

GENERAL DESCRIPTION

The 0204-125 balanced transistor is designed to operate Class, A, AB or C over the 225-400MHz frequency range. It is an improved drop-in replacement for the BAL0204-125. Gold metallization and silicon diffused resistors provide ruggedness and reliability.

0204-125
125 WATTS - 28 VOLTS
225-400MHz

UHF COMMUNICATIONS

ABSOLUTE MAXIMUM RATINGS

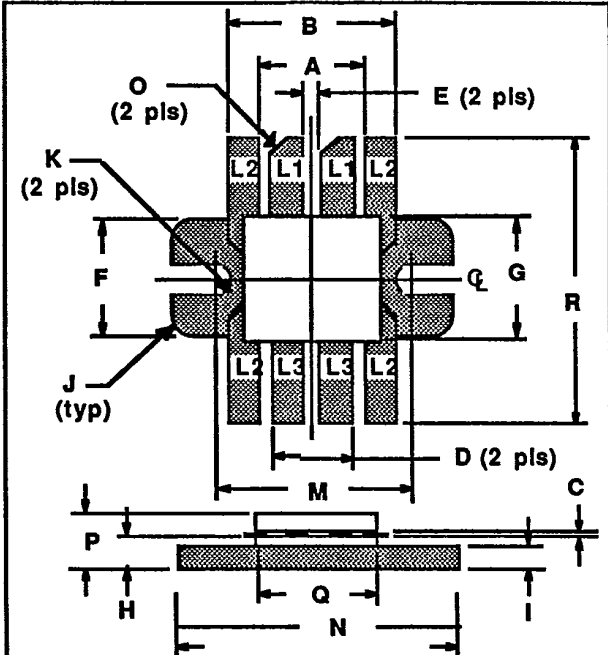
Maximum Power Dissipation @ 25 C Case Temperature 270 W

Maximum Voltage and Current

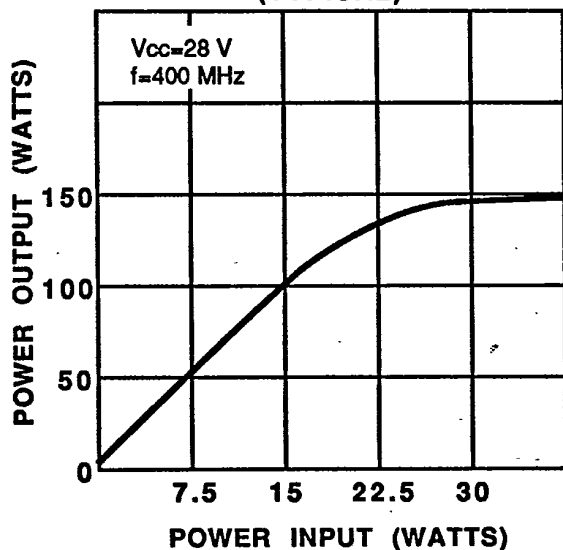
V_{Vces} Collector to Emitter Voltage 60 V
 V_{Vebo} Emitter to Base Voltage 4.0 V
 I_c Collector Current 16.0 A

Maximum Temperatures

Storage Temperature -65 to +150°C
 Operating Junction Temperature +200°C



POWER OUTPUT VS POWER INPUT (TYPICAL)



DIM	Millimeter	TOL	Inches	TOL
L1 : C				
L2 : E				
L3 : B				
A	9.14	.13	.360	.005
B	12.70	.13	.500	.005
C	0.13	.02	.005	.001
D	6.86	.13	.270	.005
E	0.76	.13	.030	.005
F	9.78	.13	.385	.005
G	10.16	.13	.400	.005
H	4.19	.13	.165	.005
I	3.17	.13	.125	.005
J	1.52 R	.13	.060 R	.005
K	1.65 R	.13	.065 R	.005
M	16.51	.13	.650	.005
N	22.86	.13	.900	.005
O	45°	5°	45°	5°
P	6.35	REF	.250	REF
Q	10.77	.13	.424	.005
R	19.05	.25	.750	.010

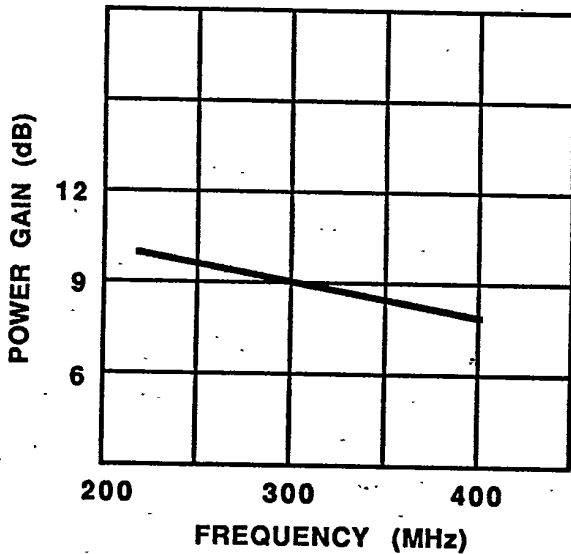
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ELECTRICAL CHARACTERISTICS

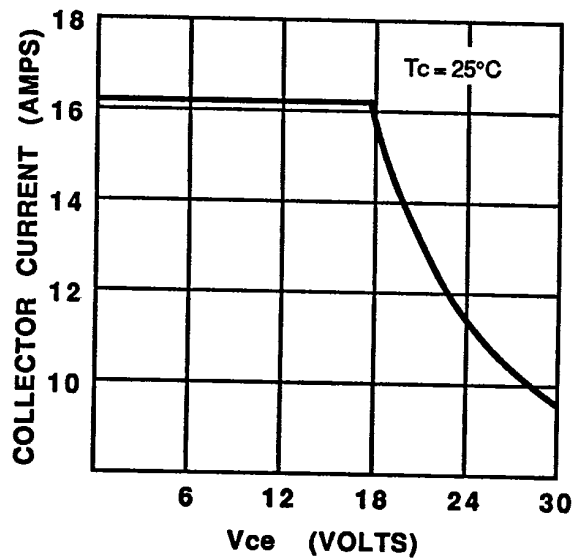
SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
P _{out} ¹	Power Output	f= 400MHz Class C	125			Watts
P _{in} ¹	Power Input	At Rated Power Out, V _{cc} = 28			25	Watts
P _g ¹	Power Gain		7			dB
V _{beo} ¹	Voltage - Emitter to Base	I _e = 10mA	4.0			Volts
V _{ces} ¹	Voltage - Collector to Emitter	I _c = 100mA	60			Volts
V _{ceo} ¹	Voltage - Collector to Emitter	I _c = 100mA	32			Volts
V _{SWR} ¹	Load Mismatch Tolerance	V _{cb} = 28V, P _o = 125W			5:1	
η _c	Collector Efficiency	At Rated Power Out		60		%
C _{cb} ¹	Capacitance-Collector to Base	V _{cb} = 28V, f= 1MHz		140		pF
h _{FE} ¹	DC-Current Gain	I _c = 1A, V _{ce} = 5V	20		100	
θ _{jc}	Thermal Resistance	T _C = 125° C			0.65	°C/W

NOTE 1: Per side.

POWER GAIN VS FREQUENCY (TYPICAL)



DC SAFE OPERATING AREA (TYPICAL)

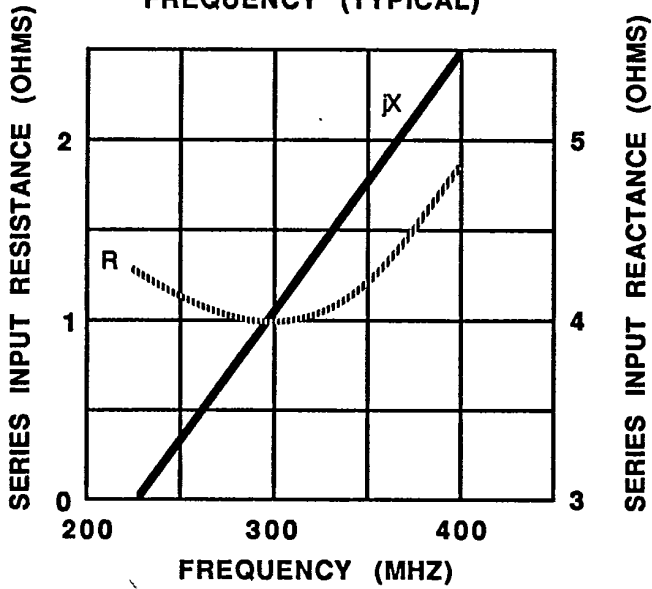


SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

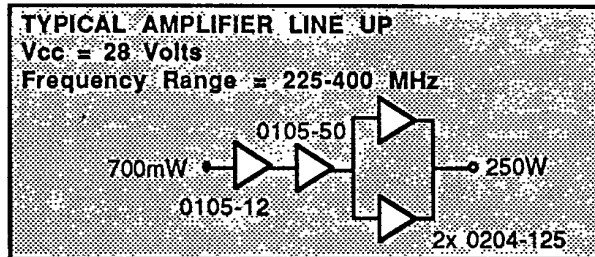
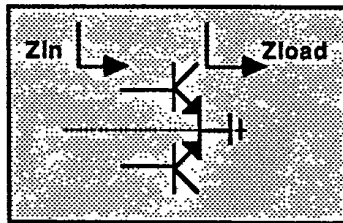
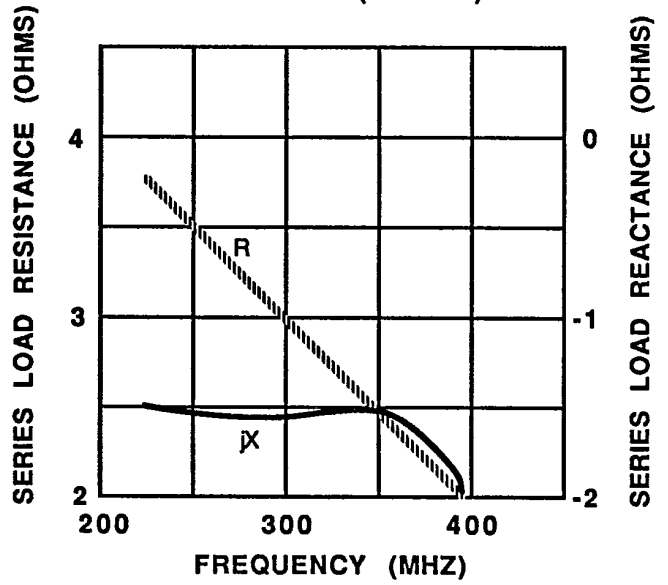
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SERIES INPUT IMPEDANCE VS FREQUENCY (TYPICAL)



SERIES LOAD IMPEDANCE VS FREQUENCY (TYPICAL)

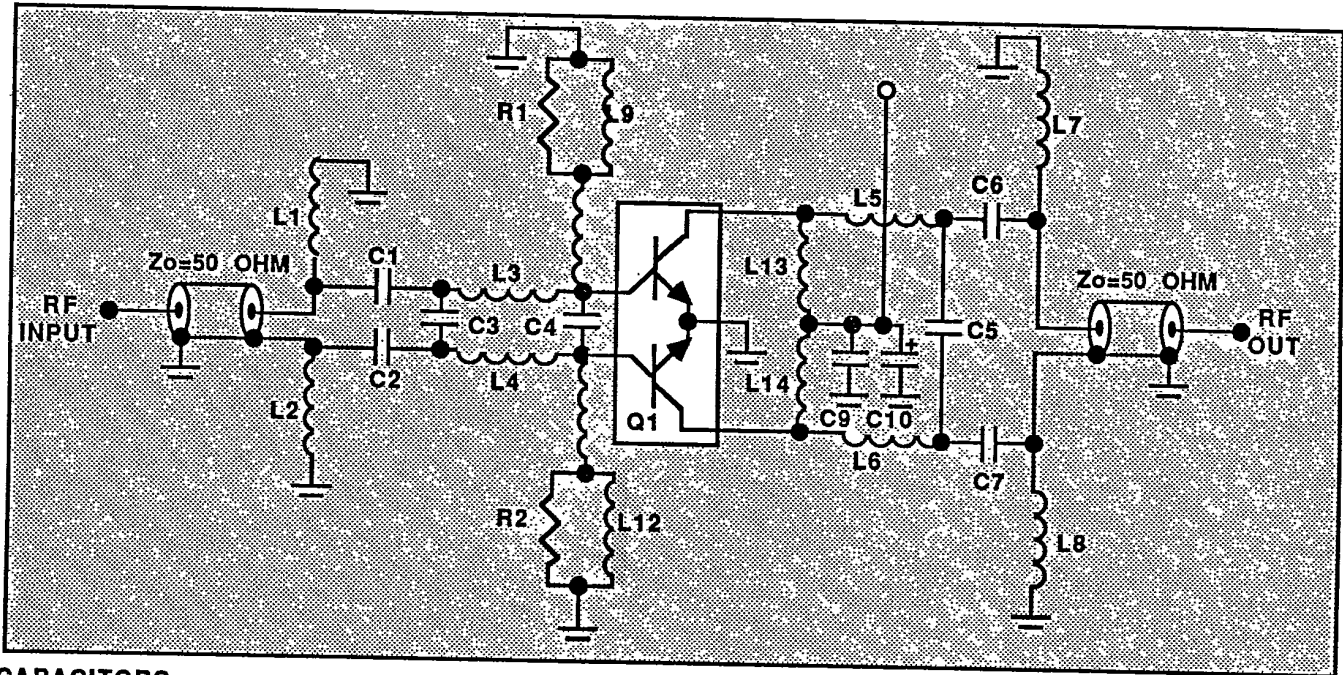


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**TEST CIRCUIT OF A 125 WATT, 225-400MHZ AMPLIFIER
WITH A 0204-125 BALANCED TRANSISTOR**

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CAPACITORS

- C1,C2 39 pF ceramic chip capacitor
- C3 33 pF ceramic chip capacitor
- C4 56 pF ceramic chip capacitor
- C5 18 pF ceramic chip capacitor
- C6,C7,C8 27 pF ceramic chip capacitor
- C9 0.1 μF ceramic capacitor
- C10 10 μF electrolytic capacitor

INDUCTORS

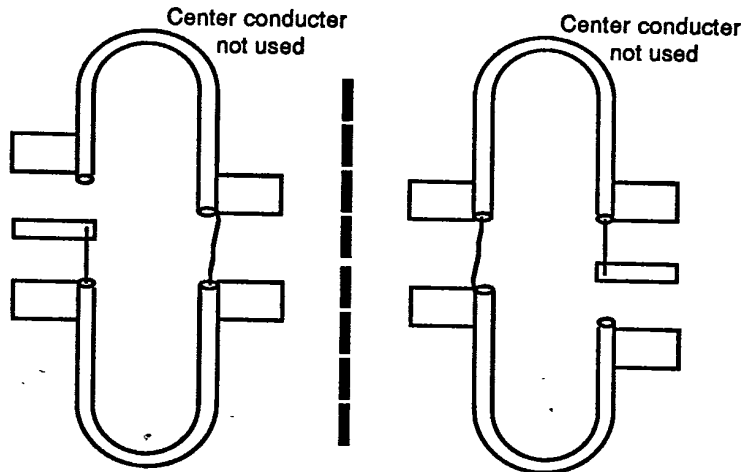
- L1,L2,L3,L4,L5,L6,L7,L8 printed on circuit board
- L9,L12 4.7 μH RF choke
- L10,L11,L13,L14 0.1 μH RF choke

RESISTORS

- R1,R2 10 OHM, 1/4 W

TRANSISTOR

- Q1 0204-125



Two pieces of 50 Ohm, 0.34" semirigid coax soldered to L1 and L2 on the input circuit board. The coax center conductor is not physically connected to L1 in the circuit..

Two pieces of 50 Ohm, 0.056" semirigid coax soldered to L7 and L8 on the input circuit board. The coax center conductor is not physically connected to L8 in the circuit.

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