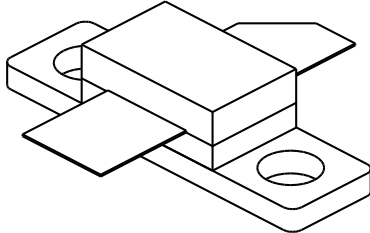


# 0912-25

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

<p><b>GENERAL DESCRIPTION</b></p> <p>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 MTF. The transistor includes input prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.</p>	<p><b>CASE OUTLINE</b> <b>55CX, STYLE 1</b></p> 
<p><b>ABSOLUTE MAXIMUM RATINGS</b></p> <p>Maximum Power Dissipation @ 25°C<sup>2</sup> 125 Watts</p> <p><b>Maximum Voltage and Current</b></p> <p>BVces Collector to Base Voltage 60 Volts          BVebo Emitter to Base Voltage 4.0 Volts          Ic Collector Current 2.5 Amps</p> <p><b>Maximum Temperatures</b></p> <p>Storage Temperature - 65 to + 150°C          Operating Junction Temperature + 200°C</p>	

## ELECTRICAL CHARACTERISTICS @ 25 °C

SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>Pout</b>	Power Out	F = 960-1215 MHz	25			Watts
<b>Pin</b>	Power Input	Vcc = 50 Volts			3.5	Watts
<b>Pg</b>	Power Gain	PW = 10 μsec	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>hFE</b>	DC - Current Gain	Ic = 300 mA, Vce = 5 V	10			
$\theta_{jc}^2$	Thermal Resistance				1.4	°C/W

Note 1: At rated output power and pulse conditions.

2: At rated pulse conditions

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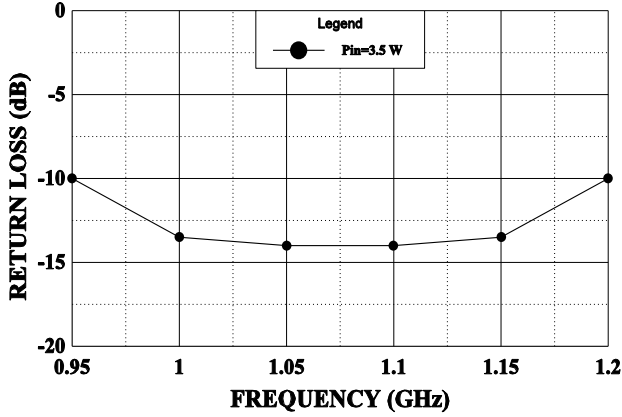


**GHZ TECHNOLOGY**  
RF-MICROWAVE SILICON POWER TRANSISTORS

0912-25

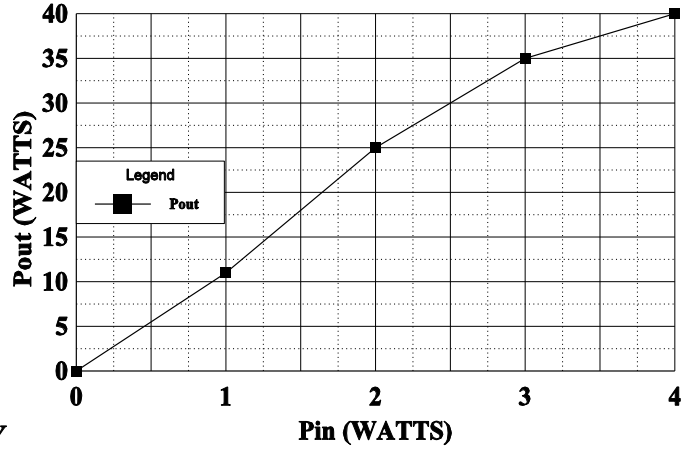
**WIDEBAND CIRCUIT INPUT RETURN LOSS**

Pin = 3.5 Watt Pk, Vcc = 50 Volts



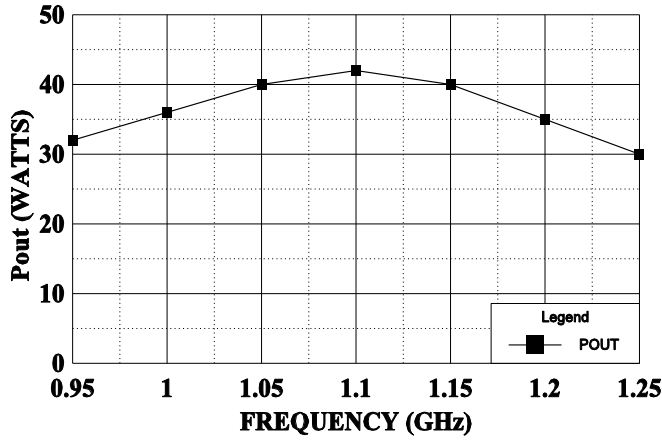
**POWER OUTPUT vs POWER INPUT**

Vcc = 50V, Frequency 1090 MHz



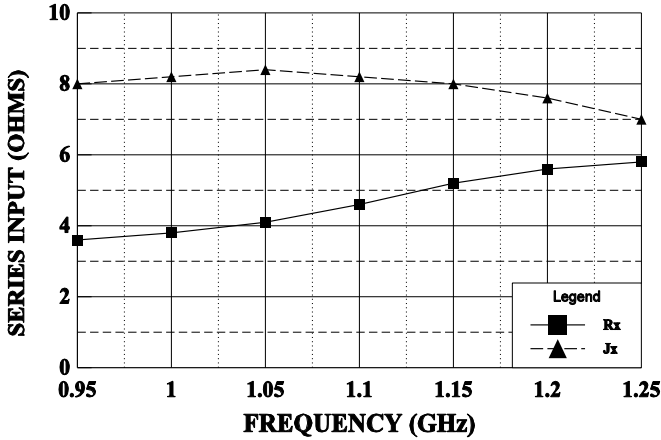
**Pout VS FREQUENCY**

Vcc=50V, Pin = 3.5 W



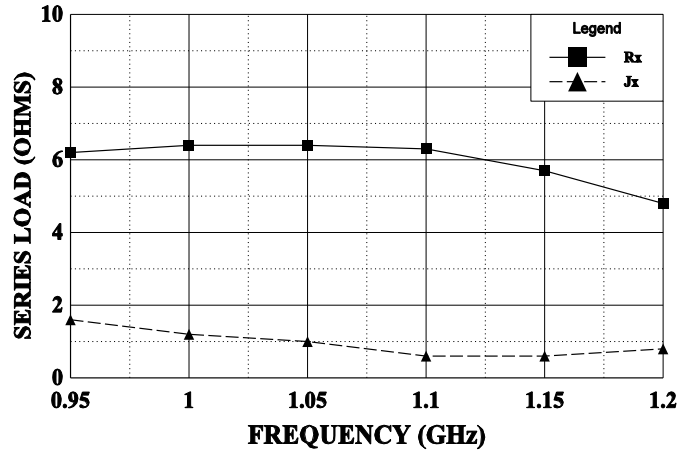
**SERIES INPUT IMPEDANCE vs FREQUENCY**

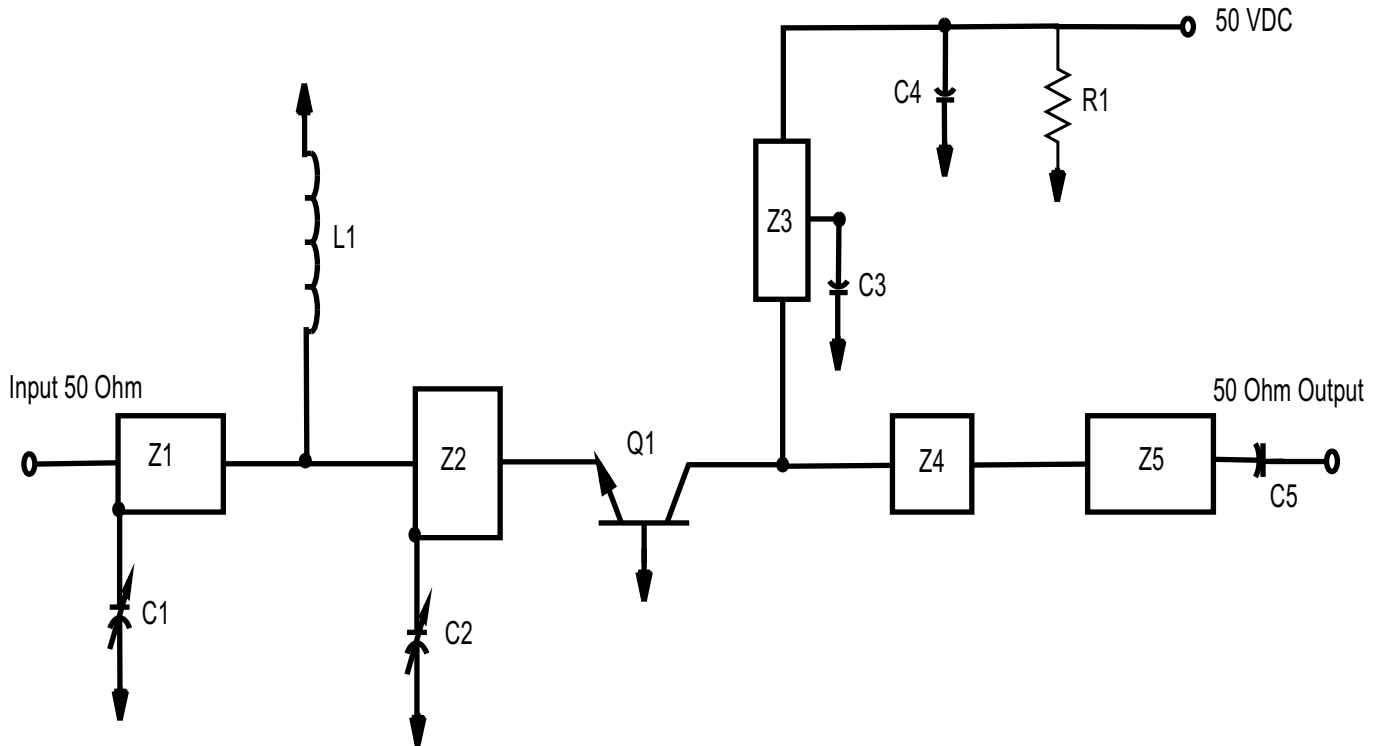
Vcc = 50 V, Pin = 1 W



**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