TWIN DIODES
MINIATURE TYPE

TWIN DIODES
FOR
FULL-WAVE POWER-RECTIFIER
SERVICE IN MOBILE
AND AIRCRAFT APPLICATIONS

COATED UNIPOTENTIAL CATHODE
ANY MOUNTING POSITION

THE 6202 IS A FULL-WAVE HIGH-VACUUM RECTIFIER IN THE 7 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR USE IN POWER SUPPLIES IN WHICH THE DC CURRENT REQUIREMENTS DO NOT EXCEED 50 MILLIAMPERES.

THE 6202 IS A DIRECT REPLACEMENT FOR THE 6X4.

HEATER CHARACTERISTICS AND RATINGS
DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS
6.3 VOLTS

LIMITS OF APPLIED VOLTAGE
6.3±0.6 VOLTS

MAXIMUM HEATER-CATHODE VOLTAGE:
HEATER NEGATIVE WITH RESPECT TO CATHODE
HEATER POSITIVE WITH RESPECT TO CATHODE

450 VOLTS
100 VOLTS

MAXIMUM RATINGS
DESIGN CENTER VALUES - SEE EIA STANDARD RS-239

RECTIFIER SERVICE

SINUSOIDAL SUPPLY VOLTAGES, FREQUENCY 25 TO 1000 CYCLES PER SECOND

PEAK INVERSE VOLTAGE
ALTITUDES UP TO 40,000 FEET
ALTITUDES FROM 40,000 TO 60,000 FEET

1250 VOLTS
850 VOLTS

AC PLATE SUPPLY VOLTAGE, PER PLATE RMS

See Chart 1

STEADY-STATE PEAK PLATE CURRENT PER PLATE

200 MA.

TRANSIENT PEAK PLATE CURRENT PER PLATE
MAX. DURATION 0.2 SECOND

1.45 AMP.

DC OUTPUT CURRENT

See Rating Chart 1

PEAK IMPACT ACCELERATION

700 G

BULB TEMPERATURE AT HOTTEST POINT (ABS. MAX.)

+165 °C

*THE ALTITUDE RATINGS AS PRESENTED REFER TO THE LIMITATIONS OF THE TUBE ITSELF. BECAUSE THE SOCKET EMPLOYED CAN BECOME THE LIMITING FACTOR IN HIGH-ALTITUDE OPERATION, CONSIDERATION MUST BE GIVEN TO THE VOLTAGE-BREAKDOWN CAPABILITIES OF THE TUBE AND SOCKET COMBINATION EMPLOYED.*
TYPICAL OPERATING CHARACTERISTICS
FULL-WAVE RECTIFIER
ALTITUDES UP TO 40,000 FEET

AC PLATE-SUPPLY VOLTAGE PER PLATE, RMS 325 450 VOLTS
FILTER INPUT CAPACITOR 4 ---- µF
FILTER INPUT CHOKE ---- 8 HENRYS
TOTAL PLATE-SUPPLY RESISTANCE PER PLATE 175 ---- OHMS
DC OUTPUT CURRENT 50 50 MA.
DC OUTPUT VOLTAGE AT FILTER INPUT 365 375 VOLTS
TUBE VOLTAGE DROP MEASURED WITH APPLIED DC AT 50 MA. PER PLATE 22 VOLTS

SPECIAL TESTS AND RATINGS

HEATER CYCLING RATING
SHOCK RATING
VIBRATION RATING
ALTITUDE RATING TO 60,000 FEET

RATING CHART 1

ALTITUDE LIMITATION:
OPERATION TO THE RIGHT OF LINE JK IS PERMISSIBLE ONLY WHEN THE ALTITUDE DOES NOT EXCEED 40,000 FEET. TO THE LEFT OF LINE JK, OPERATION MAY BE EXTENDED TO 60,000 FEET.
RATING CHART 2

FOR CAPACITOR INPUT FILTER
(BASED ON MAXIMUM STEADY-STATE PEAK PLATE CURRENT OF 200 MILLIAMPERES PER PLATE)

RECTIFICATION EFFICIENCY = \frac{E}{1.41 E_s}

WHERE E = DC OUTPUT VOLTAGE AT FILTER INPUT IN VOLTS
E_s = RMS SUPPLY VOLTAGE PER PLATE IN VOLTS

AREA OF PERMISSIBLE OPERATION

DC OUTPUT CURRENT PER PLATE - MILLIAMPERES

RECTIFICATION EFFICIENCY

RATING CHART 3

FOR CAPACITOR INPUT FILTER
(BASED ON MAXIMUM TRANSIENT PEAK PLATE CURRENT OF 1.45 AMPERES PER PLATE)

R_s = R_{sec} + N^2 R_{prim} + R_A

WHERE R_s = PLATE SUPPLY RESISTANCE PER PLATE
R_{sec} = DC RESISTANCE OF TRANSFORMER SECONDARY PER SECTION
R_{prim} = DC RESISTANCE OF TRANSFORMER PRIMARY
R_A = DC RESISTANCE OF ADDED SERIES RESISTANCE PER PLATE
N = TRANSFORMER VOLTAGE STEP-UP RATIO PER SECTION

ALTITUDE LIMITATION:
OPERATION TO THE RIGHT OF LINE JK IS PERMISSIBLE ONLY WHEN THE ALTITUDE DOES NOT EXCEED 40,000 FEET. TO THE LEFT OF LINE JK, OPERATION MAY BE EXTENDED TO 60,000 FEET.

IF SERIES INDUCTANCE IS PRESENT IN THE PLATE SUPPLY, IT IS PERMISSIBLE TO USE A SMALLER-TAN-INDICATED VALUE OF PLATE SUPPLY RESISTANCE PROVIDING THE RATED MAXIMUM VALUE OF TRANSIENT PEAK PLATE CURRENT IS NEVER EXCEEDED.

MINIMUM PLATE SUPPLY RESISTANCE PER PLATE (R_s) - OHMS

AC PLATE SUPPLY VOLTAGE PER PLATE (RMS) IN VOLTS