5U4-GB

TWIN DIODE
FOR FULL-WAVE POWER RECTIFIER APPLICATIONS

DESCRIPTION AND RATING

The 5U4-GB is a filamentary twin diode designed for use as a full-wave rectifier in the power supply of television receivers or other equipment which have high direct-current requirements. The 5U4-GB employs a straight-sided T-12 envelope and may be used as a replacement for either the 5U4-G or 5U4-GA.

GENERAL

ELECTRICAL
Cathode—Coated Filament
Filament Voltage, AC or DC ........................................... 5.0 Volts
Filament Current ...................................................... 3.0 Amperes

MECHANICAL
Mounting Position—Vertical*
Envelope—T-12, Glass
Base—B5-121 or B5-113, Short Medium Shell Octal 5-Pin
    or B5-127, Flared Medium Shell Octal 5-Pin
    or B8-118, Short Medium Shell Octal 8-Pin

MAXIMUM RATINGS
RECTIFIER SERVICE—DESIGN-CENTER VALUES†
Peak Inverse Plate Voltage ........................................ 1550 Volts
AC Plate-Supply Voltage per Plate—See Rating Chart ‡
Steady-State Peak Plate Current per Plate .................... 1000 Milliamperes
    Transient Peak Plate Current per Plate,
    Maximum Duration 0.2 Second .............................. 4.6 Amperes
DC Output Current—See Rating Chart ‡

CHARACTERISTICS AND TYPICAL OPERATION
FULL-WAVE RECTIFIER WITH CAPACITOR-INPUT FILTER
AC Plate-Supply Voltage per Plate, RMS ..................... 300 450 Volts
Filter Input Capacitor ............................................. 40 40 Microfarads
Total Plate-Supply Resistance per Plate .................... 21 67 Ohms
DC Output Current ............................................... 300 275 Milliamperes
DC Output Voltage at Filter Input .......................... 290 460 Volts

FULL-WAVE RECTIFIER WITH CHOKE-INPUT FILTER
AC Plate-Supply Voltage per Plate, RMS ..................... 550 Volts
Filter Input Choke .................................................. 10 Henrys
DC Output Current ............................................... 275 Milliamperes
DC Output Voltage at Filter Input ......................... 440 Volts
Tube Voltage Drop
    Ib = 275 Milliamperes DC per Plate ...................... 50 Volts

GENERAL ELECTRIC
5Y3-GT
TWIN DIODE
FOR FULL-WAVE POWER RECTIFIER APPLICATIONS

DESCRIPTION AND RATING

The 5Y3-GT is a filamentary twin-diode designed for full-wave rectifier operation in power supplies that have d-c output current requirements up to approximately 125 milliamperes.

GENERAL

ELECTRICAL
Cathode—Coated Filament
Filament Voltage, AC or DC ........................................ 5.0 Volts
Filament Current ....................................................... 2.0 Amperes

MECHANICAL
Mounting Position—Vertical*
Envelope—T-9, Glass
Base—B5-10, Intermediate Shell Octal 5-Pin
      or B5-62, Short Intermediate Shell Octal 5-Pin

MAXIMUM RATINGS

RECTIFIER SERVICE—DESIGN-CENTER VALUES†
Peak Inverse Plate Voltage ....................................... 1400 Volts
AC Plate-Supply Voltage per Plate—See Rating Chart 1‡
Steady-State Peak Plate Current per Plate .................... 440 Milliamperes
Transient Peak Plate Current per Plate, Maximum Duration 0.2 Second ......................................................... 2.5 Amperes
DC Output Current—See Rating Chart 1‡

BASING DIAGRAM

TERMINAL CONNECTIONS
Pin 1—No Connection
Pin 2—Filament
Pin 4—Plate Number 2
Pin 6—Plate Number 1
Pin 8—Filament

PHYSICAL DIMENSIONS

GENERAL ELECTRIC
Supersedes ET-T2508, dated 6-50
MECHANICAL DATA

Bulb .................................. T-5½
Base .................................. E7-1, Miniature Button 7-Pin
Outline ................................. 5-3
Basing .................................. 5BS
Cathode ................................. Coated Unipotential
Mounting Position ..................... Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

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<tr>
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<th>6X4</th>
<th>12X4</th>
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<tbody>
<tr>
<td>Heater Voltage 1</td>
<td>6.3</td>
<td>12.6 Volts</td>
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<tr>
<td>Heater Current</td>
<td>600</td>
<td>300 Ma</td>
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<tr>
<td>Heater-Cathode Voltage (Design Center Values)</td>
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<tr>
<td>Total DC and Peak</td>
<td>450</td>
<td>450 Volts Max.</td>
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<tr>
<td>Heater Positive with Respect to Cathode</td>
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<tr>
<td>Total DC and Peak</td>
<td>100</td>
<td>100 Volts Max.</td>
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</table>

RATINGS (Design Center Values)

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<tr>
<th></th>
<th>6X4</th>
<th>12X4</th>
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<tbody>
<tr>
<td>Peak Inverse Plate Voltage</td>
<td>1250 Volts Max.</td>
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<tr>
<td>A C Plate Supply Voltage, R M S</td>
<td>See Rating Chart I</td>
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<tr>
<td>Steady State Peak Plate Current, Rating Chart II</td>
<td>(Each Plate)</td>
<td>210 Ma Max.</td>
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<tr>
<td>(Each Plate)</td>
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<tr>
<td>Transient Peak Plate Current, Rating Chart III</td>
<td>(Each Plate)</td>
<td>1.0 Ampere Max.</td>
</tr>
<tr>
<td>D C Output Current (Each Plate)</td>
<td>See Rating Chart I</td>
<td></td>
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</table>

CHARACTERISTICS

Tube Voltage Drop, \( I_b \) = 70 Ma Each Plate ........ 22 Volts

TYPICAL OPERATION

Full-Wave Rectifier-Capacitor Input
| A C Plate Supply Voltage Per Plate | 325 Volts    |
| Filter Input Capacitor             | 10 \( \mu \)f |
| Total Effective Plate Supply Impedance (Per Plate) | 525 Ohms |
| D C Output Current                 | 70 Ma        |
| D C Output Voltage at Filter Input (approx.) | | |
| For D C Cathode Current of 35 Ma   | 365 Volts    |
| 70 Ma                            | 310 Volts    |
| Difference (Voltage Regulation)    | 55 Volts     |
| Percentage Regulation             | 15 Percent   |

Full-Wave Rectifier Service — Choke Input
| A C Plate Supply Voltage Per Plate (R M S) | 450 Volts |
| Filter Input Choke                     | 10 Henrys |
| D C Output Current                     | 70 Ma     |
| D C Output Voltage at Filter Input (approx.) | | |
| For D C Cathode Current of 35 Ma       | 395 Volts |
| 70 Ma                                | 385 Volts |
| Difference (Voltage Regulation)        | 10 Volts  |
| Percentage Regulation                 | 2.5 Percent |

QUICK REFERENCE DATA

The Sylvania Types 6X4 and 12X4 are miniature, full-wave, cathode type rectifiers. They are intended for service in compact a c or auto receivers where the average current is not in excess of 70 Ma. Except for heater current and voltage the 6X4 is identical to the 12X4.