

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.

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

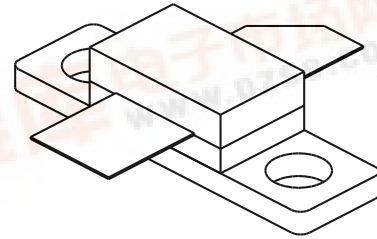
Ic Collector Current 2.5 Amps

Maximum Temperatures

Storage Temperature - 65 to + 150°C

Operating Junction Temperature + 200°C

CASE OUTLINE 55CX, STYLE 1



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
C _{ob}	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

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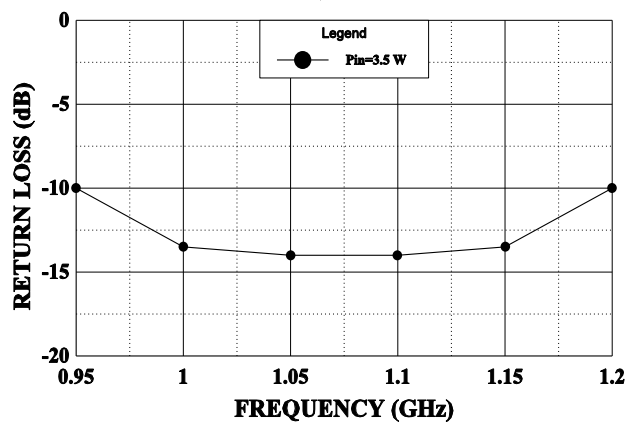
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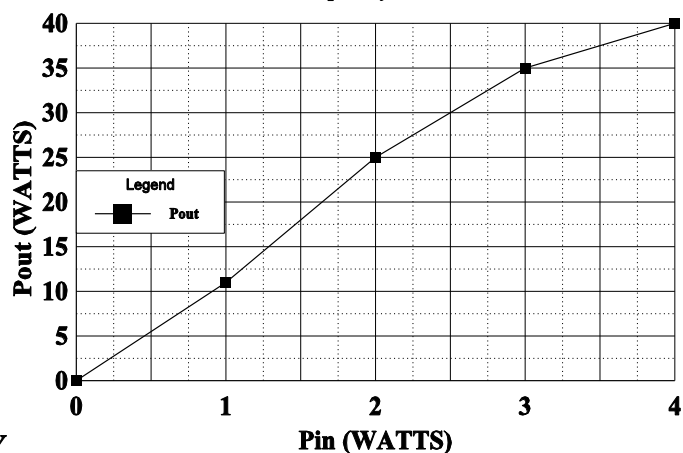
WIDEBOARD CIRCUIT INPUT RETURN LOSS

Pin = 3.5 Watt Pk, Vcc = 50 Volts



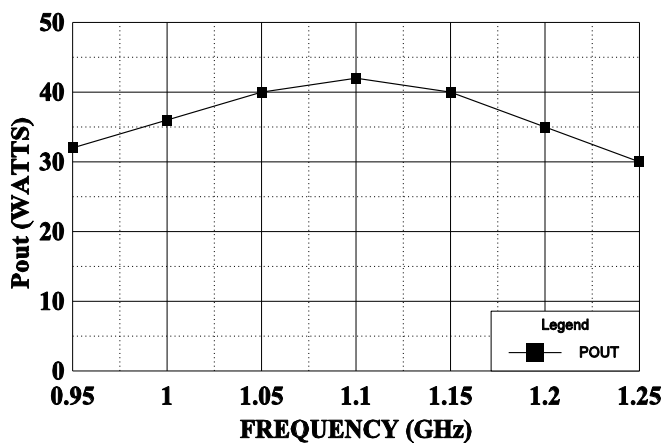
POWER OUTPUT vs POWER INPUT

Vcc = 50V, Frequency 1090 MHz



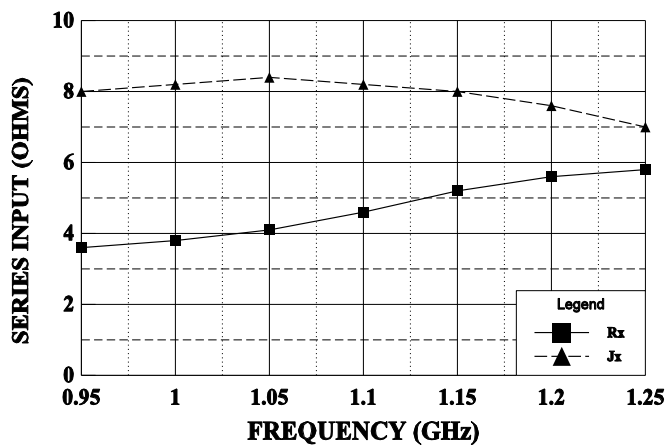
Pout VS FREQUENCY

Vcc=50V, Pin = 3.5 W



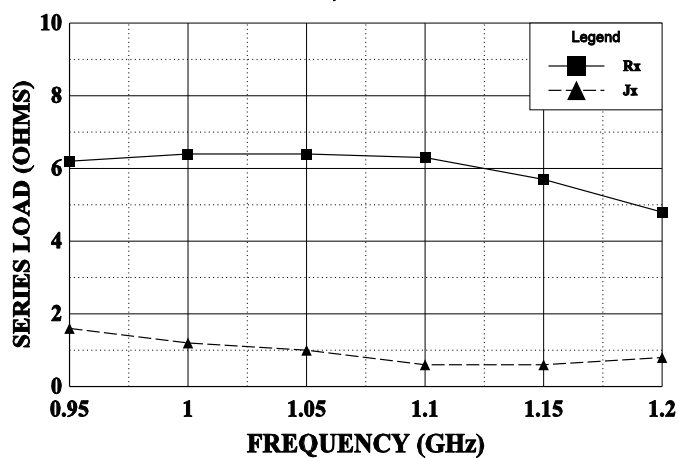
SERIES INPUT IMPEDANCE vs FREQUENCY

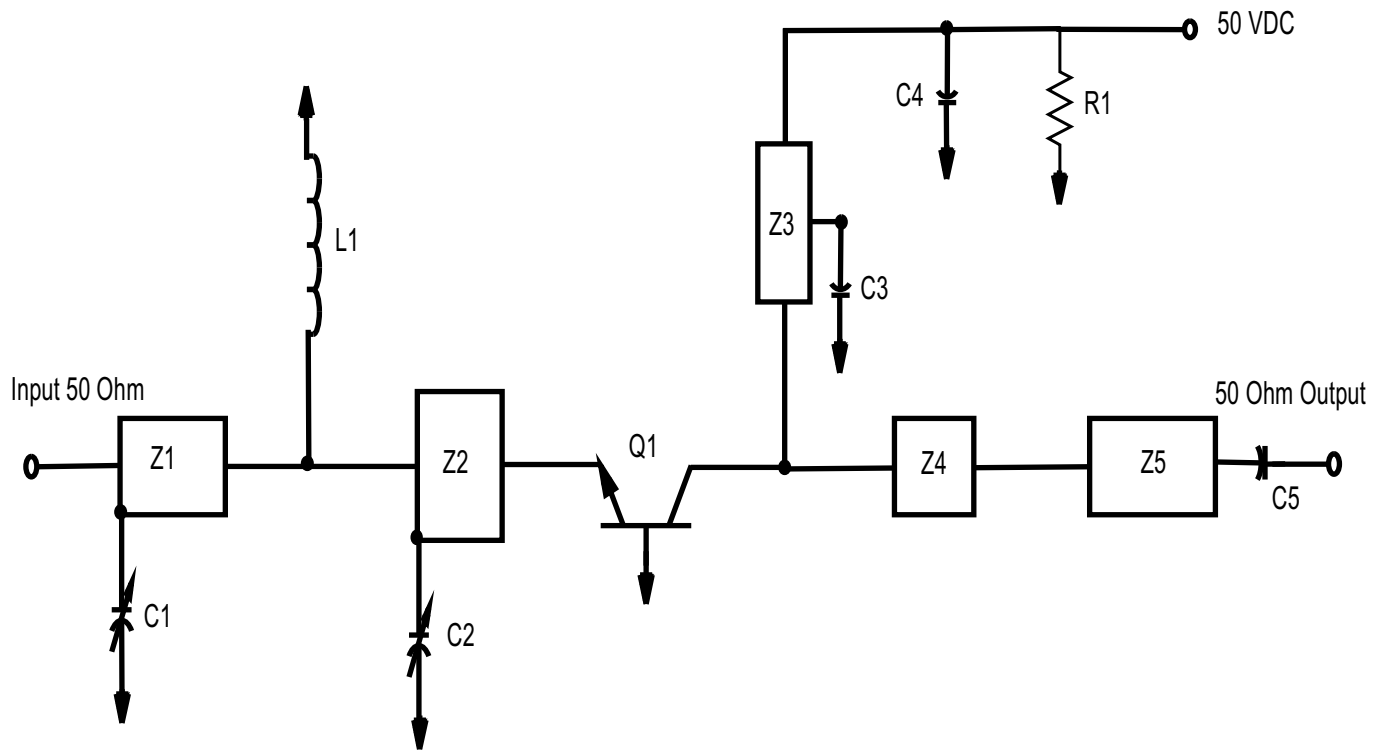
Vcc = 50 V, Pin = 1 W



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