



# 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°C<sup>2</sup> 125 Watts

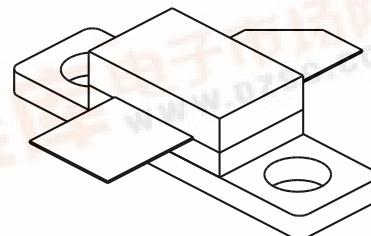
### Maximum Voltage and Current

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
<b>Pout</b>	Power Out	F = 960-1215 MHz	25		3.5	Watts
<b>Pin</b>	Power Input	Vcc = 50 Volts			3.5	Watts
<b>Pg</b>	Power Gain	PW = 10 $\mu$ sec	8.5	10		dB
$\eta_c$	Collector Efficiency	DF = 1 %		45		%
<b>VSWR</b>	Load Mismatch Tolerance	F = 1090 MHz			10:1	

<b>BVebo</b>	Emitter to Base Breakdown	Ie = 25 mA	4.0			Volts
<b>BVces</b>	Collector to Emitter Breakdown	Ic = 75 mA	55			Volts
<b>Cob</b>	Capacitance Collector to Base	Vcb = 50 Volts		14	17	pF
<b>h<sub>FE</sub></b>	DC - Current Gain	Ic = 300 mA, Vce = 5 V	10		1.4	°C/W
$\theta_{jc}^2$	Thermal Resistance					

Note 1: At rated output power and pulse conditions.

2: At rated pulse conditions

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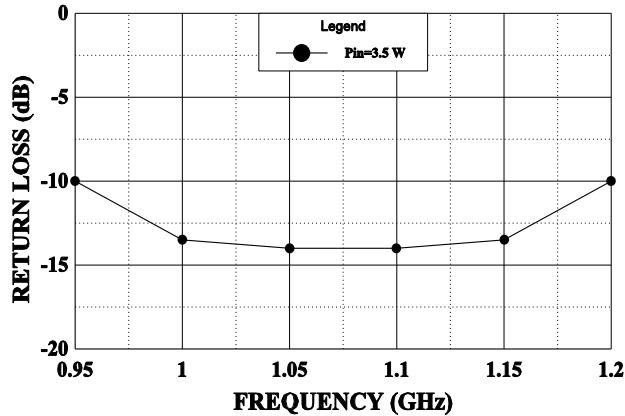


**CHz TECHNOLOGY**  
RF·MICROWAVE SILICON POWER TRANSISTORS

**0912-25**

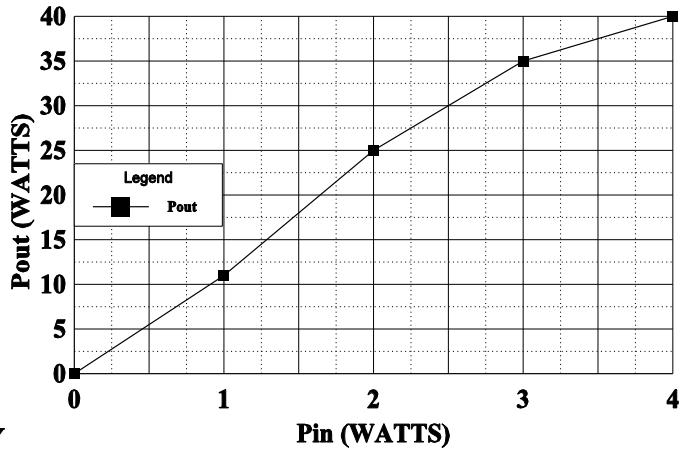
**WIDEBOARD CIRCUIT INPUT RETURN LOSS**

Pin = 3.5 Watt Pk, Vcc = 50 Volts



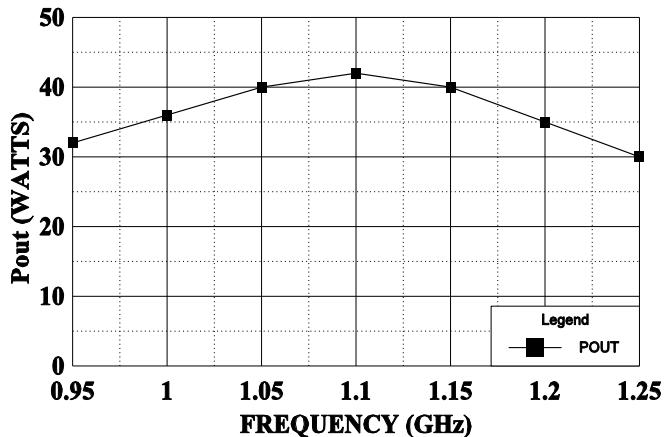
**POWER OUTPUT vs POWER INPUT**

Vcc = 50V, Frequency 1090 MHz



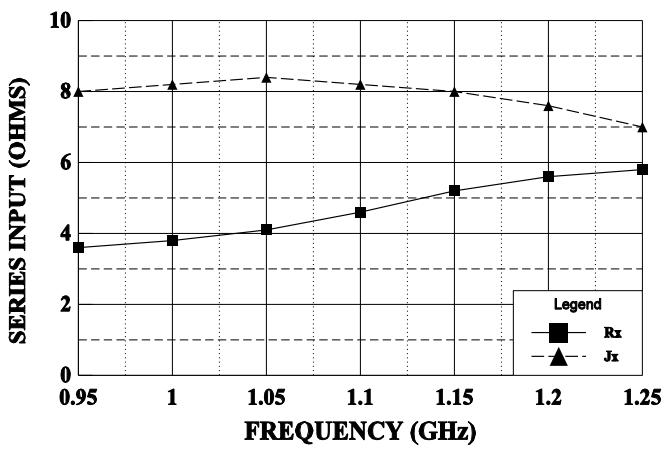
**Pout VS FREQUENCY**

Vcc=50V, Pin = 3.5 W



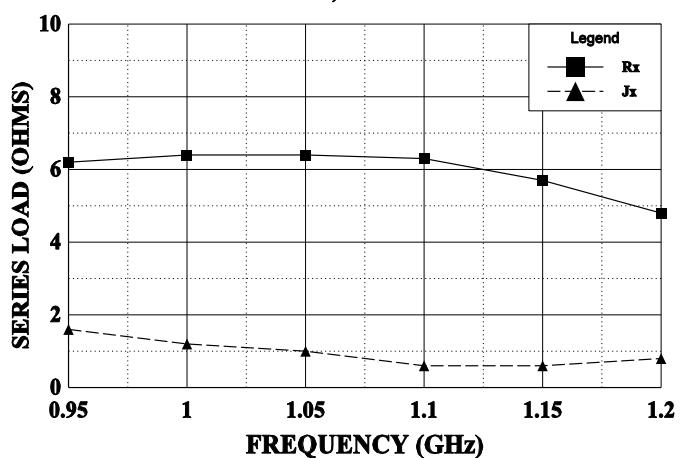
**SERIES INPUT IMPEDANCE vs FREQUENCY**

Vcc = 50 V, Pin = 1 W

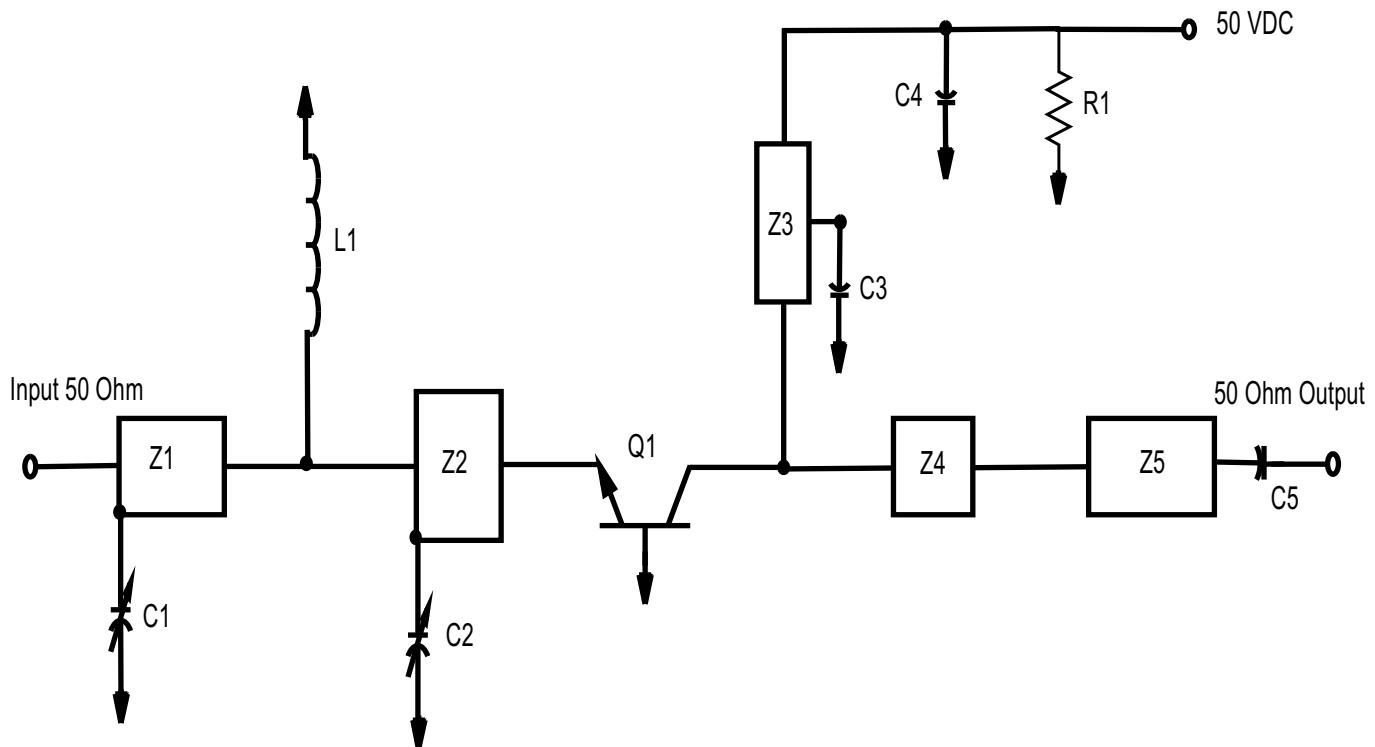


**SERIES LOAD IMPEDANCE vs FREQUENCY**

Vcc = 50 V, Pin = 3.5W



0912-25



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