THE \textit{26Z5W} IS A RUGGEDIZED HEATER-CATHODE TYPE DOUBLE DIODE USING THE 9 PIN MINIATURE CONSTRUCTION. IT IS SUITABLE FOR USE IN HALF OR FULL WAVE RECTIFIER APPLICATIONS OR AS A VOLTAGE DOUBLER. THE HEATER DESIGN MAKES THIS TYPE IDEAL FOR OPERATION IN AIRBORNE EQUIPMENT WHERE A 26 VOLT POWER SUPPLY IS NORMALLY AVAILABLE. ALSO THE RUGGEDIZED STRUCTURE IS CAPABLE OF WITHSTANDING SEVERE SHOCK AND VIBRATION SUCH AS THAT ENCOUNTERED IN AIRCRAFT.

**RATINGS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>26.5 ± 15%</td>
</tr>
<tr>
<td>Maximum Peak Inverse Plate Voltage</td>
<td>1375 Volts</td>
</tr>
<tr>
<td>Maximum DC Plate Current (Each Plate)</td>
<td>300 mA</td>
</tr>
<tr>
<td>Maximum DC Output Current (Per Plate)</td>
<td>55 mA</td>
</tr>
<tr>
<td>Maximum Surge Current</td>
<td>1 AMP</td>
</tr>
<tr>
<td>Maximum Heater–Cathode Voltage</td>
<td>450 Volts</td>
</tr>
<tr>
<td>Maximum Altitude</td>
<td>10,000 Feet</td>
</tr>
<tr>
<td>Maximum Shock</td>
<td>700 G</td>
</tr>
</tbody>
</table>

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Voltage</td>
<td>26.5 Volts</td>
</tr>
<tr>
<td>Heater Current</td>
<td>0.20 AMP</td>
</tr>
<tr>
<td>AC Plate Supply Voltage (Each Plate)</td>
<td>325 Volts</td>
</tr>
<tr>
<td>Input Condenser</td>
<td>10 μF</td>
</tr>
<tr>
<td>Output Choke</td>
<td>10 HENRY</td>
</tr>
<tr>
<td>Total Effective Plate Supply Impedance (Each Plate)</td>
<td>300 OHMS</td>
</tr>
<tr>
<td>DC Output Current</td>
<td>100 mA</td>
</tr>
<tr>
<td>DC Output Voltage at Input to Filter</td>
<td>325 Volts</td>
</tr>
</tbody>
</table>

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CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

$E_f = 26.5\, V$, $E_{pp/d} = 400\, V_{dc}$, $RL = 3650\, \Omega_{dc}$, $C_L = 8\, m\mu F$

EXCEPT AS MODIFIED BELOW

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Initial Min.</th>
<th>Initial Max.</th>
<th>Individual Min.</th>
<th>Individual Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater Current Operation A/B</td>
<td>180</td>
<td>220</td>
<td>mA</td>
<td>dc</td>
</tr>
<tr>
<td>Heater Cathode Leakage ($E_{KH} = 60%$)</td>
<td>100</td>
<td>---</td>
<td>mA</td>
<td>dc</td>
</tr>
<tr>
<td>Grid Emission (1) ($E_{2b} = 0%$, $E_{1b} = 40, V_{dc}$)</td>
<td>0</td>
<td>$\pm 150$</td>
<td>$\mu A$</td>
<td>dc</td>
</tr>
<tr>
<td>Grid Emission (2) ($E_{1b} = 0%$, $E_{2b} = 40, V_{dc}$)</td>
<td>160</td>
<td>---</td>
<td>mA</td>
<td>dc</td>
</tr>
<tr>
<td>Special Requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VARIABLE FREQUENCY VIBRATION$^C$
(NO VOLTAGES)
---
---

LOW FREQUENCY VIBRATION$^D$
(NO VOLTAGES)
---
---

SHOCK$^E$
(HAMMER ANGLE $= 45^\circ$)
---
---

VIBRATIONAL FATIGUE$^D$
---
---

POST SHOCK AND VIBRATIONAL FATIGUE TEST END POINTS
HEATER-CATHODE LEAKAGE
---
250 | $V_{dc}$
OPERATION
94 | --- | $mA$| dc
LIFE TEST$^H$
1500 | --- | HOURS
LIFE TEST END POINT$^J$
OPERATION
88 | --- | $mA$| dc
HEATER CYCLING LIFE TEST$^{KL}$
2000 | --- | CYCLES

NOTES

$^A$ SEE MIL-E-12 4.10.13

$^B$ IN A FULL-WAVE CIRCUIT ADJUST $Z_{P/P}$ SUCH THAT A TUBE HAVING $E_{PD} = 22\, V_{dc}$ AT 100 mA PER PEATE GIVES $I_0 = 130\, mA_{dc}$.

$^C$ SEE MIL-E-12 4.9.20.3

$^D$ SEE MIL-E-12 4.9.20.4

$^E$ SEE MIL-E-12 4.9.20.5

$^F$ AFTER SHOCK TESTS, THE TUBES SHALL MEET POST-SHOCK AND FATIGUE TEST END POINT REQUIREMENTS. IN ADDITION, THE TUBES SHALL NOT SHOW PERMANENT SHORTS OR OPEN CIRCUITS WHEN TESTED PER 4.7 (F-14) AFTER SHOCK TESTS.

$^G$ SEE MIL-E-12 4.9.20.6

$^H$ IN LIFE TEST CONDITIONS THE VALUES OF RL AND CL GIVEN IN TEST CONDITIONS MAY BE CONSIDERED APPROXIMATE AND SHALL BE ADJUSTED INITIALLY TO GIVE $I_0$ EQUAL TO OR GREATER THAN 10 mA AT 300 mA TOTAL. EACH $= 200$.

$^J$ SEE MIL-E-12 4.11.4

$^K$ SEE MIL-E-12 4.11.7

$^L$ $E_f = 32\, V_{dc}$, $E_{KH} = 450\, V_{dc}$, $E_{PD} = 22\, V_{dc}$. TUBES TO PASS IF $I_0$ $mA$ AND LIFE TEST END POINTS.
26Z5W
FULL-WAVE RECTIFIER

E INPUT = 450 Volts RMS Per Plate

400
350
300
250
200
150

E INPUT = 450 Volts RMS Per Plate

64 MA

Source Impedance = 300 Ohms
Input Capacitor = 10 µF

Voltage Boundary the Same as Rating Chart

Current and

DC OUTPUT IN Volts

0 25 50 75 100 125
DC LOAD IN MILLIAMPERES

26Z5W
FULL-WAVE RECTIFIER

Boundary Line for Choke of 10 Henries
Dashed Curves to Left of Boundary Line Require an Increase in Choke Inductance
Current and Voltage Boundary the Same as Rating Chart

E INPUT = 450 Volts RMS Per Plate

380 V.

325

300
250
200
150

DC OUTPUT VOLTAGE AT INPUT TO FILTER

0 25 50 75 100 125
DC LOAD IN MILLIAMPERES

TONG-SOL ELECTRIC INC. ELECTRON TUBE DIVISION BLOOMFIELD, NEW JERSEY, U.S.A. JANUARY 1, 1957 PLATE #0858