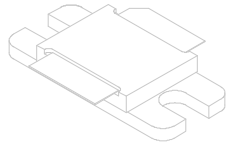




2931-150

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

Preliminary

<p>GENERAL DESCRIPTION</p> <p>The 2931-150 is an internally matched, COMMON BASE bipolar transistor capable of providing 150 Watts of pulsed RF output power at 50μs 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.</p>	<p>CASE OUTLINE 55KS-1 Common Base</p> 
<p>ABSOLUTE MAXIMUM RATINGS</p> <p>Maximum Power Dissipation Device Dissipation @ 25°C¹ 500 W</p> <p>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</p> <p>Maximum Temperatures Storage Temperature -65 to +200 °C Operating Junction Temperature +200 °C</p>	

ELECTRICAL CHARACTERISTICS @ 25°C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P _{out}	Power Output	F=2900-3100 MHz	150			W
P _{in}	Power Input	V _{cc} = 38 Volts			21.7	W
P _g	Power Gain	Pulse Width = 50 μ s	8.3	8.7		dB
η_c	Collector Efficiency	Duty Factor = 4 %	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

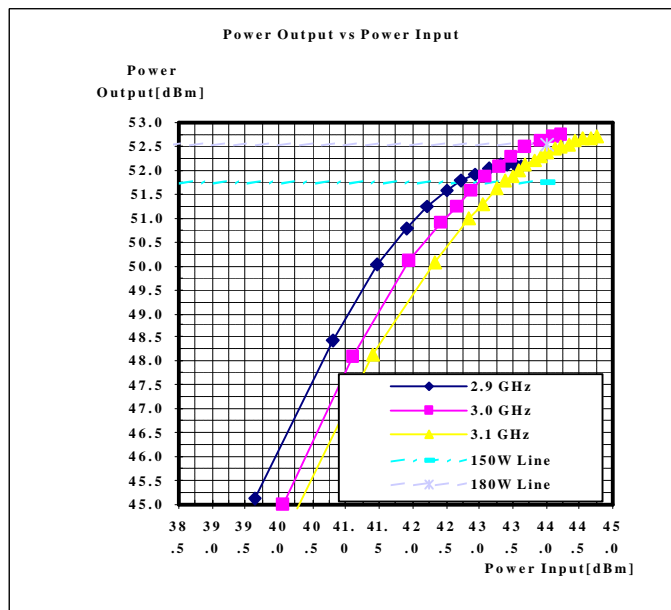


2931-150

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

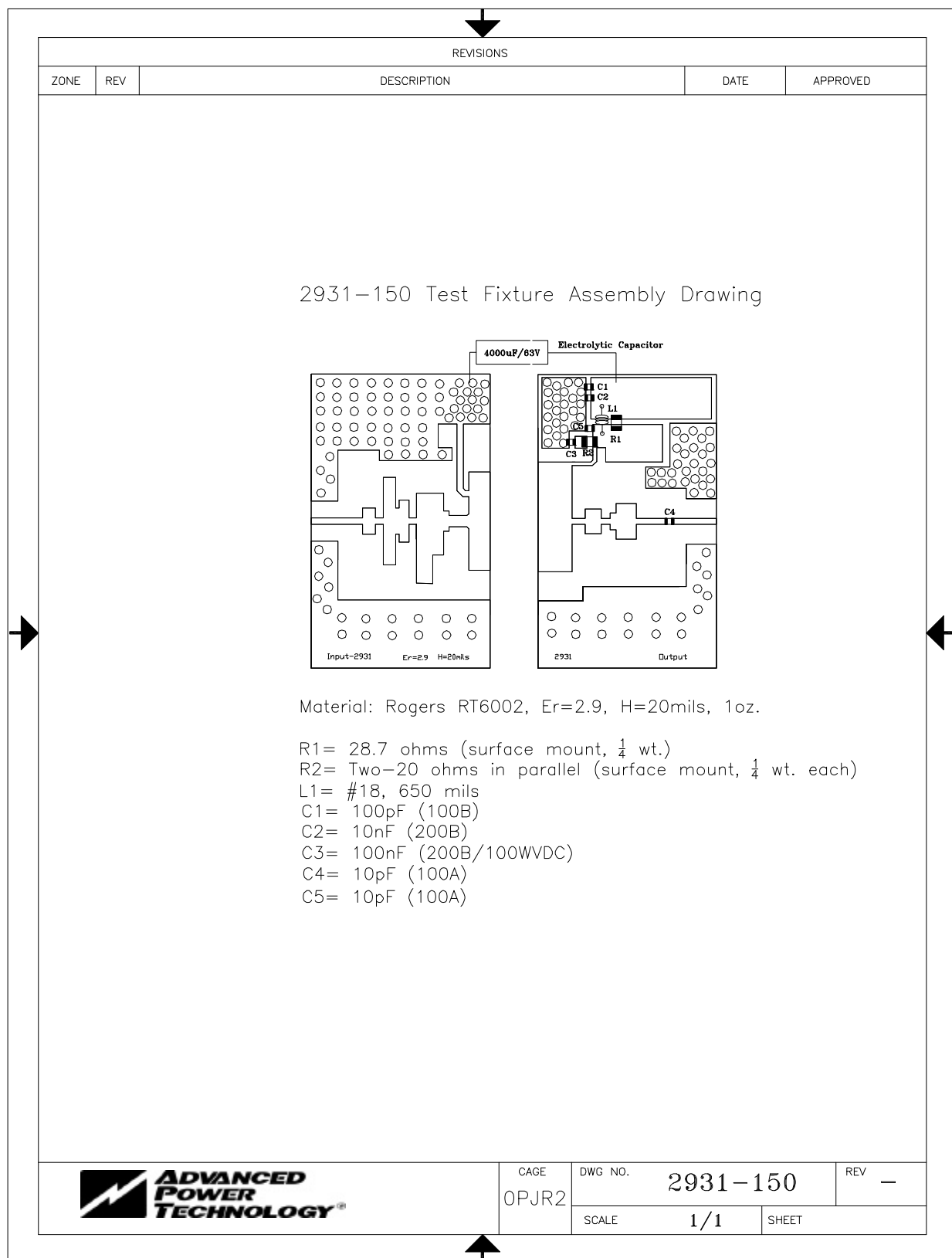
G2754-2,

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



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

Test Circuit



2931-150

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
<div style="text-align: center;"> </div>				

DIM	MILLIMETER	TOL	INCHES	TOL
A	22.86	.25	.900	.010
B	10.16	.25	.400	.010
C	4.19	.19	.165	.007
D	9.39	.13	.370	.005
E	1.52	.13	.060	.005
F	3.05	.13	.120	.005
G	0.13	.03	.005	.001
H	16.51	.76	.650	.030
I	45°	5°	45°	5°
J	12.70	.25	.500	.030
K	3.30 DIA	.13	.130 DIA	.005
L	9.78	.13	.385	.005
M	16.51	MAX	.650	MAX

STYLE:

1 = COLLECTOR

2 = BASE

3 = EMITTER

	GHZ TECHNOLOGY <small>RF - MICROWAVE SILICON POWER TRANSISTORS</small>	CAGE	DWG NO.	REV
	OPJR2	55KS	A	
		SCALE	2/1	SHEET