

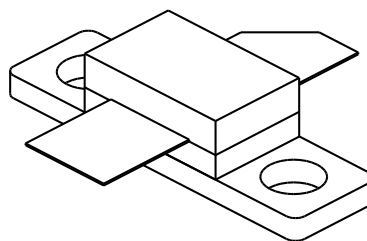
0912-25

25 Watts, 50 Volts, Pulsed
Avionics 960 - 1215 MHz

GENERAL DESCRIPTION

The 0912-25 is a COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 960-1215 MHz. The device has gold thin-film metallization for proven highest MTTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

CASE OUTLINE 55CX, STYLE 1



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 125 Watts

Maximum Voltage and Current

BVces Collector to Base Voltage 60 Volts

BVebo Emitter to Base Voltage 4.0 Volts

Ic Collector Current 2.5 Amps

Maximum Temperatures

Storage Temperature - 65 to + 150°C

Operating Junction Temperature + 200°C

ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_{out}	Power Out	F = 960-1215 MHz	25			Watts
P_{in}	Power Input	V _{cc} = 50 Volts			3.5	Watts
P_g	Power Gain	PW = 10 μsec	8.5	10		dB
η_c	Collector Efficiency	DF = 1 %		45		%
VSWR	Load Mismatch Tolerance	F = 1090 MHz			10:1	

BVebo	Emitter to Base Breakdown	I _e = 25 mA	4.0			Volts
BVces	Collector to Emitter Breakdown	I _c = 75 mA	55			Volts
Cob	Capacitance Collector to Base	V _{cb} = 50 Volts		14	17	pF
h_{FE}	DC - Current Gain	I _c = 300 mA, V _{ce} = 5 V	10			
θ_{jc}²	Thermal Resistance				1.4	°C/W

Note 1: At rated output power and pulse conditions.

2: At rated pulse conditions

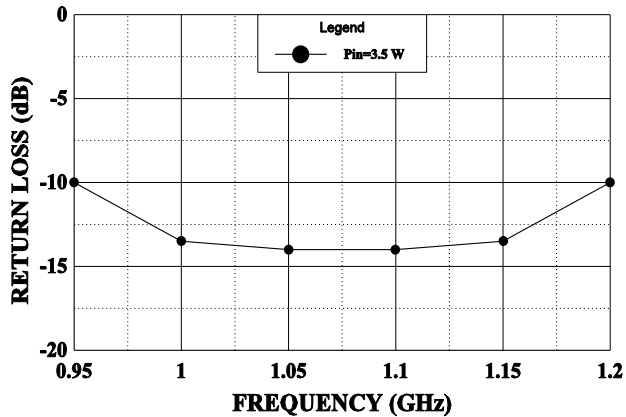
Initial Issue June 1, 1994

GHz TECHNOLOGY INC. RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE. GHz RECOMMENDS THAT BEFORE THE PRODUCT(S) DESCRIBED HEREIN ARE WRITTEN INTO SPECIFICATIONS, OR USED IN CRITICAL APPLICATIONS, THAT THE PERFORMANCE CHARACTERISTICS BE VERIFIED BY CONTACTING THE FACTORY.

GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

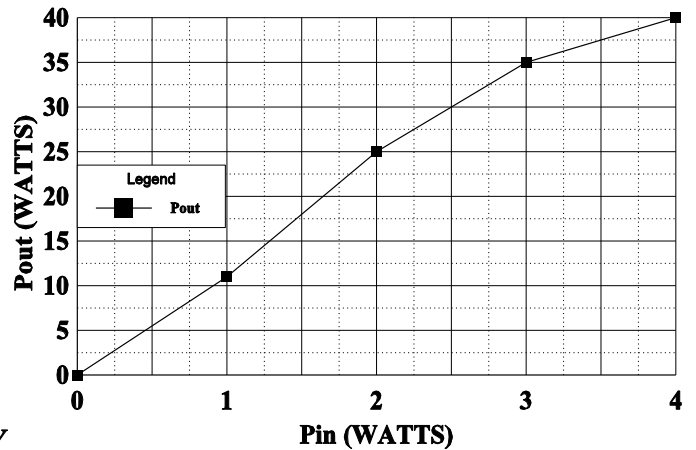
WIDEBOARD CIRCUIT INPUT RETURN LOSS

Pin = 3.5 Watt Pk, Vcc = 50 Volts



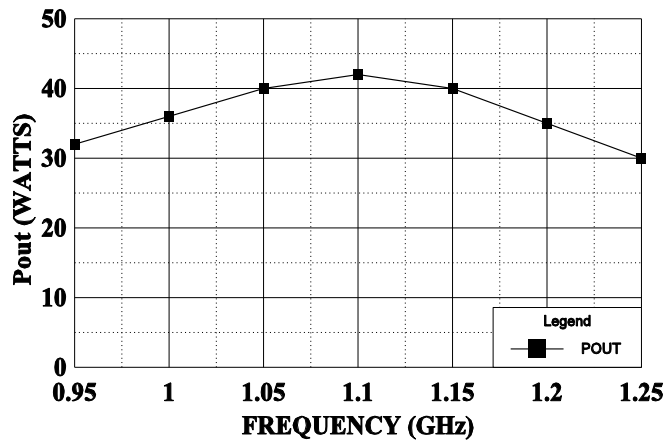
POWER OUTPUT vs POWER INPUT

Vcc = 50V, Frequency 1090 MHz



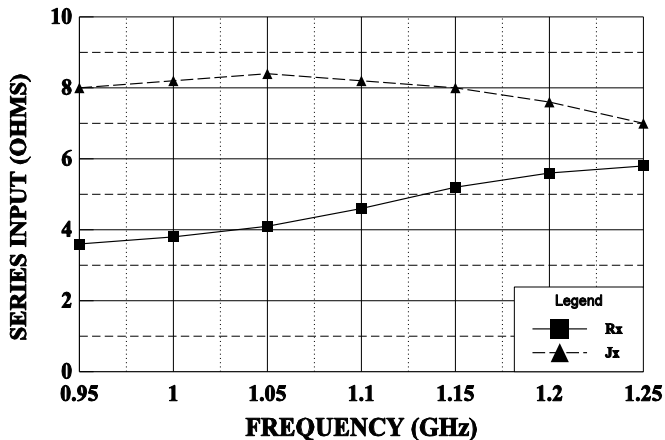
Pout VS FREQUENCY

Vcc=50V, Pin = 3.5 W



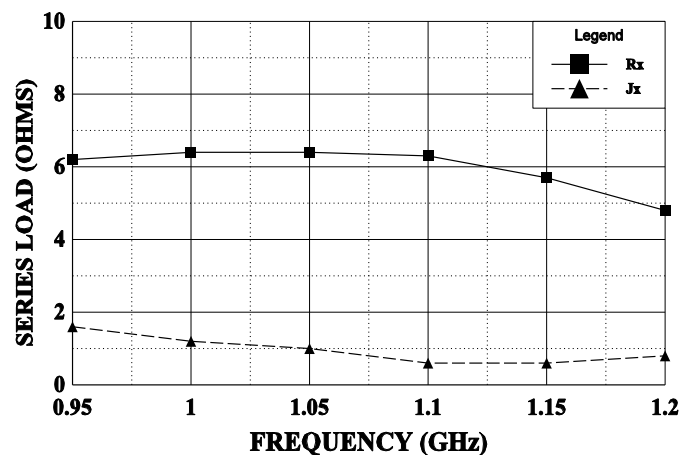
SERIES INPUT IMPEDANCE vs FREQUENCY

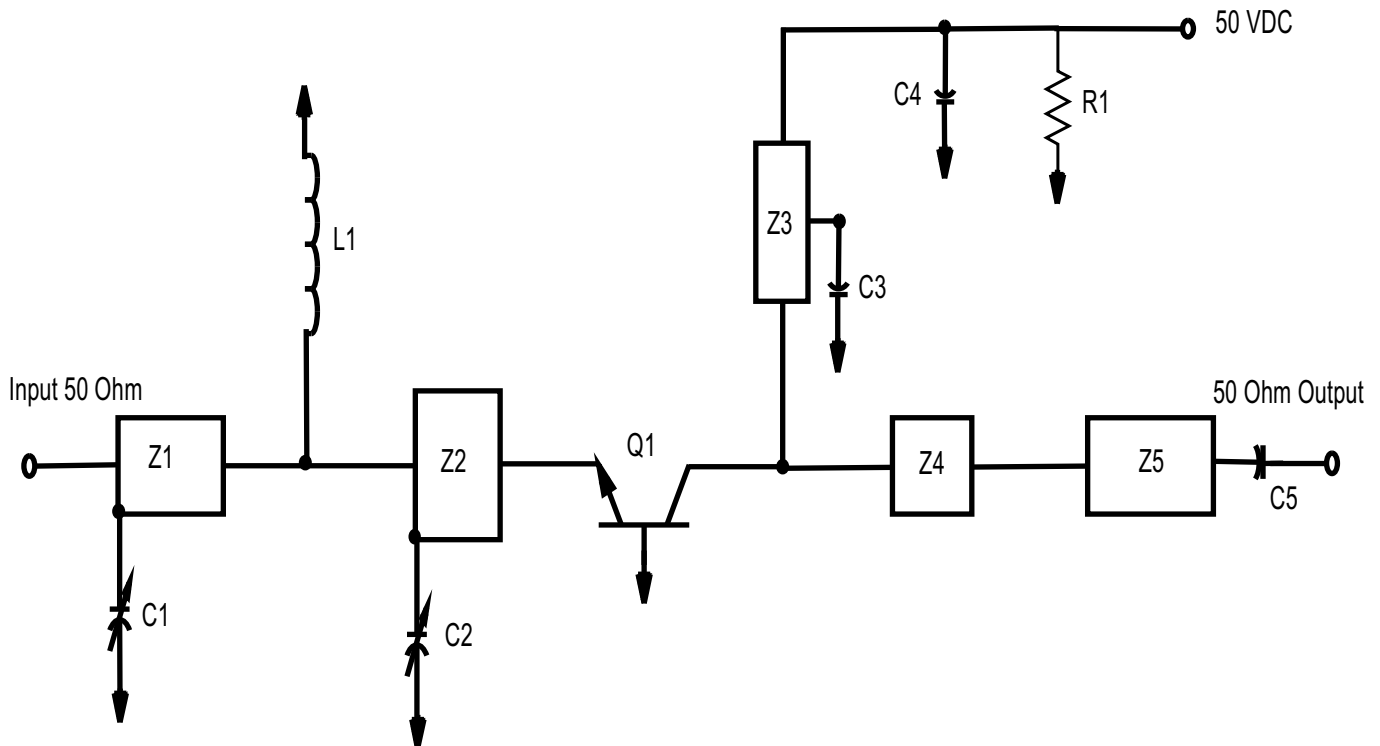
Vcc = 50 V, Pin = 1 W



SERIES LOAD IMPEDANCE vs FREQUENCY

Vcc = 50 V, Pin = 3.5W





PC Board Material .010" Dielectric Teflon Fiberglass

Z1=50 , .112 , .27"w X .834"L

Z2=9 , .116 , .22"w X .811"L

Z3=50 , .7 , .27"w X 1.2"L

Move along Z3 for best tuning

Z4=10 , .04 , .2"w X .28"L

Z5=18.3 , .25 , .1"w X .18"L

C1, C2=Capacitor, .35-3.5 pF piston trimmer

C3, C5=Capacitor, 47 pF "B" (100mil) ATC

C4= Capacitor, 50 mf 75V electrolytic

L1=Inductor, #18 wire 1 1/2 turns 1/4" diameter

Q1=GHz 0912-25