

## RECTIFIERS — DIODES

| TYPE NO. | FILAMENT |      | Fil.<br>Heating<br>Time<br>(sec) | Tube<br>Drop<br>(Volts) | Peak Inverse<br>Anode Volts<br>(Volts) | ANODE CURRENT  |                 | Surge<br>Current<br>Amps | TEMPER-<br>ATURE<br>Ambient |
|----------|----------|------|----------------------------------|-------------------------|----------------------------------------|----------------|-----------------|--------------------------|-----------------------------|
|          | Volts    | Amps |                                  |                         |                                        | Peak<br>Amps   | Average<br>Amps |                          |                             |
| 3B-28    | 2.5      | 5.0  | 5                                | 10.0                    | 10,000                                 | 1.0            | 0.250           | —                        | —                           |
| 4B-32    | 5.0      | 7.5  | 30                               | 10.0                    | 10,000                                 | 5.0            | 1.25            | 50.0                     | —                           |
| 249-B    | 2.5      | 7.5  | 15                               | 15.0                    | 7,500                                  | 2.5            | 0.640           | —                        | —                           |
| 575-A    | 5.0      | 10.0 | 30                               | 10.0                    | 15,000                                 | 6.0            | 1.5             | 60.0                     | —                           |
| 673      | 5.0      | 10.0 | 30                               | 10.0                    | 15,000                                 | 6.0            | 1.5             | 60.0                     | —                           |
| 857-B    | 5.0      | 30.0 | 60                               | 10.0                    | 22,000                                 | 40.0           | 10.0            | 400.0                    | —                           |
| 866-AX   | 2.5      | 5.0  | 20                               | 10.0                    | 10,000                                 | 1.0            | 0.250           | —                        | —                           |
| 869-B    | 5.0      | 18.0 | 60                               | 10.0                    | 20,000                                 | 10.0           | 2.50            | —                        | —                           |
| 869-BL   | 5.0      | 18.0 | 60                               | 10.0                    | 20,000                                 | 10.0           | 2.50            | —                        | —                           |
| 872-AX   | 5.0      | 7.5  | 30                               | 10.0                    | 10,000                                 | 5.0            | 1.25            | 50.0                     | —                           |
| 6339     | 6.3      | 1.5  | 30                               | —                       | WITH LIQUID COOLING                    |                |                 |                          |                             |
|          |          |      |                                  |                         | 16,000<br>10,000                       | 0.250<br>0.400 | 0.065<br>0.100  | —                        | —65 to +165°                |
|          |          |      |                                  |                         | WITHOUT COOLING — AIR OPERATION        |                |                 |                          |                             |
| 6508     | 5.0      | 12.5 | 90                               | 12.0                    | 21,000                                 | 10.0           | 2.5             | 100.0                    | —                           |
| 6693     | 5.0      | 11.5 | 60                               | 12.0                    | 2,500                                  | 10.0           | 5.0             | 200.0                    | +15 to +55°                 |
|          |          |      |                                  |                         | 15,000                                 | 12.0           | 3.0             | 120.0                    | +15 to +35°                 |
| 7136     | 5.0      | 11.5 | 60                               | 12.0                    | 15,000                                 | 12.0           | 2.5             | 120.0                    | +15 to +35°                 |
| 8008-AX  | 5.0      | 7.5  | 30                               | 10.0                    | 10,000                                 | 5.0            | 1.25            | 50.0                     | —                           |
| 8020-AX  | 5.0      | 6.0  | 5                                | 200V<br>at 100ma        | 40,000                                 | 0.750          | 0.100           | —                        | —                           |

## MICROWAVE TRIODES

| TYPE NO.  | FILAMENT |      | Plate<br>Dissipation<br>(Watts) | $\mu$ | Trans-<br>conductance<br>(micromhos) | PLATE |       | POWER OUTPUT CHARACTERISTICS |              |                   |                   |
|-----------|----------|------|---------------------------------|-------|--------------------------------------|-------|-------|------------------------------|--------------|-------------------|-------------------|
|           | Volts    | Amps |                                 |       |                                      | Volts | Amps  | Power<br>(Watts)             | Gain<br>(DB) | Bandwidth<br>(mc) | Frequency<br>(mc) |
| 5861/EC55 | 6.3      | 0.4  | 10                              | 30    | 6,000                                | 250   | 0.020 | 2.8                          | OSC          | OSC               | 1,000             |
|           |          |      |                                 |       |                                      |       |       | 0.5                          | OSC          | OSC               | 3,000             |
| 8108      | 6.3      | 0.73 | 10                              | 43    | 21,000                               | 180   | 0.060 | 1.8                          | 8            | 50-0.1 db         | 4,000             |
|           |          |      |                                 |       |                                      |       |       | 0.5                          | 13           | 50-0.1 db         | 4,000             |
|           |          |      |                                 |       |                                      |       |       | 0.5                          | 19           | 25-3.0 db         | 3,000             |
|           |          |      |                                 |       |                                      |       |       | 0.25                         | 0            | Doubler           | 6,000             |
| EC158     | 6.3      | 0.85 | 30                              | 30    | 25,000                               | 180   | 0.140 | 5                            | 8            | 50-0.1 db         | 4,000             |
|           |          |      |                                 |       |                                      |       |       | 2                            | 12           | 50-0.1 db         | 4,000             |

## PHOTOMULTIPLIER TUBES

| TYPE NO. | Min. Useful<br>Photocathode<br>Diameter<br>(mm) | Number<br>of<br>Stages | Base     | Maximum<br>Spectral<br>Response<br>(Angstroms) | Reso-<br>lution<br>C <sub>e</sub><br>137 | Minimum<br>Photocathode<br>Sensitivity<br>( $\mu$ A/lm) | Average<br>Photocathode<br>Sensitivity<br>( $\mu$ A/lm) | Minimum<br>Anode<br>Sensitivity<br>(A/lm) | For a<br>Supply<br>Voltage of<br>(V) | Minimum<br>Gain at<br>2000 V |
|----------|-------------------------------------------------|------------------------|----------|------------------------------------------------|------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|--------------------------------------|------------------------------|
| 150 AVP* | 32                                              | 10                     | duodecal | 4200                                           |                                          | 25                                                      | 50                                                      | 60                                        | 1800                                 | —                            |

\*See XP1010

|  | RANGE<br>(°C)              | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                   | TYPE NO. |
|--|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|  | Mercury                    |                                                                                                                                                                                                                                                                                                                                                                                                                               |          |
|  | —                          | Xenon gas filled half-wave rectifier with wider temperature ranges than mercury-vapor tubes. Used largely by armed services to replace 866-A's.                                                                                                                                                                                                                                                                               | 3B-28    |
|  | —                          | Xenon gas filled half-wave rectifier with wider temperature ranges than mercury-vapor tubes. Used largely by armed services to replace 872-A's.                                                                                                                                                                                                                                                                               | 4B-32    |
|  | +25 to +70°                | Convection-cooled mercury-vapor half-wave rectifier. Used in most Western Electric r-f equipment.                                                                                                                                                                                                                                                                                                                             | 249-B    |
|  | +20 to +50°                | Convection-cooled mercury-vapor half-wave rectifier. Refer to 7136 for improved version.                                                                                                                                                                                                                                                                                                                                      | 575-A    |
|  | +20 to +50°                | Convection-cooled mercury-vapor half-wave rectifier. Refer to 6693 for improved version.                                                                                                                                                                                                                                                                                                                                      | 673      |
|  | +30 to +40°                | Mercury-vapor half-wave rectifier with low voltage drop. Extremely popular in most high power broadcasting stations. Convection cooled.                                                                                                                                                                                                                                                                                       | 857-B    |
|  | +25 to +70°                | Mercury-vapor half-wave rectifier of Amperex own design. More rugged trouble-free operation at only slight additional cost. Convection cooled.                                                                                                                                                                                                                                                                                | 866-AX   |
|  | +30 to +40°                | Mercury-vapor half-wave rectifier. Refer to type 6508, economy version.                                                                                                                                                                                                                                                                                                                                                       | 869-B    |
|  | +30 to +40°                | Electrically same as 869-B. Base has flexible filament leads with spade lugs for better, low-resistance contact with socket.                                                                                                                                                                                                                                                                                                  | 869-BL   |
|  | +20 to +60°                | Mercury-vapor half-wave rectifier. Universally used by almost every user and designer of H-V equipment. Convection cooled.                                                                                                                                                                                                                                                                                                    | 872-AX   |
|  | —                          | High vacuum clipper diode and rectifier. Miniature version of 3B29 for liquid immersion cooling or air operation.                                                                                                                                                                                                                                                                                                             | 6339     |
|  | —                          |                                                                                                                                                                                                                                                                                                                                                                                                                               |          |
|  | +25 to +45°                | Mercury vapor rectifier for relatively high voltage and current. A high quality, long-life tube priced lower than any tube in its class on the market.                                                                                                                                                                                                                                                                        | 6508     |
|  | +25 to +75°<br>+25 to +55° | Single-anode, mercury vapor rectifier with ratings, intermediate between standard types 575A and 869B. Delivers 9 amps up to 12 KV in a full wave, 3 phase power supply. Three tubes in a three phase half-wave power supply deliver 6 KV at 9 amps using only one filament transformer. Has large contact area, industrial base preventing base contact oxidation. Priced low for replacement market and original equipment. | 6693     |
|  | +25 to +55°                | Single anode, mercury vapor, high voltage rectifier. Plate current ratings intermediate between types 575-A and 6693. Cathode and anode design similar to 6693 but with 575-A base. Recommended replacement for 575-A in older equipment. For new equipment design, the 6693 is recommended.                                                                                                                                  | 7136     |
|  | +20 to +60°                | Mercury-vapor half-wave rectifier similar to 872-A characteristics; with heavy long pin industrial base. Used by armed services and in commercial applications. Convection cooled.                                                                                                                                                                                                                                            | 8008-AX  |
|  | —                          | Half-wave, high vacuum rectifier with high inverse voltage and low average current. Used in radar and precipitator power supplies.                                                                                                                                                                                                                                                                                            | 8020-AX  |

| CAPACITANCES (pf) |       |        |  | Maximum<br>Frequency<br>(mc) | DESCRIPTION                                                                             | TYPE NO.  |
|-------------------|-------|--------|--|------------------------------|-----------------------------------------------------------------------------------------|-----------|
| G-P               | Input | Output |  |                              |                                                                                         |           |
| 1.3               | 1.8   | 0.03   |  | 3,000                        | Disc-seal triode, for amplifier and oscillator applications.                            | 5861/EC55 |
| 1.4               | 3.0   | 0.035  |  | > 6,000                      | Disc-seal triode, for amplifier, oscillator doubler or tripler applications. Long life. | 8108      |
| 1.75              | 4.0   | 0.055  |  | > 6,000                      | Disc-seal triode, for amplifier, oscillator doubler or tripler applications. Long life. | EC158     |

| Average<br>Anode<br>Sensitivity<br>(A/lm) | For a<br>Supply<br>Voltage of<br>(V) | Maximum<br>Direct<br>Dark Current<br>(nA) | For an Anode<br>Sensitivity<br>of<br>(A/lm) | Or a<br>Gain<br>of | Maximum<br>Anode<br>Dissipation<br>(W) | Ratio Luminous Flux/Anode<br>Current Linear up to            |                                                              | TYPE NO. |
|-------------------------------------------|--------------------------------------|-------------------------------------------|---------------------------------------------|--------------------|----------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------|
|                                           |                                      |                                           |                                             |                    |                                        | (voltage distri-<br>bution A, see<br>instr. for use)<br>(ma) | (voltage distri-<br>bution B, see<br>instr. for use)<br>(ma) |          |
| 300                                       | 1800                                 | 50                                        | 60                                          | —                  | 0.5                                    | 30                                                           | 100                                                          | 150 AVP  |