

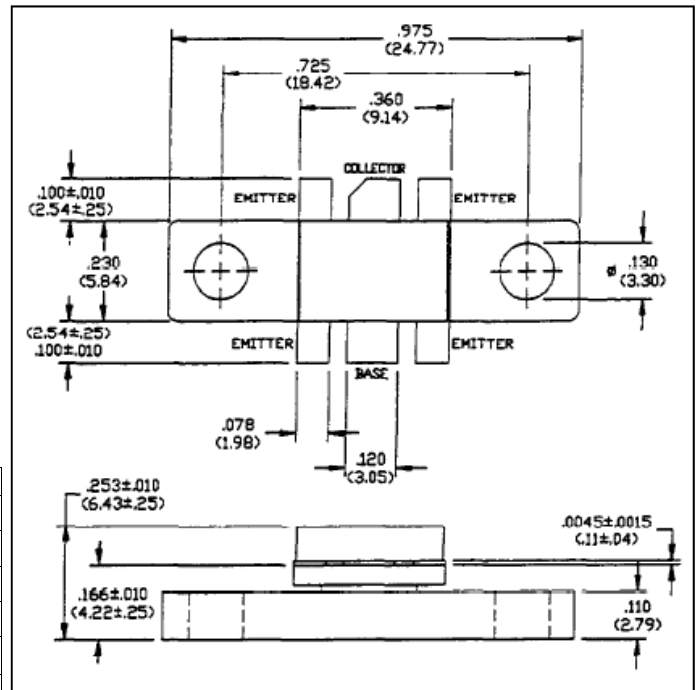
Wireless Bipolar Power Transistor 35W, 850-960MHz, 24V

M/A-COM Products
Released - Rev. 07.07

Features

- Designed for linear amplifier applications
- Class AB: -30 dBc typ. 3rd IMD at 15 W PEP
- Class AB: +53 dBc typ. 3rd order intercept point
- Common emitter configuration
- Internal input impedance matching
- Diffused emitter ballasting

Outline Drawing¹



ABSOLUTE MAXIMUM RATING AT 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	1.0	A
Total Power Dissipation	P_{TOT}	116	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to + 150	°C
Thermal Resistance	θ_{JC}	1.5	°C/W

Notes: (unless otherwise specified)

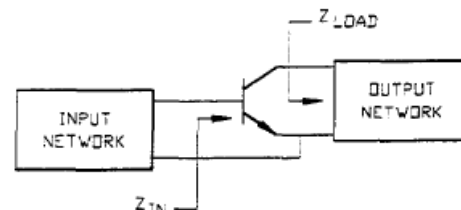
1. Tolerances are: inches $\pm .005$ " (millimeters ± 0.13 mm)

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	60	-	V	$I_C = 20$ mA
Collector-Emitter Leakage Current	I_{CES}	-	2.0	mA	$V_{CE} = 24.0$ V
Collector-Emitter Breakdown Voltage	BV_{CEO}	24	-	V	$I_C = 40$ mA
Emitter-Base Breakdown Voltage	BV_{EBO}	3.0	-	V	$I_B = 20$ mA
DC Forward Current Gain	h_{FE}	15	120	-	$V_{CE} = 5.0$ V, $I_C = 1.0$ A
Power Gain	G_p	10	-	dB	$V_{CC} = 24$ V, $I_{CQ} = 200$ mA, $P_{out} = 35$ W, $F = 900$ MHz, $\Delta F = 100$ kHz
Collector Efficiency	η_C	55	-	%	$V_{CC} = 24$ V, $I_{CQ} = 200$ mA, $P_{out} = 35$ W, $F = 900$ MHz, $\Delta F = 100$ kHz
Input Return Loss	RL	10	-	db	$V_{CC} = 24$ V, $I_{CQ} = 200$ mA, $P_{out} = 35$ W, $F = 900$ MHz, $\Delta F = 100$ kHz
Load Mismatch Tolerance	VSWR-T	-	3.0:1	-	$V_{CC} = 24$ V, $I_{CQ} = 200$ mA, $P_{out} = 35$ W, $F = 900$ MHz, $\Delta F = 100$ kHz
3rd Order IMD	IMD ₃	-	-30	dBc	$V_{CC} = 24$ V, $I_{CQ} = 200$ mA, $P_{out} = 35$ W, $F = 900$ MHz, $\Delta F = 100$ kHz

TYPICAL OPTIMUM DEVICE IMPEDANCES

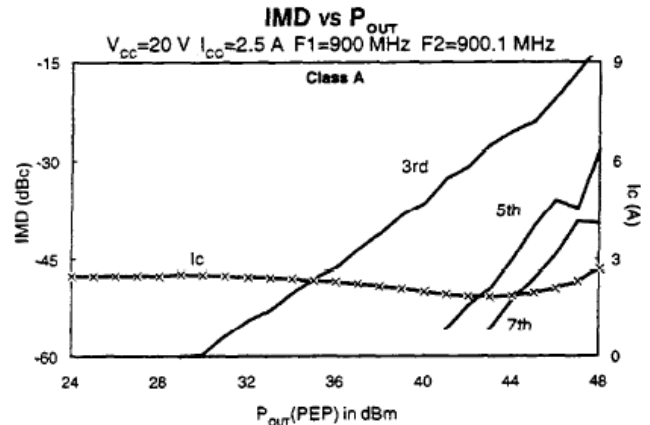
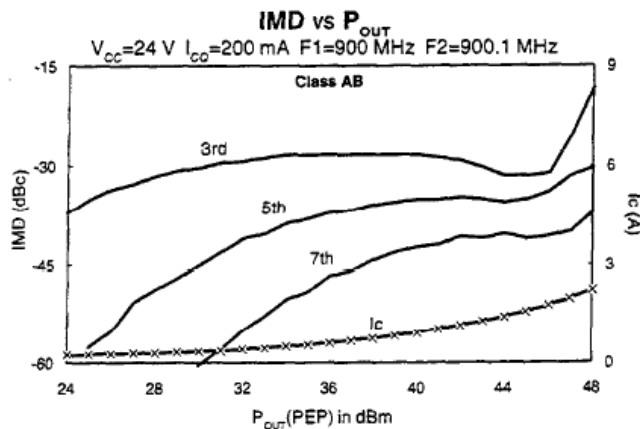
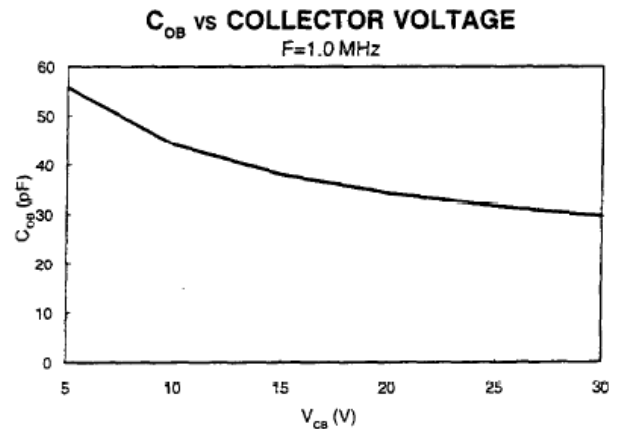
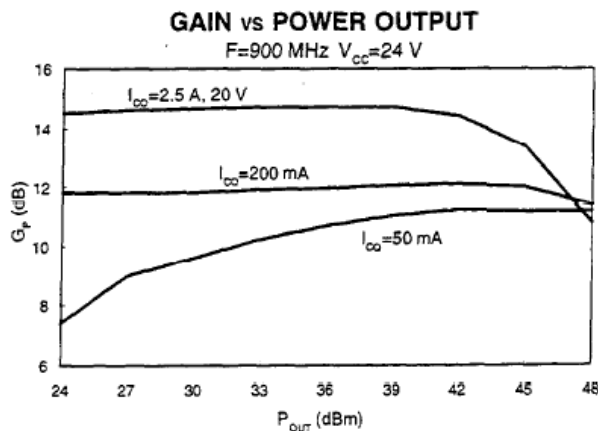
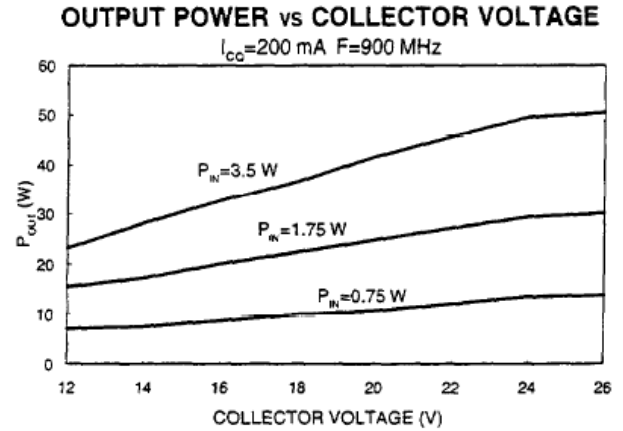
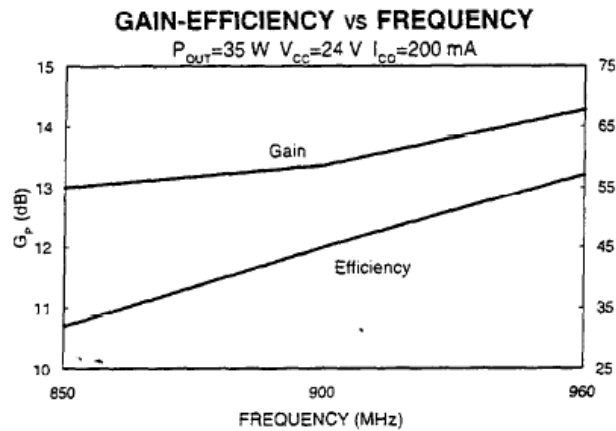
F (MHz)	$Z_{IN} (\Omega)$	$Z_{LOAD} (\Omega)$
800	$1.0 - j3.7$	$2.1 - j0.9$
850	$1.3 - j4.0$	$1.6 - j0.7$
900	$1.9 - j4.3$	$1.6 - j0.4$
960	$3.0 - j2.7$	$1.7 - j0.1$



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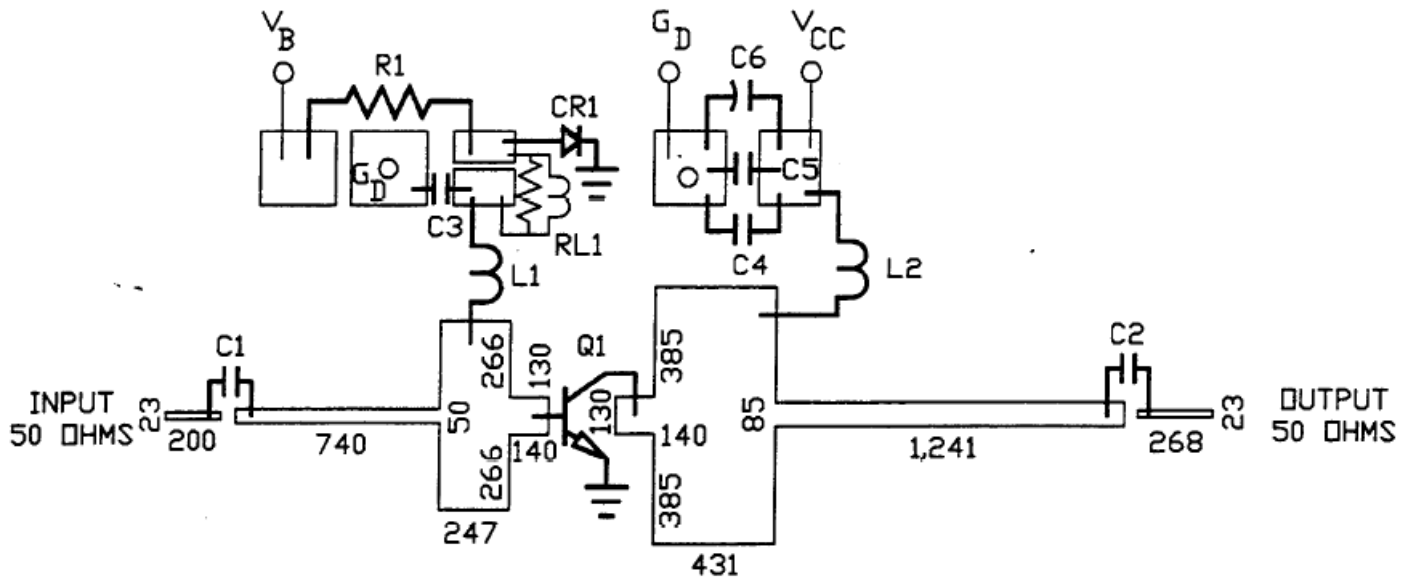
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ARTWORK DIMENSIONS IN MILS

PARTS LIST

C1	C2	C3	C4	100 pF	ATC	SIZE B
C5				5000 pF		
C6				50 uF	50 VOLTS	
CR1				1N4245	DIODE	
L1	L2			10T/NO.	20 AWG	DN 1/8" DIAMETER
Q1				PH0810-35		
R1				5 OHMS	1/4 WATT	
RL1				10T/NO.	22 AWG	DN 3.1 OHM 1/4 WATT
BOARD TYPE				ROGERS 6010.5	.025" THICK,	$E_R = 10.5$