



2931-150

150 Watts, 38 Volts, 50 μ s, 4%
Radar 2900-3100 MHz

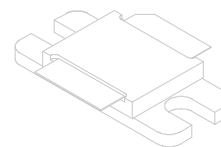
Preliminary

GENERAL DESCRIPTION

The 2931-150 is an internally matched, COMMON BASE bipolar transistor capable of providing 150 Watts of pulsed RF output power at 50 μ s pulse width, 4% duty factor across the 2900 to 3100 MHz band. **The transistor prematch and test fixture has been optimized through the use of Pulsed Automated Load Pull.** This hermetic ceramic sealed transistor is specifically designed for S-band radar applications. It utilizes gold metallization and emitter ballasting to provide high reliability and supreme ruggedness.

CASE OUTLINE

55KS-1
Common Base



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C¹ 500 W

Maximum Voltage and Current

Collector to Base Voltage (BV_{ces}) 65 V

Emitter to Base Voltage (BV_{ebo}) 3.0 V

Collector Current (I_c) 15.0 A

Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature +200 °C

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F=2900-3100 MHz V _{cc} = 38 Volts Pulse Width = 50 μ s Duty Factor = 4 %	150			W
P _{in}	Power Input				21.7	W
P _g	Power Gain		8.3	8.7		dB
η_c	Collector Efficiency		45	50		%
R _l	Return Loss		7			dB
P _d	Pulse Droop				0.6	dB
t _r	Rise Time				150	nS
VSWR _l	Load Mismatch Tolerance ¹	F = 3100 MHz, P _o = 150W			2:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

BV _{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.0			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 120 mA	65			V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 600 mA	18	60		
θ_{jc} ¹	Thermal Resistance				0.35	°C/W

NOTE: 1. At rated output power and pulse conditions

Issue 2, April 2005

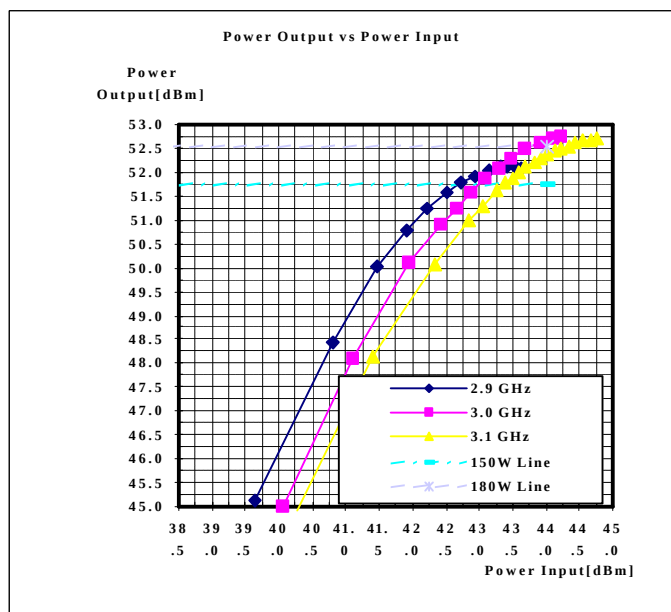


2931-150

Vcc = 38 Volts, Pulse Width = 50ms, Duty = 4 %

G2754-2,

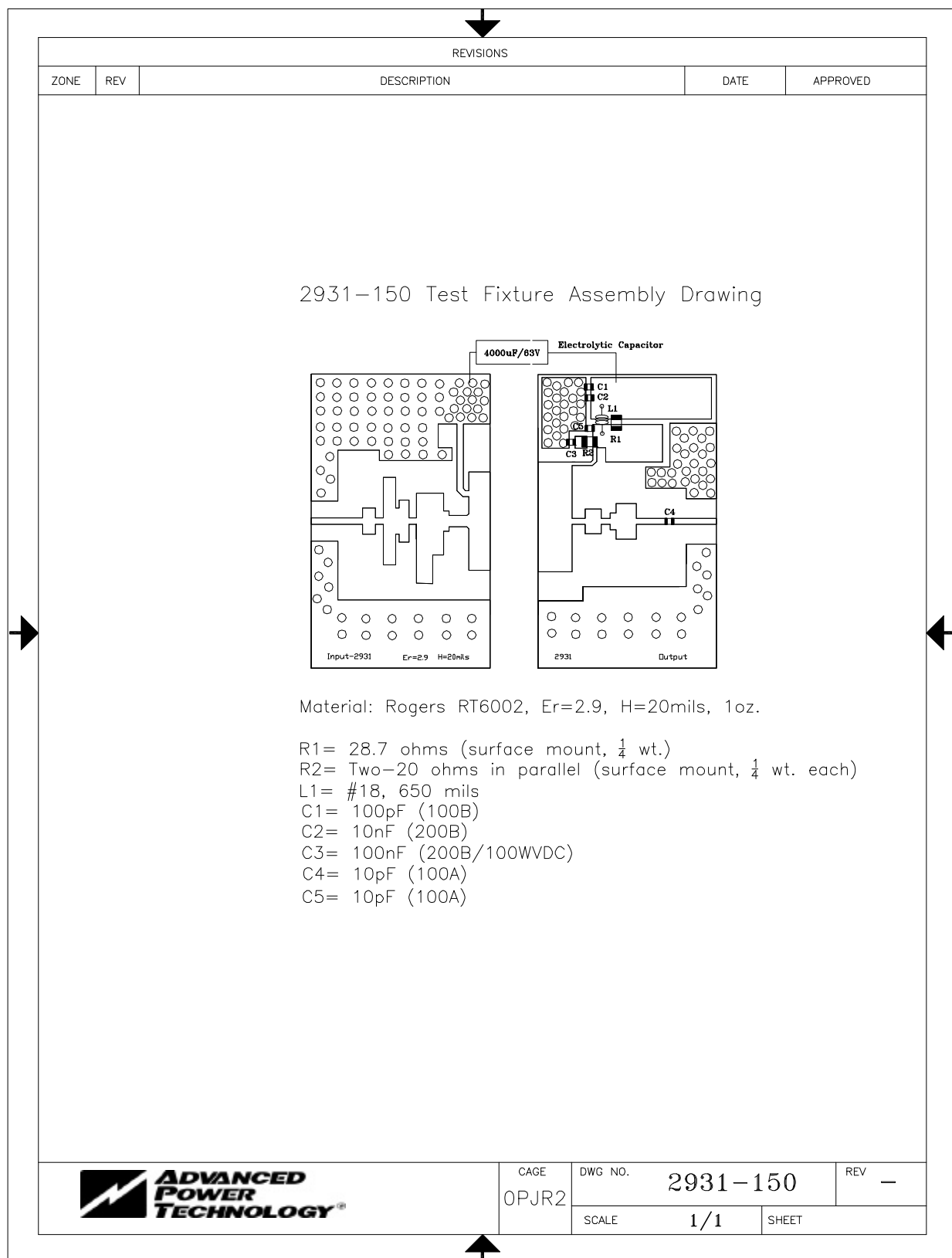
Product is in characterization, additional curves will be inserted at the conclusion.



Impedance curves will be added at the completion of the characterization.

2931-150

Test Circuit



2931-150

