 • 1X2B/1X2A • 2AV2 • 2BJ2 • 2CN3A • 3A3B • 3BW2/ • 3BS2A/ • 3BT2 • 3CA3 • 3CN3A • 3CU3A • 3CX3 • 3CZ3 • 3DB3/ • 3CY3 	<p>36. REGULATORS (HIGH VOLTAGE)</p> <p>Beam Triode</p> <ul style="list-style-type: none"> • 6BK4C/6EL4A • 6LJ6A/6LH6A <p>Beam Power Tube</p> <ul style="list-style-type: none"> • 17KV6A • 22KV6A <p>37. SYNC AMPLIFIERS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6AU8A • 6AZ8 • 6CX8 • 8AU8 • 8CX8 <p>Medium-Mu Twin Triode</p> <ul style="list-style-type: none"> • 6FQ7/6CG7 • 7AU7 • 8FQ7/8CG7 • 9AU7 • 12AU7A/6CC82 <p>High-Mu Triode with Twin Diode</p> <ul style="list-style-type: none"> • 6CN7 • 8CN7 <p>High-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6AW8A • 6HF8 • 6JV8 • 8JV8 • 8AW8A • 10HF8 <p>High-Mu Twin Triode</p> <ul style="list-style-type: none"> • 12BZ7 	<p>34. REACTANCE CIRCUITS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AN8 • 6AN8A • 6AZ8 • 6BA8A • 6BA8A • 8BA8A <p>Twin Diodes—High-Mu Triode</p> <ul style="list-style-type: none"> • 6CN7 • 8CN7
<p>• Miniature</p>	<p>• Octal</p>	<p>• Novar</p>	<p>• Duodecar</p>

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38. SYNC CLIPPERS

Medium-Mu Triode—Sharp-Cutoff Tetrode

- 5CQ8
- 6CQ8

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5AN8
- 6AN8A
- 6AU8A
- 6AZ8
- 6CU8
- 6CX8

High-Mu Triode—Sharp-Cutoff Pentode

- 6AW8A
- 6EB8
- 6GN8
- 6GW8/ ECL86
- 6HF8
- 6JV8
- 10GN8
- 10HF8
- 10JA8/ 10LZ8
- 8EB8

High-Mu Twin Triode

- 12BZ7

Sharp-Cutoff Twin Pentode

- 3BU8/ 3GS8
- 4HS8
- 6BU8
- 6HS8

Pentagrid Amplifier

- 3BY6
- 3CS6
- 4CS6
- 6BY6
- 6CS6

39. SYNC SEPARATORS

Medium-Mu Triode—Sharp-Cutoff Tetrode

- 5CQ8
- 6CQ8

Medium-Mu Triode—Sharp-Cutoff Pentode

- 5AN8
- 5GH8A
- 6AN8A
- 6AU8A
- 6AZ8
- 6CU8
- 6CX8
- 6GH8A
- 6HL8
- 6LQ8
- 6MQ8
- 8AU8
- 8CX8
- 11LQ8

Medium-Mu Twin Triode

- 6FQ7/6CG7
- 7AU7
- 8FQ7/8CG7
- 9AU7
- 12AU7A/ ECC82

Twin Diode—High-Mu Triode

- 6CN7
- 8CN7

High-Mu Triode—Sharp-Cutoff Pentode

- 6AW8A
- 6EB8
- 6GN8
- 6HF8
- 6JA8
- 6KA8
- 6KT8
- 6KV8
- 6LC8
- 8AW8A
- 8GN8/ 8EB8
- 8JV8
- 8KA8
- 8LC8
- 10CN8
- 10HF8
- 10JA8/ 10LZ8
- 11KV8

High-Mu Twin Triode

- 12BZ7

Sharp-Cutoff Twin Pentode

- 3RU8/ 3GS8
- 4HS8
- 6BU8
- 6HS8
- 6MK8

Pentagrid Amplifier

- 3BY6
- 3CS6
- 4CS6
- 6BY6
- 6CS6

40. TUNING INDICATORS

Indicator with Triode Unit

- 6E5

Twin Indicator Units

- 6AF6G

41. VERTICAL-DEFLECTION CIRCUITS

Oscillators and Amplifiers (Combined)

Medium-Mu Triode—Low-Mu Triode

- 6DE7
- 6EW7
- 10DE7
- 10EW7
- 13DE7

Medium-Mu Dual Triode

- 6CM7
- 6CS7
- 8CM7
- 8CS7

Medium-Mu Twin Triode

- 6FQ7/6CG7
- 8FQ7/8CG7

• Miniature ○ Octal § Neonovial

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<p>High-Mu Triode—Low-Mu Triode</p> <ul style="list-style-type: none"> • 6CY7 ◯ 6GL7 • 13DR7 • 6DR7 • 10DR7 ◯ 13EM7/ ◯ 6EM7/6EA7 ◯ 10EM7 15EA7 ▲ 6FD7 ▲ 10GF7A ▲ 13FD7 ▲ 6GF7A • 11CY7 ▲ 13GF7A <p>High-Mu Triode—Beam Power Tube</p> <ul style="list-style-type: none"> ▲ 6KY8A ▲ 15KY8A <p>Dual Triode</p> <ul style="list-style-type: none"> ◯ 6EM7/6EA7 ▲ 6GF7A ◯ 13EM7/ 15EA7 <p style="text-align: center;"><i>Amplifiers</i></p> <p>Low-Mu Triode</p> <ul style="list-style-type: none"> • 12B4A <p>Medium-Mu Triode</p> <ul style="list-style-type: none"> • 6S4A 	<p>Beam Power Tube</p> <ul style="list-style-type: none"> • 5A05 • 6EM5 • 5CZ5 • 6HR5 ◯ 5V6GT • 6JQ6# • 6A05A ◯ 6V6 • 6CM6 ◯ 6V6GTA • 6CZ5 • 8EM5 <p>Power Pentode</p> <ul style="list-style-type: none"> ◯ 6K6GT <p>42. VIDEO AMPLIFIERS</p> <p>Medium-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AN8 • 6BH8 • 5GH8A • 6CU8 • 6AN8A • 6CX8 • 6AU8A • 6GH8A • 6AZ8 • 6HL8 • 6BA8A • 6LQ8 	<p>High-Mu Triode—Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 6AW8A • 6KV8 • 8JV8 • 6EB8 • 6LF8 • 10GN8 • 6GN8 • 8AW8A • 10HF8 • 6HF8 • 8GN8 / • 10JA8 • 6JV8 8EB8 • 11KV8 • 6KT8 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 3JC6A • 7KY6 • 12BY7A / • 4JC6A • 11HM7 12BV7/ • 6JC6A § 12MG7 12DQ7 <p>Sharp-Cutoff Pentode</p> <ul style="list-style-type: none"> • 5AM8 • 6AM8A • 12HL7 • 5AS8 • 6AS8 <p>Power Pentode</p> <ul style="list-style-type: none"> ◯ 6AG7 • 6CL6 • 6GK6 	<p>12AQ5</p> <ul style="list-style-type: none"> • 12JQ6# ◯ 12V6GT • 17JQ6#
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• Miniature ◯ Octal ▲ Novar § Neosoval # With an integral diode