

### MECHANICAL DATA

Bulb . . . . .	ST-12
Base . . . . .	B6-3, Small Shell Octal, 6-Pin
Outline . . . . .	12-7
Basing . . . . .	.4AJ
Cathode . . . . .	Cold
Mounting Position . . . . .	. Any

### ELECTRICAL DATA

#### RATINGS (Absolute Values)

Average Starting Current . . . . .	100 Ma	Max.
Average Time . . . . .	10 Sec.	Max.
Cathode Current		
Maximum: OC3, OD3 . . . . .	40 Ma	
OB3 . . . . .	30 Ma	
Minimum . . . . .	5 Ma	
Ambient Temperature Limits . . . . .	-55 to +90° C	Max.
Frequency . . . . .	0 cps.	Max.

### CHARACTERISTICS AND TYPICAL OPERATION

	OB3	OC3	OD3
Minimum Plate Supply Voltage, DC <sup>1</sup> . . . . .	130	133	185 Volts
Operating Voltage, approx. . . . .	90	108	153 Volts
Starting Voltage, approx. . . . .	105	115	160 Volts
Regulation . . . . .	5	2	4 Volts
Shunt Capacitor, Maximum . . . . .	0.1	0.1	0.1 $\mu$ f

#### NOTE:

1. To assure starting throughout tube life, not less than the specified supply voltage should be provided.
2. OC3 and OD3, 5 to 40 Ma; OB3, 5 to 30 Ma.

### APPLICATION DATA

The Sylvania OB3, OC3 and OD3 are gas-filled, cold cathode voltage regulators characterized by a practically constant internal voltage drop across which a load requiring voltage regulation may be connected.

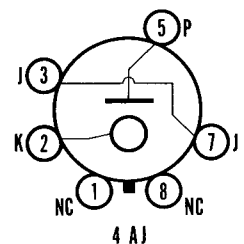
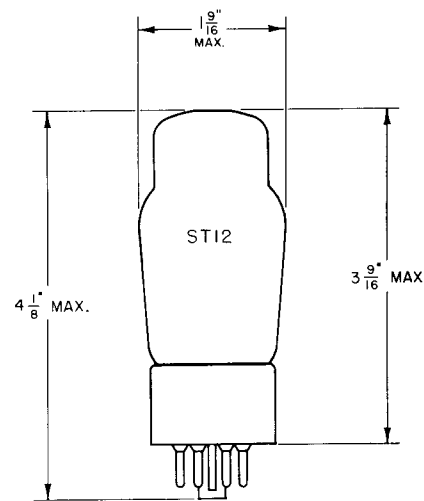
All three tubes are contained in ST-12 bulbs and employ octal bases. A jumper between Pins 3 and 7 provides the designer with several possible connections to ensure protection of associate components in case the regulator is removed from its socket.

A basic circuit employing either the OB3, OC3 or OD3 is shown in Figure 1. The OB3, OC3 and OD3 are designed to provide regulated outputs of 90, 105 and 150 volts respectively.

Sufficient resistance must always be used in series with these tubes to limit the current. The value of series resistance is dependent on the maximum plate supply voltage and the ratio of current through the load to the operating current of the regulator. (The value chosen should not permit an excess of 40 Ma to flow through the tube after the starting period, 30 Ma for Type OB3.)

### QUICK REFERENCE DATA

The Sylvania OB3, OC3 and OD3 are two element gas filled, cold cathode voltage regulators. They are designed to provide regulated outputs of approximately 90, 105 and 150 Volts respectively.



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APPLICATION DATA CONT'D

The maximum load current that can be regulated is determined by the maximum and minimum values of supply voltage. The value of the series resistor for maximum supply voltage should be calculated as indicated above. The designer should then determine if this value of resistance will permit starting when the supply voltage falls to its minimum. If not, the calculations must be repeated using a lower load current. The higher the minimum supply voltage and the smaller the difference between minimum and maximum, the larger the current that can be regulated.

To handle more current, two or more regulators of the same type may be connected in parallel. A resistor of approximately 100 ohms should be placed in series with each regulator to equalize division of the current.

If regulation of higher voltages is necessary, two or more regulators may be connected in series, Figure 2. Voltage taps may also be taken from the junction points of the regulators. These tubes need not be the same type, the only requirement being that the current be limited so that it falls within the operating range of the combination. For example, if an OB3 and OC3 are connected in series, the current must not exceed 30 Ma.

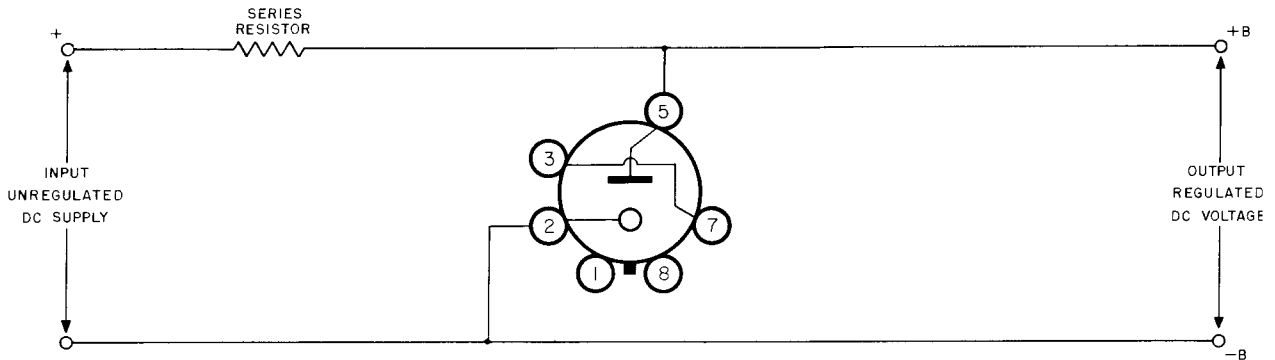


FIG. 1 — BASIC REGULATOR CIRCUIT

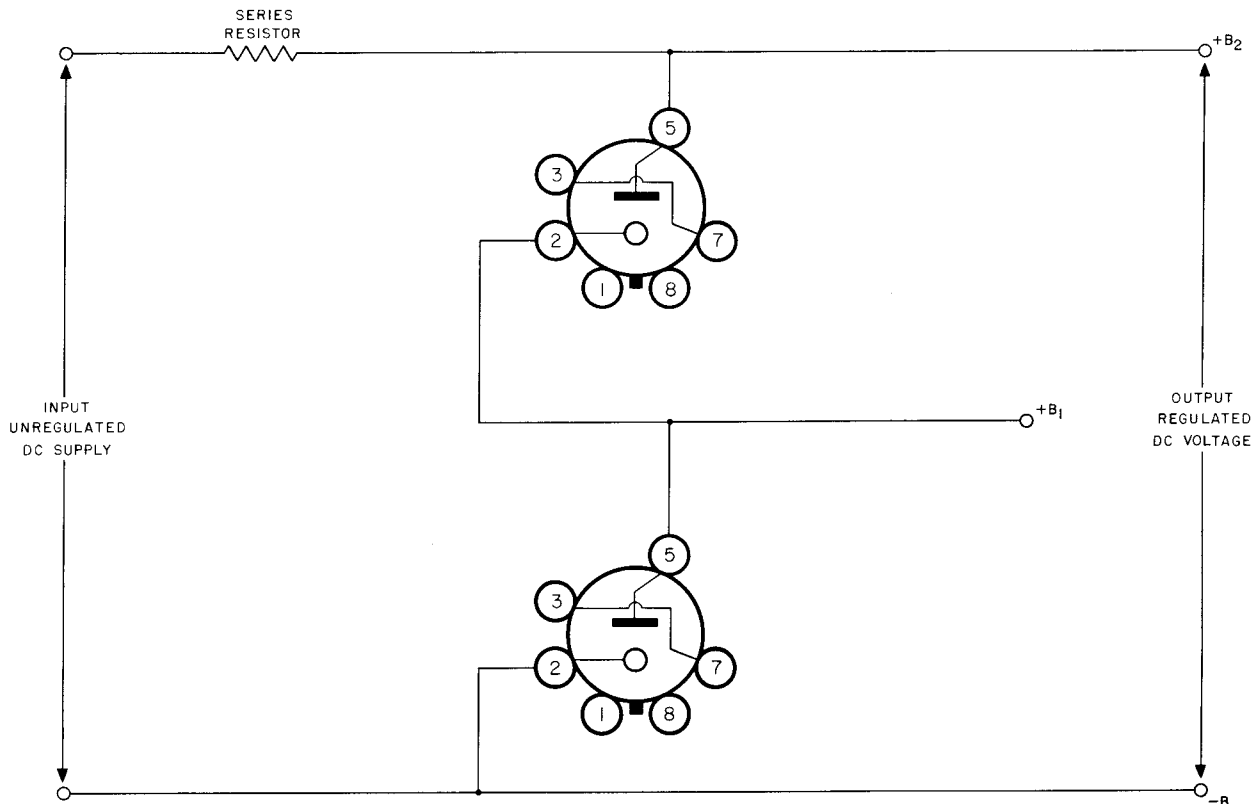


FIG. 2 — SERIES CIRCUIT FOR REGULATION OF HIGH VOLTAGES