

2729-125

125 Watts, 36 Volts, 100μs, 10%
Radar 2700-2900 MHz

GENERAL DESCRIPTION

The 2729-125 is an internally matched, COMMON BASE bipolar transistor capable of providing 125 Watts of pulsed RF output power at 100μs pulse width, 10% duty factor across the 2700 to 2900 MHz band. **The transistor prematch and test fixture has been optimized through the use of Pulsed Automated Load Pull.** This hermetically solder-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 350 W

Maximum Voltage and Current

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

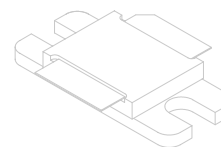
Emitter to Base Voltage (BV_{ebo}) 3.0 V

Collector Current (I_c) 15 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=2700-2900 MHz V _{cc} = 36 Volts Pulse Width = 100 μs Duty Factor = 10% F = 2900 MHz, P _o = 125W	125			W
P _{in}	Power Input				15.7	W
P _g	Power Gain		9.0	9.5		dB
η _c	Collector Efficiency		45	55		%
VSWR	Load Mismatch Tolerance ¹				2:1	

FUNCTIONAL CHARACTERISTICS @ 25°C

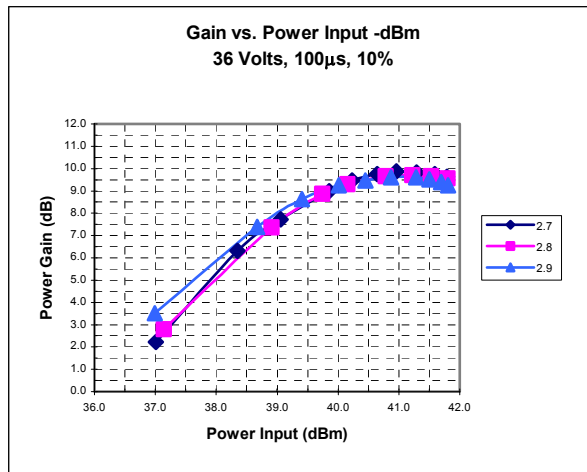
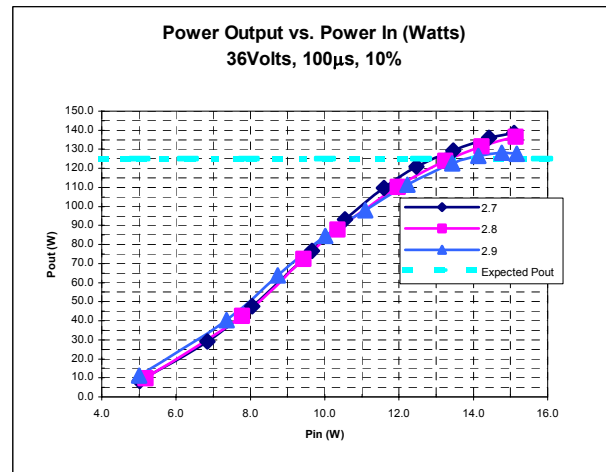
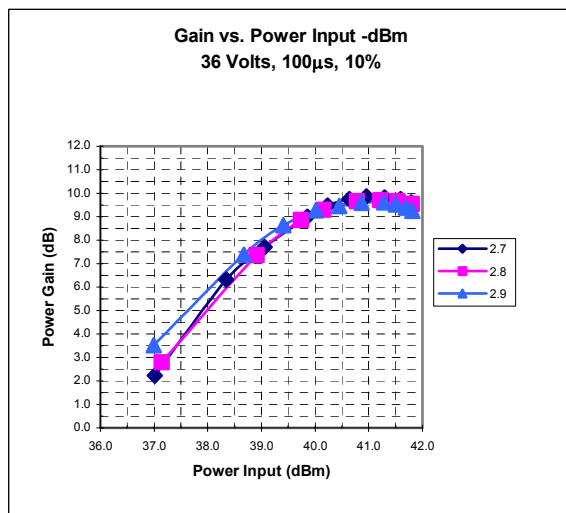
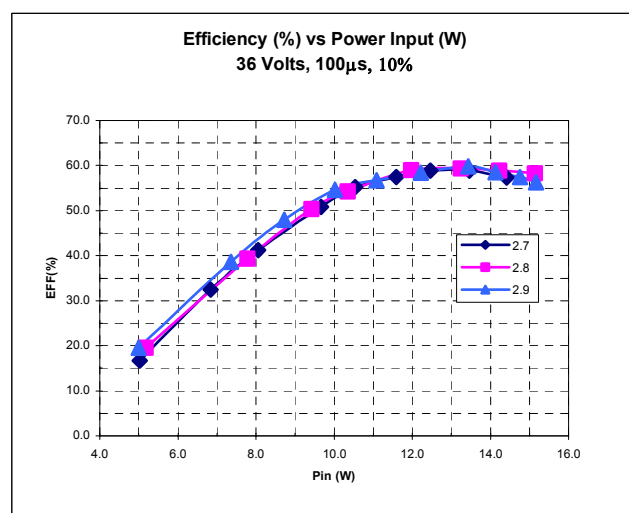
BV _{ebo}	Emitter to Base Breakdown	I _e = 30 mA	3.0			V
BV _{ces}	Collector to Emitter Breakdown	I _c = 120 mA	56	65		V
h _{FE}	DC – Current Gain	V _{ce} = 5V, I _c = 600 mA	18	50		
θ _{jc} ¹	Thermal Resistance				0.5	°C/W

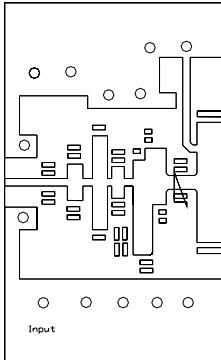
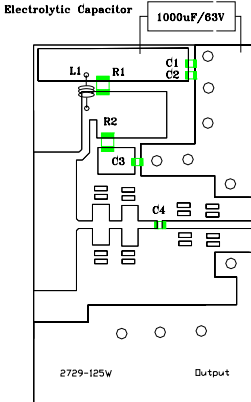
NOTE: 1. At rated output power and pulse conditions

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Vcc = 36 Volts, Pulse Width = 100μs, Duty = 10%

G2747-2, Unit 7, TF040803P2



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
<p style="text-align: center;">2729-125 Test Fixture Assembly Drawing</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;">   </div> <p>Material: Rogers RT6002, Er=2.9, H=20mils, 1oz.</p> <p>R1= 28.7 ohms (surface mount, 1/4 wt.) R2= Two-20 ohms in parallel (surface mount, 1/4 wt. each) L1= #18, 4 turns, dia = 165mils C1= 100pF (100B) C2= 47pF (100B) C3= 100nF (200B/100WVDC, special order) C4= 20pF (100A)</p>				

 CHz TECHNOLOGY	CAGE OPJR2	DWG NO. 2729-125	REV —
	SCALE 1/1		SHEET

2729-125

