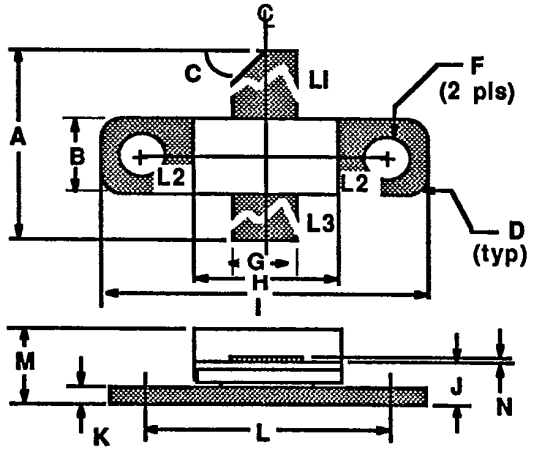
0912-7
7 WATTS - 50 VOLTS
960-1215 MHz
AVIONICS PULSED BIPOLAR

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

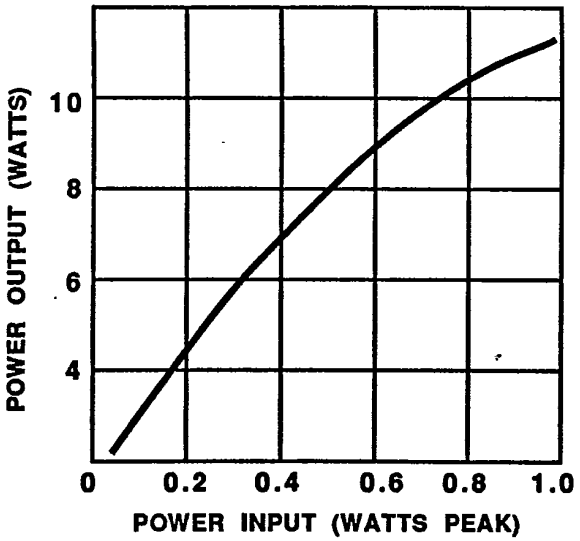
Maximum Power Dissipation @ 25°C Case Temperature		50 W
Maximum Voltage and Current		
BVces	Collector to Emitter Voltage	60 V
BVebo	Emitter to Base Voltage	4.0 V
Ic	Collector Current	1.0 A
Maximum Temperatures		
Storage Temperature		-65 to +150°C
Operating JunctionTemperature		+200 °C



L1 : C
L2 : B
L3 : E

DIM	Millimeter	TOL	Inches	TOL
A	17.78	.76	.70	.03
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

490 Race Street, San Jose, CA 95126 Phone (408) 294-4200, TWX (910) 338-2172
Ewenny Rd., Bridgend, Mid Glamorgan, CF31 3LQ, United Kingdom, Phone (0656) 68021

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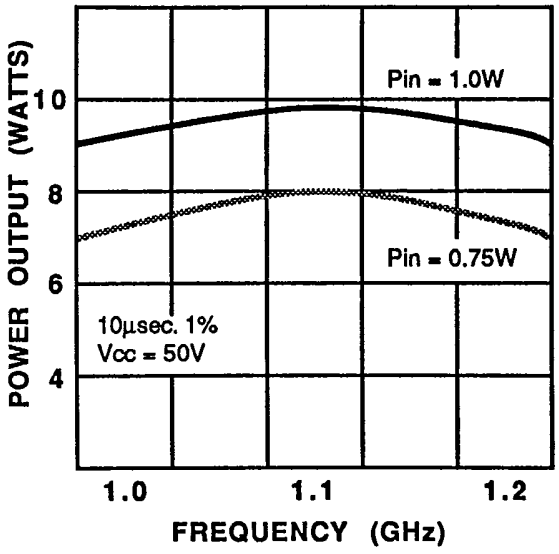
ELECTRICAL CHARACTERISTICS[1]

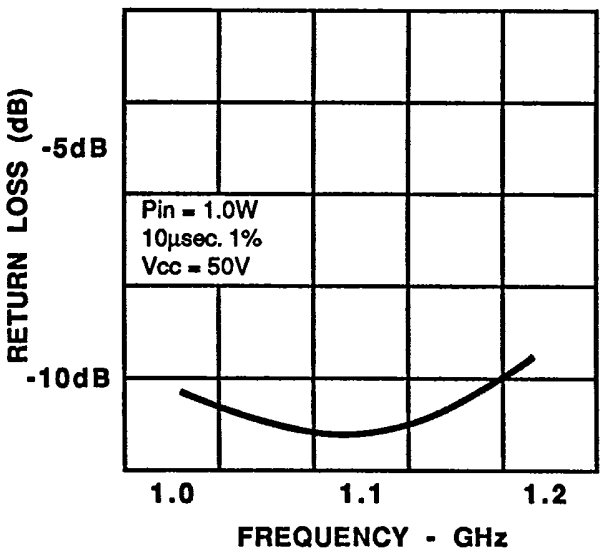
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Pout	Power Output	f= 960-1215MHz Vcc = 50V Pulse Width = 10 µsec Duty = 1%	7			Watts
Pin	Power Input				1	Watts
Pg	Power Gain		10			dB
ηc	Collector Efficiency	f = 1090MHz	25			%
VSWR	Load Mismatch Tolerance	At Rated Power Out			10:1	
BVebo	Breakdown 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
h_{fe}	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)



SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

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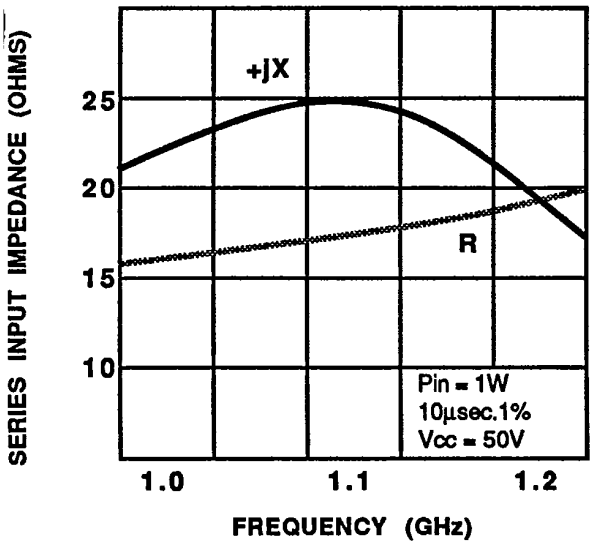
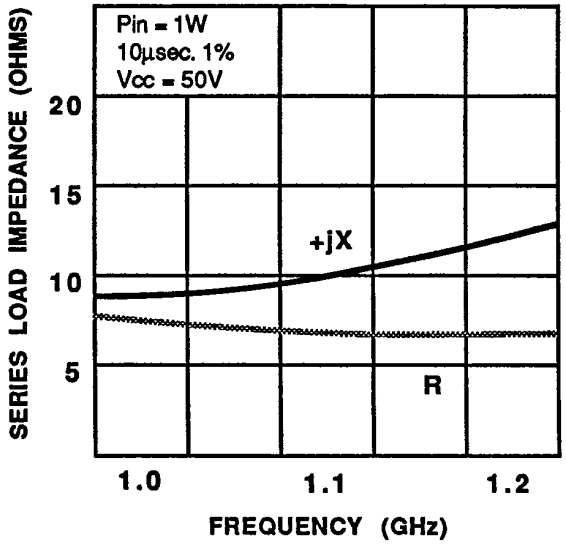
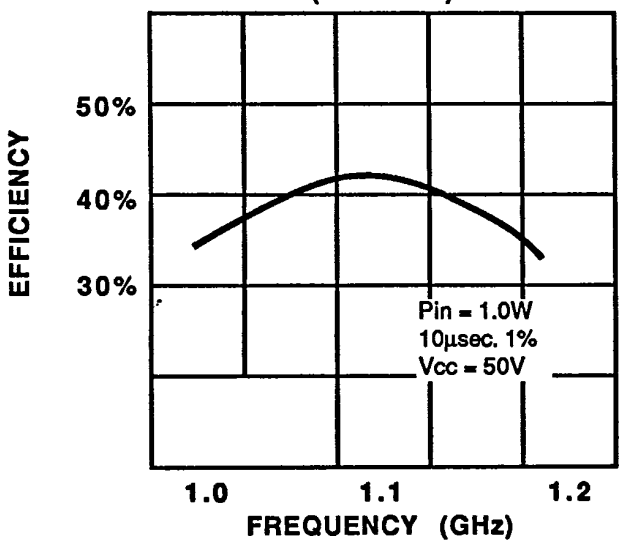
SERIES INPUT IMPEDANCE VS FREQUENCY (TYPICAL)



SERIES LOAD IMPEDANCE VS FREQUENCY (TYPICAL)



WIDEBAND CIRCUIT COLLECTER EFFICIENCY VS FREQUENCY (TYPICAL)



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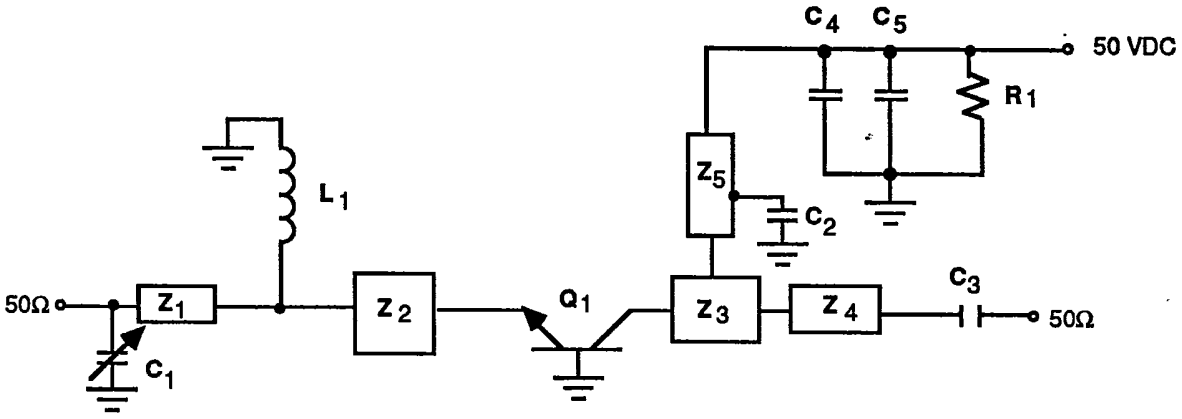
0912-7 CIRCUIT



PC Board Material .010" Dielectric Teflon Fiberglass

Z_1 = 50Ω, .062[1] = .027"w x 0.45"L
Z_2 = 5Ω, .033[1] = 0.43"w x 0.23"L
Z_3 = 10Ω, .06[1] = 0.20"w x 0.40"L
Z_4 = 50Ω = .027"w x any convenient length
Z_5 = 50Ω, .12[1] = .027"w x 0.86"L
C_1 = Capacitor, .35 - 3.5pF Piston Trimmer
C_2 = Capacitor, 47pF ATC

Note: Slide C2 along Z5 for best tuning.
C_3 = Capacitor, 47 pF ATC
C_4 = Capacitor, 100 pF ATC
C_5 = Capacitor, 12µfd, 75 VDC, Electrolytic
L_1 = Inductor, #18 wire, 1.5" long
R_1 = Resistor, 10KΩ, 1/4 W
Q_1 = Transistor, Acrian 0912-7

All electrical lengths taken at 1.09 GHz.