

T-33-15



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M/A-COM PHI, INC.

PRELIMINARY DATA SHEET

PH04045-400H

## ABSOLUTE MAXIMUM RATINGS (\* PER SIDE)

PARAMETER	SYMBOL	RATING	UNITS
COLLECTOR BASE VOLTAGE	Vcbo	70.0	V
EMITTER BASE VOLTAGE	Vebo	3.5	V
COLLECTOR CURRENT	Ic	14.0 *	A
TOTAL DEVICE DISSIPATION	Pd	1167.0	W
JUNCTION TEMPERATURE	Tj	200.0	°C
STORAGE TEMPERATURE	Tstg	-65 TO +150	°C
THERMAL RESISTANCE	θjc	0.14	°C/W

## BIPOLAR NPN RF POWER TRANSISTOR

## FEATURES

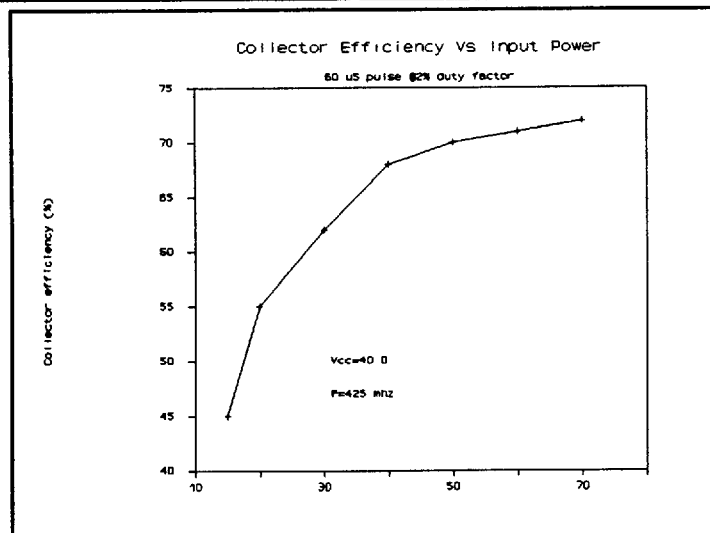
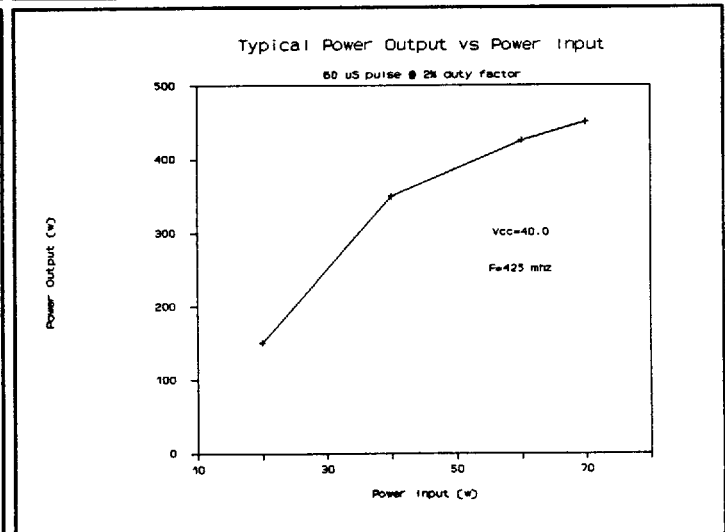
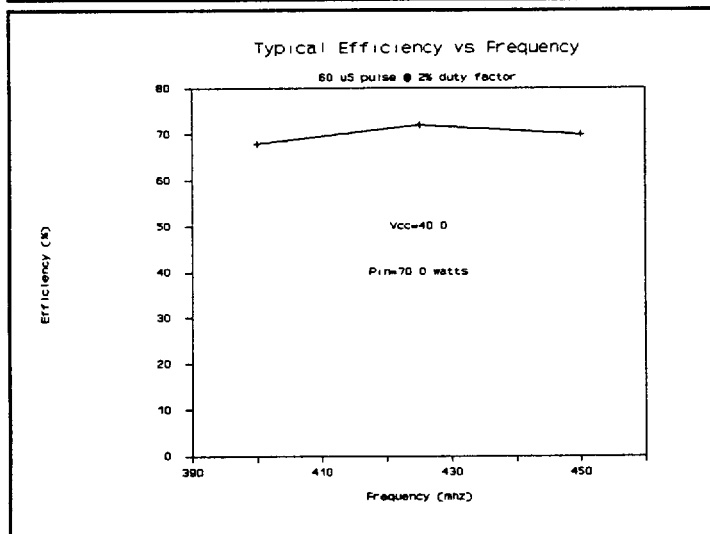
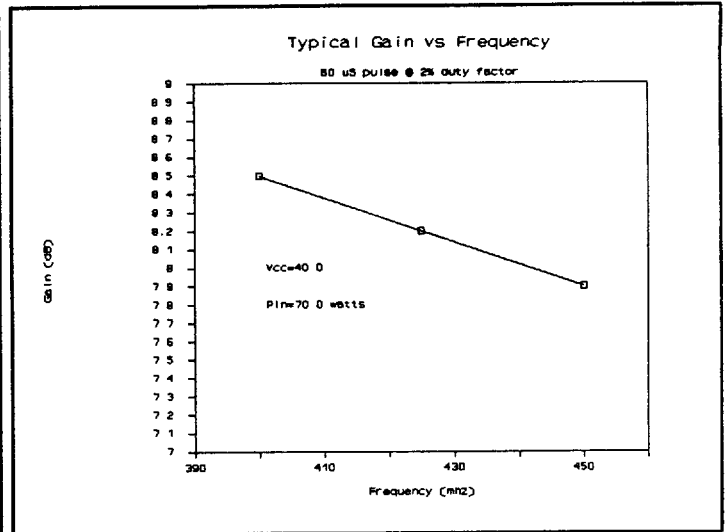
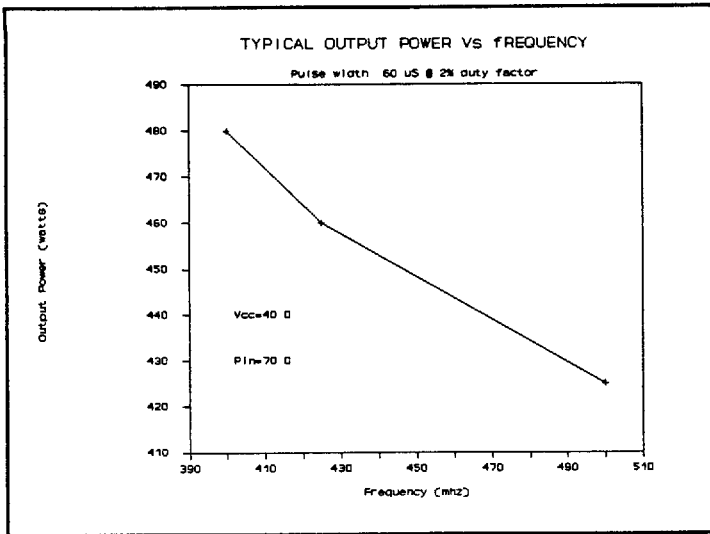
- \* GOLD METALLIZATION, EMITTER BALLASTED
- \* INTERNALLY MATCHED FOR BROADBAND OPERATION
- \* COMMON EMITTER CONFIGURATION
- \* HIGH PEAK POWER FOR UHF APPLICATIONS

## ELECTRICAL CHARACTERISTICS AT 25 °C (\* PER SIDE)

PARAMETER	SYMBOL	MIN.	MAX.	UNITS	TEST CONDITIONS
EMITTER BASE BREAKDOWN	BVebo	3.0		V	Ic=0, Ie=10.0ma *
COLLECTOR BASE BREAKDOWN	BVcbo	70.0		V	Ic=100.0 ma, Ie=0 *
COLLECTOR EMITTER BREAKDOWN	BVceo	25.0		V	Ic=100.0 ma, Ib=0 *
COLLECTOR EMITTER BREAKDOWN	BVces	70.0		V	Ic=100.0 ma, Vbe=0 *
COLLECTOR CUTOFF CURRENT	Ices		10.0	mA	Vce=40 Vbe=0 *
DC CURRENT GAIN	hFE	20.0	120.0	--	Vce=5.0, Ic=500.0ma *
OUTPUT CAPACITANCE	Ccob	70.0	135.0	pF	Vcb=28 F= 1.0 mhz *
POWER OUTPUT	Pout	380.0		watts	Vce=40 f=450.0, Pin=70.0 watts, 60 uSEC @2% df
POWER GAIN	Pg	7.3		dB	Vce=40 f=450.0, Pin=70.0 watts, 60 uSEC @2% df
COLLECTOR EFFICIENCY	η	60.0		%	Vce=40 f=450.0, Pin=70.0 watts, 60 uSEC @2% df
LOAD MISMATCH TOLERANCE	VSWR		5:1	--	Vce=40 f=450.0, Pin=70.0 watts, 60 uSEC @2% df

FORMERLY  
 POWER HYBRIDS, INC.

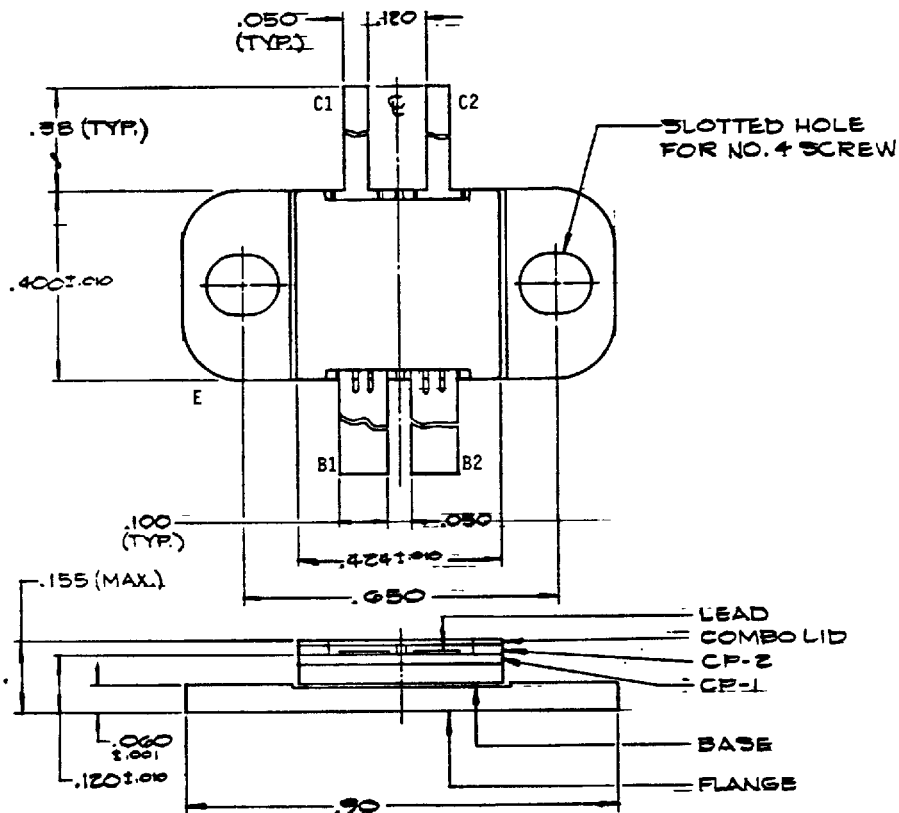




2

PACKAGE OUTLINE

(DIMENSIONS IN INCHES)



TYPICAL DEVICE IMPEDANCE

Freq mhz	Zin (OHMS)	Zout (OHMS)
400.0	3.6 +j5.0	4.1 -j0.60
425.0	3.9 -j0.50	4.4 +j0.50
450.0	4.3 +j3.1	4.8 +j1.60

Vcc= 40.0, Po= 400.0 watts, 60 uSec pulse, 2% duty factor

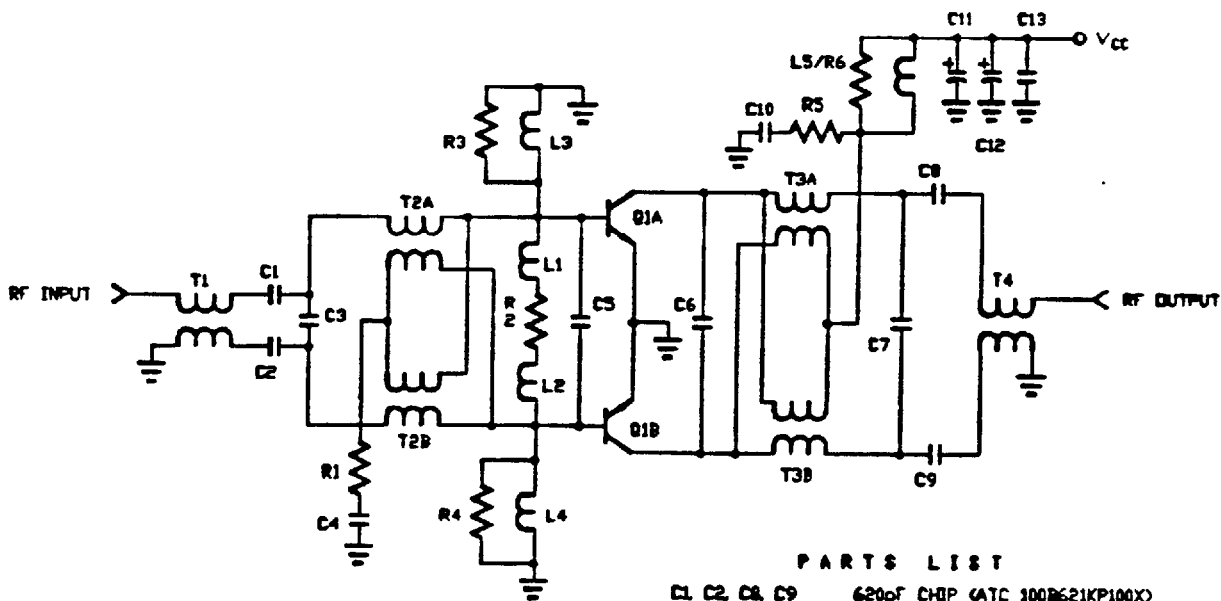
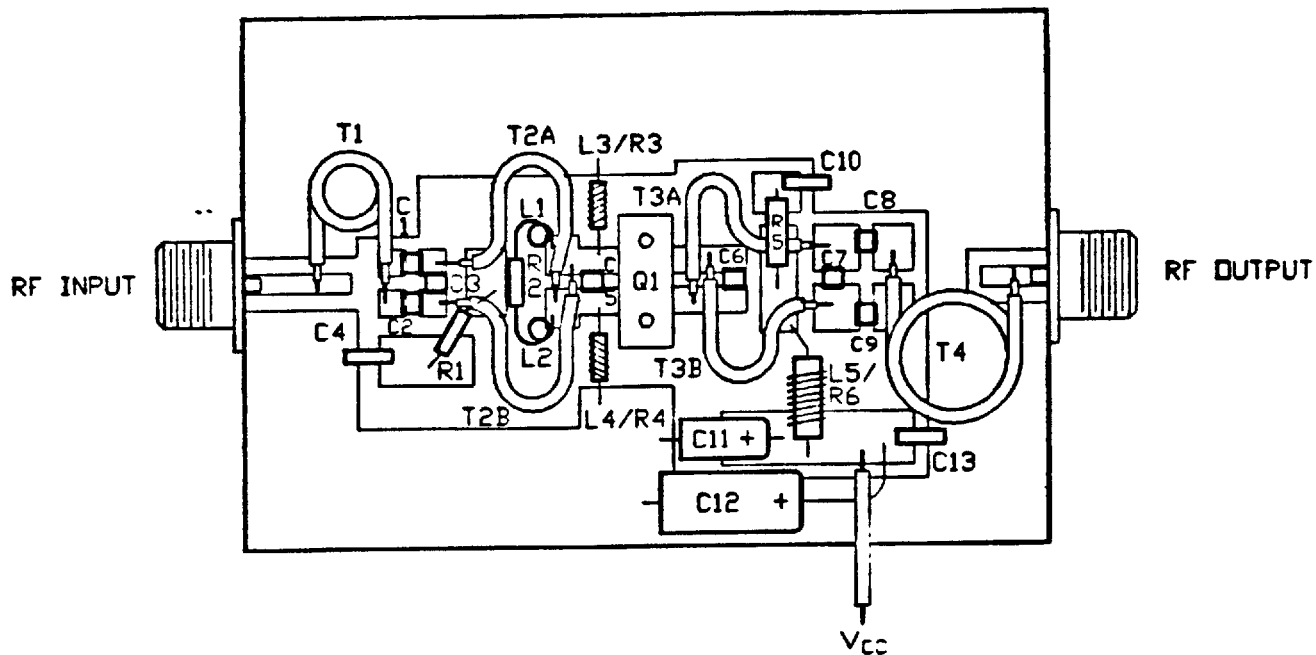
Zin is the series equivalent input impedance of the device from base to base.

Zout is the optimum series equivalent load impedance of the device from collector to collector.



PRELIMINARY DATA SHEET PH04045-400H

450 MHZ RF TEST FIXTURE



PARTS LIST

C2, C8, C9	620pF CHIP (ATC 100B621KP100X)
C3	2.3pF CHIP (ATC 100B3R3BP500X)
C4, C10, C13	30uF CERAMIC (CK068X104K)
C5	47pF CHIP (ATC 100B470JP500X)
C6	33pF CHIP (ATC 100B330JP500X)
C7	7.5pF CHIP (ATC 100B7R5BP500X)
C11	10uF 75V TANTALUM
C12	220uF 63V ALUMINUM
R1	4.7 OHM 1/4 W
R2	15 OHM 1/4 W
R3	4.7 OHM 1/2 W
L1, L2	3 TURNS OF #2 LEADS ON 10" ID
L3/R3, L4/R4	5 TURNS OF NO. 28 AVG ON 15 OHM 1/4 W
L5/R6	5 TURNS OF NO. 26 AVG ON 7.5 OHM 1 W
T1	50 OHM COAX (0.050" O.D.) 2.50"
T2A, T2B	25 OHM COAX (0.050" O.D.) 1.50"
T3A, T3B	25 OHM COAX (0.050" O.D.) 1.00"
T4	50 OHM COAX (0.085" O.D.) 2.50"