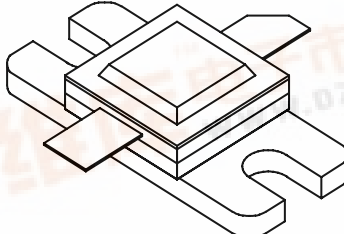




# 0910 – 60M

60 Watts - 40 Volts, 150µs, 5%  
Radar 890 - 1000 MHz

|   |   |                              |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
|---|---|------------------------------|----------|-------|-------------------------|-----------|----|-------------------|--------|---------------------|-----------------|--------------------------------|---------|--|
| <p><b>GENERAL DESCRIPTION</b><br/>The 0910-60M is an internally matched, COMMON BASE transistor capable of providing 60 Watts of pulsed RF output power at 150 µs pulse width, 5% duty factor across the band 890 to 1000 MHz. This hermetically solder-sealed transistor is specifically designed for P-Band radar applications. It utilizes gold metallization to provide high reliability.</p>   | <p><b>CASE OUTLINE</b><br/><b>55AW-1</b></p>  |                              |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
| <p><b>ABSOLUTE MAXIMUM RATINGS</b><br/>Maximum Power Dissipation @ 25°C <span style="float: right;">180 Watts</span></p> <p><b>Maximum Voltage and Current</b></p> <table border="0"> <tr> <td>BVces</td> <td>Collector to Emitter Voltage</td> <td style="text-align: right;">65 Volts</td> </tr> <tr> <td>BVebo</td> <td>Emitter to Base Voltage</td> <td style="text-align: right;">3.5 Volts</td> </tr> <tr> <td>Ic</td> <td>Collector Current</td> <td style="text-align: right;">8 Amps</td> </tr> </table> <p><b>Maximum Temperatures</b></p> <table border="0"> <tr> <td>Storage Temperature</td> <td style="text-align: right;">- 65 to + 200°C</td> </tr> <tr> <td>Operating Junction Temperature</td> <td style="text-align: right;">+ 200°C</td> </tr> </table> | BVces   | Collector to Emitter Voltage | 65 Volts | BVebo | Emitter to Base Voltage | 3.5 Volts | Ic | Collector Current | 8 Amps | Storage Temperature | - 65 to + 200°C | Operating Junction Temperature | + 200°C |  |
| BVces   | Collector to Emitter Voltage  | 65 Volts                     |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
| BVebo   | Emitter to Base Voltage   | 3.5 Volts                    |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
| Ic  | Collector Current   | 8 Amps                       |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
| Storage Temperature   | - 65 to + 200°C   |                              |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |
| Operating Junction Temperature  | + 200°C   |                              |          |       |                         |           |    |                   |        |                     |                 |                                |         |  |

## ELECTRICAL CHARACTERISTICS @ 25 °C

| SYMBOL                  | CHARACTERISTICS           | TEST CONDITIONS       | MIN | TYP | MAX | UNITS |
|-------------------------|---------------------------|-----------------------|-----|-----|-----|-------|
| <b>Pout</b>             | Power Out                 | Freq = 890 – 1000 MHz | 60  |     | 84  | Watts |
| <b>Pg</b>               | Power Gain                | Vcc = 40 Volts        | 8.0 | 8.5 |     | dB    |
| <b>ηc</b>               | Collector Efficiency      | Pin = 9.5 Watts       | 40  | 45  |     | %     |
| <b>Pd</b>               | Pulse Droop               | Pulse Width = 150µs   |     |     | 0.5 | dB    |
| <b>RI</b>               | Input Return loss         | Duty Factor = 5%      | -9  |     |     | dB    |
| <b>VSWR<sup>1</sup></b> | Load Mismatch Tolerance   |                       |     |     | 3:1 |       |
| <b>VSWRs</b>            | Load Mismatch - Stability |                       |     |     | 2:1 |       |

Note 1: Pulse condition of 150µsec, 5%.

|                        |                                |                       |    |  |     |       |
|------------------------|--------------------------------|-----------------------|----|--|-----|-------|
| <b>Bvces</b>           | Collector to Emitter Breakdown | Ic = 40 mA            | 65 |  |     | Volts |
| <b>Ices</b>            | Collector to Emitter Leakage   | Vce = 40 Volts        |    |  | 10  | mA    |
| <b>Iebo</b>            | Emitter to Base Leakage        | Vebo = 3.0 Volts      |    |  | 8   | mA    |
| <b>θjc<sup>1</sup></b> | Thermal Resistance             | Rated Pulse Condition |    |  | 1.0 | °C/W  |

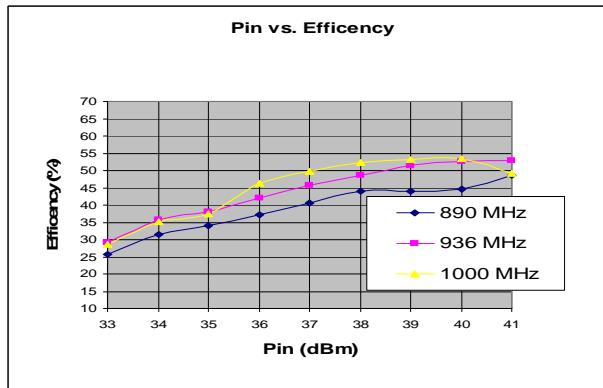
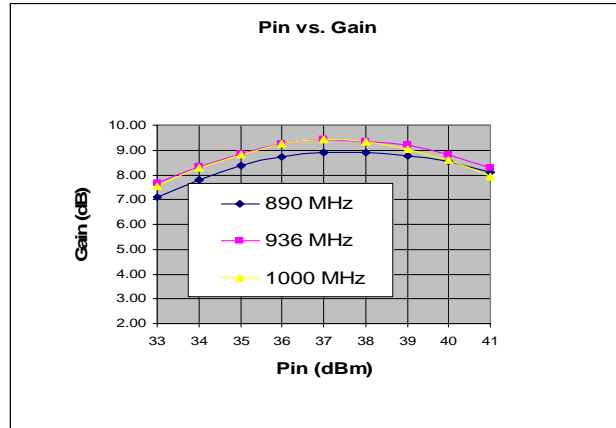
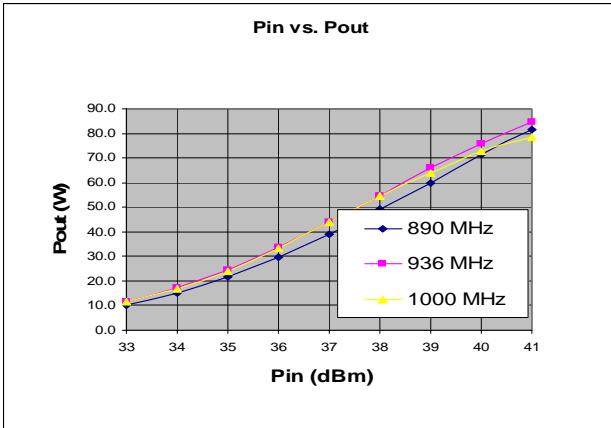
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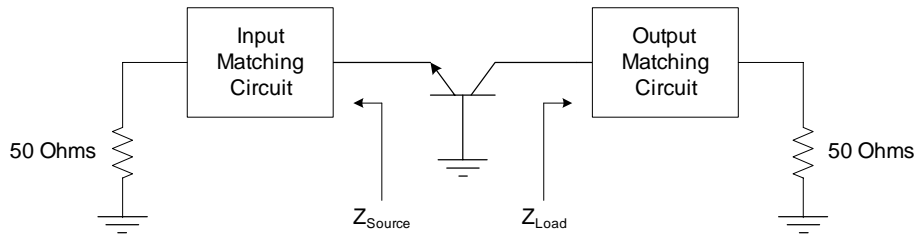


# 0910-60M

## Performance Curves –



## Impedance Information

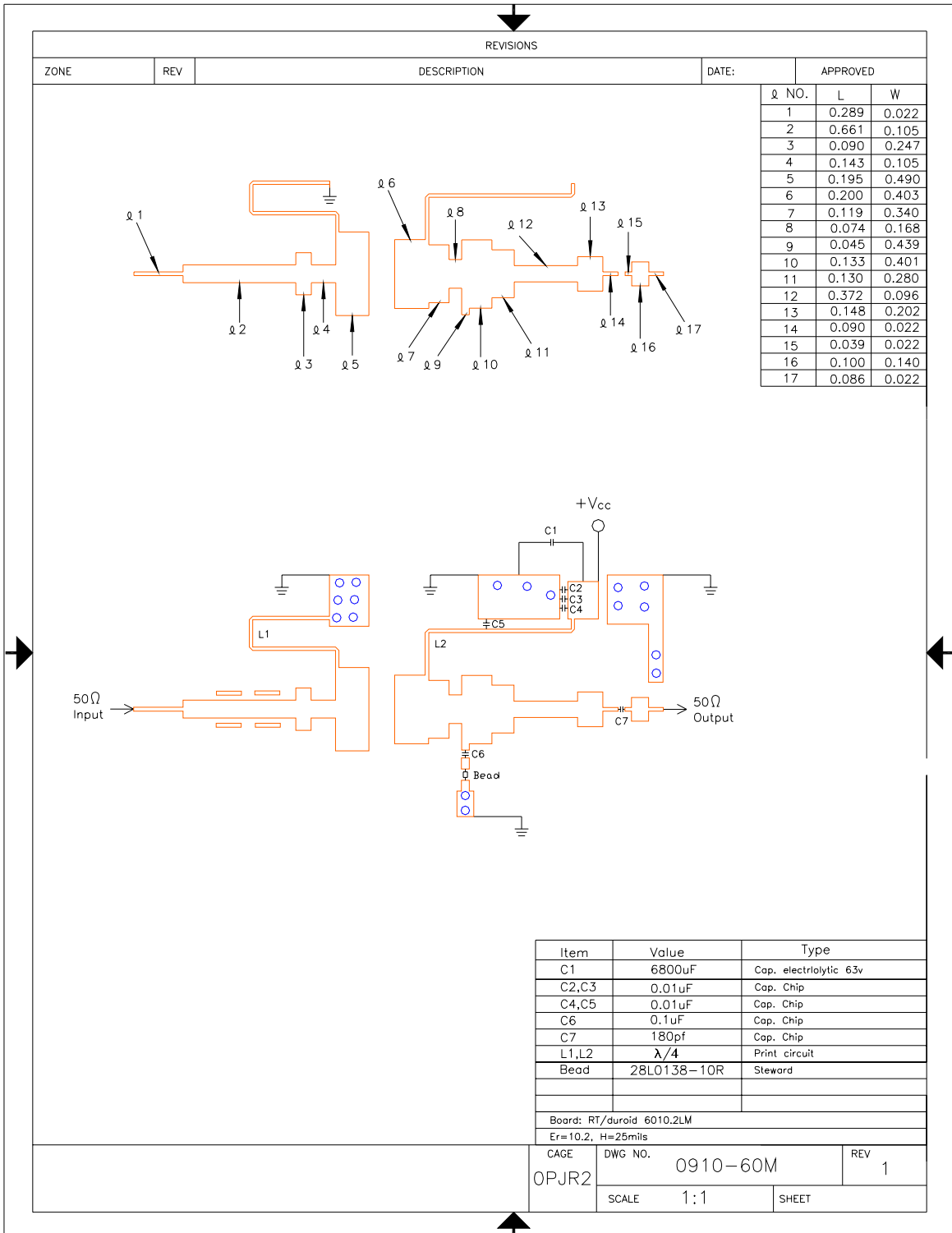


| Frequencies (MHz) | $Z_{Source} (\Omega)$ | $Z_{Load} (\Omega)^2$ |
|-------------------|-----------------------|-----------------------|
| 890               | 4.4-j4.0              | 2.8-j0.7              |
| 937               | 4.5-j3.3              | 2.9-j0.0              |
| 1000              | 4.7-j2.5              | 3.2+j0.95             |

Note 2:  $Z_{Load}$  exclusive of C5, C6 and bead on the test circuit

# 0910-60M

## Test Circuit





# 0910-60M

## Case Outline

