

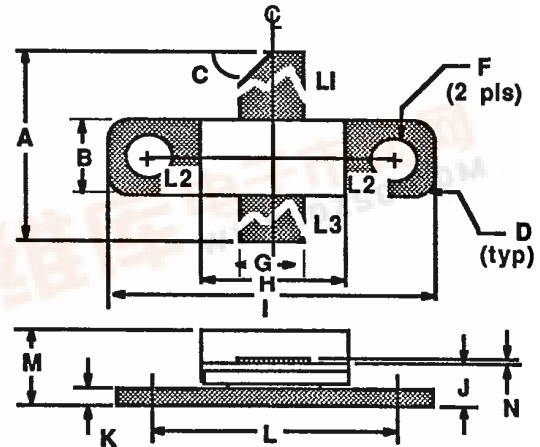
0912-7

7 WATTS - 50 VOLTS
960-1215 MHz

AVIONICS PULSED BIPOLAR

GENERAL DESCRIPTION

The 0912-7 is an internally matched, common base transistor providing 7 watts of pulsed RF output power across the 960-1215 MHz band. This hermetically sealed transistor is specifically designed for avionics pulsed radar applications.

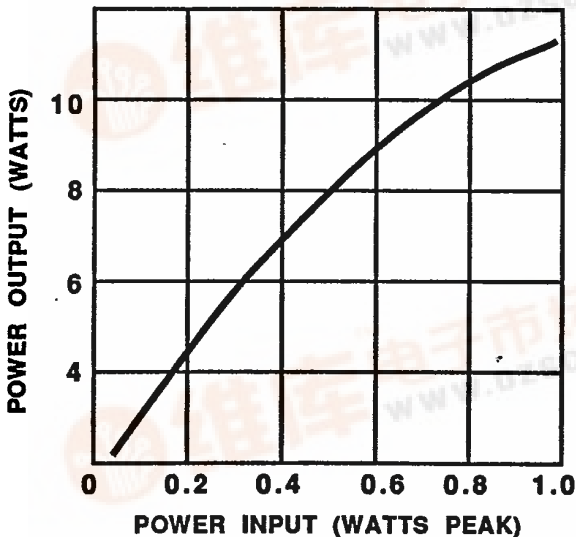


ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C Case Temperature	50 W
Maximum Voltage and Current	
BVces Collector to Emitter Voltage	60 V
BVebo Emitter to Base Voltage	4.0 V
Ic Collector Current	1.0 A
Maximum Temperatures	
Storage Temperature	-65 to +150°C
Operating Junction Temperature	+200°C

L1 : C	DIM	Millimeter	TOL	Inches	TOL
L2 : B	A	17.78	.76	.70	.03
L3 : E	B	5.84	.13	.230	.005
	C	45°	5°	45°	5°
	D	0.63R	.13	.025R	.005
	E	0.13	.02	.005	.001
	F	3.30 DIA	.13	.130 DIA	.005
	G	5.46	.13	.215	.005
	H	9.14	.13	.360	.005
	I	20.32	.13	.800	.005
	J	3.17	.13	.125	.005
	K	1.14	.13	.045	.010
	L	14.22	.13	.560	.005
	M	5.46	REF	.215	REF

POWER OUTPUT VS POWER INPUT



TYPICAL AMPLIFIER LINE UP

Vcc = 50V
Frequency Range = 960-1215 MHz



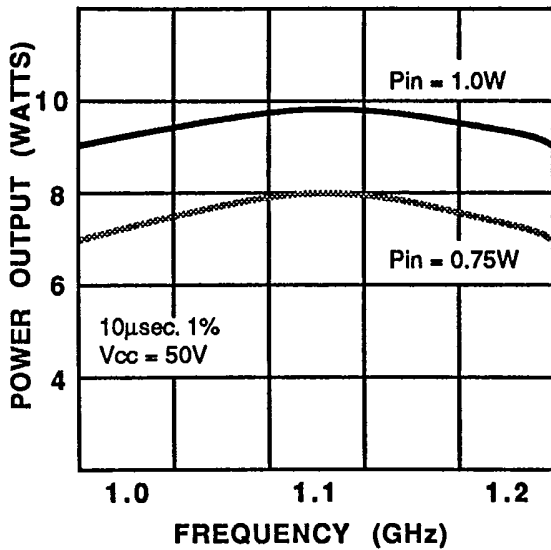
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ELECTRICAL CHARACTERISTICS¹

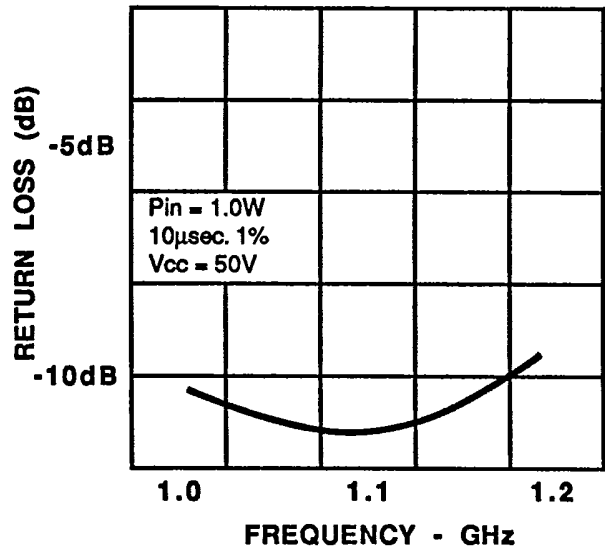
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Pout	Power Output	f = 960-1215MHz Vcc = 50V Pulse Width = 10 μsec Duty = 1%	7			Watts
Pin	Power Input				1	Watts
Pg	Power Gain		- 10			dB
ηc	Collector Efficiency	f = 1090MHz	25			%
VSWR	Load Mismatch Tolerance	At Rated Power Out			10:1	
BVebo	Breakdown Voltage (Emitter to Base)	Ic = 0A, Ie = 10mA	4			Volts
BVces	Breakdown Voltage (Collector to Emitter)	Vbe = 0V, Ic = 20mA	60			Volts
Cob	Capacitance-Collector to Base	Vcb = 50V, Ie = 0		6.5	8	pF
hfe	DC-Current Gain	Ic = 100mA, Vcc = 5V	10		120	
θjc	Thermal Resistance				3.5	°C/W

Note 1: Tc = +25°C

POWER OUTPUT VS FREQUENCY (TYPICAL)

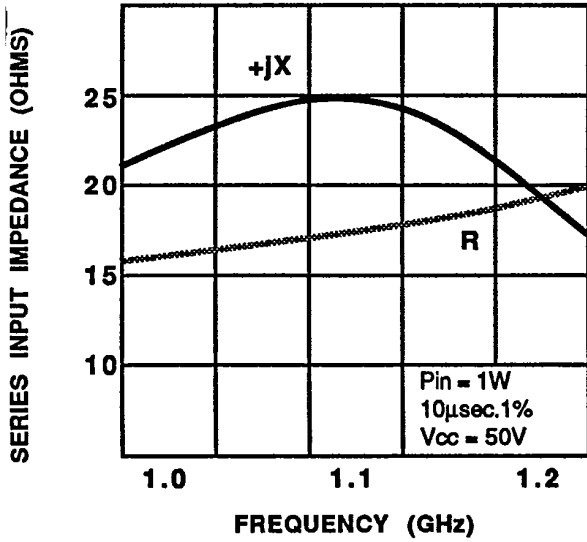


WIDEBAND CIRCUITY INPUT RETURN LOSS (TYPICAL)

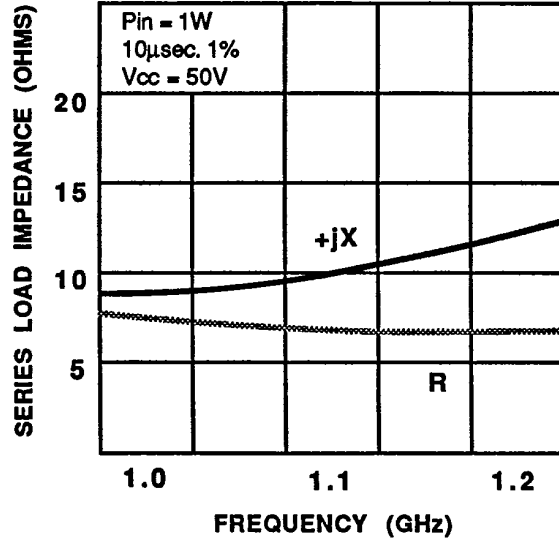


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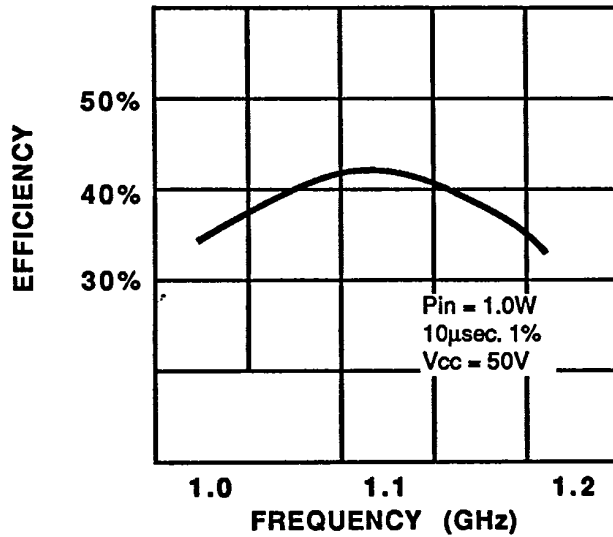
SERIES INPUT IMPEDANCE VS FREQUENCY (TYPICAL)



SERIES LOAD IMPEDANCE VS FREQUENCY (TYPICAL)

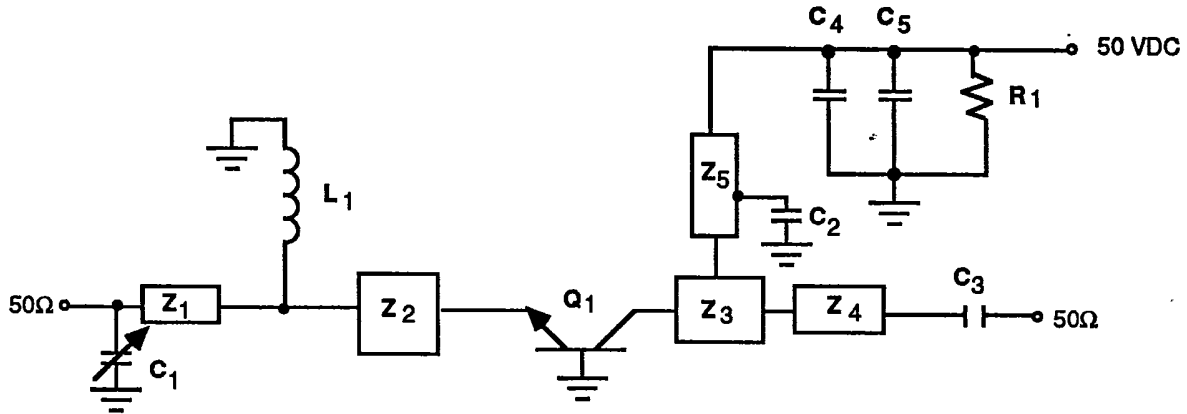


WIDEBAND CIRCUIT COLLECTOR EFFICIENCY VS FREQUENCY (TYPICAL)



0912-7-4

0912-7 CIRCUIT



PC Board Material .010" Dielectric Teflon Fiberglass

- Z₁ = 50Ω, .062^l = .027" w x 0.45" L
- Z₂ = 5Ω, .033^l = 0.43" w x 0.23" L
- Z₃ = 10Ω, .06^l = 0.20" w x 0.40" L
- Z₄ = 50Ω = .027" w x any convenient length
- Z₅ = 50Ω, .12^l = .027" w x 0.86" L
- C₁ = Capacitor, .35 - 3.5pF Piston Trimmer
- C₂ = Capacitor, 47pF ATC

- Note: Slide C₂ along Z₅ for best tuning.
- C₃ = Capacitor, 47 pF ATC
- C₄ = Capacitor, 100 pF ATC
- C₅ = Capacitor, 12μfd, 75 VDC, Electrolytic
- L₁ = Inductor, #18 wire, 1.5" long
- R₁ = Resistor, 10KΩ, 1/4 W
- Q₁ = Transistor, Acrian 0912-7

All electrical lengths taken at 1.09 GHz.