

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

M/A-COM Products Released - Rev. 07.07

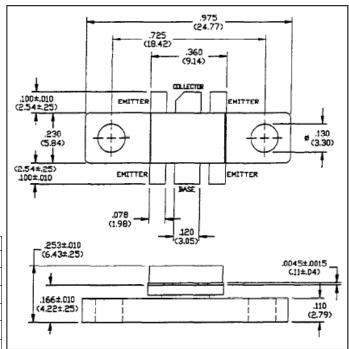
#### **Features**

- 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

#### **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	٧
Collector Current	Ic	1.0	Α
Total Power Dissipation	P <sub>TOT</sub>	116	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	T <sub>STG</sub>	-55 to + 150	°C
Thermal Resistance	$\theta_{JC}$	1.5	°C/W

## Outline Drawing<sup>1</sup>



Notes: (unless otherwise specified)

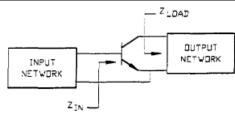
1. Tolerances are: inches ± .005" (millimeters ± 0.13mm)

#### **ELECTRICAL SPECIFICATIONS AT 25°C**

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

### TYPICAL OPTIMUM DEVICE IMPEDANCES

F (MHz)	Z <sub>IN</sub> (Ω)	Z <sub>LOAD</sub> (Ω)
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



PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

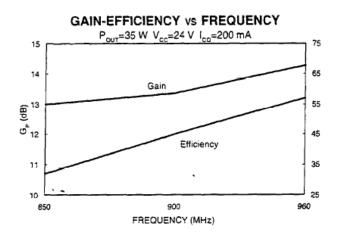
- North America Tel: 800.366.2266 / Fax: 978.366.2266
- Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300
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  Visit www.macomtech.com for additional data sheets and product information.

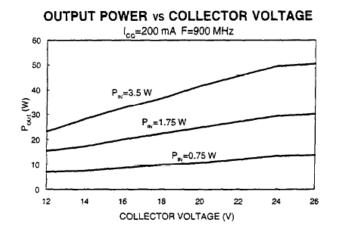


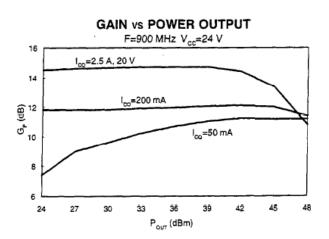
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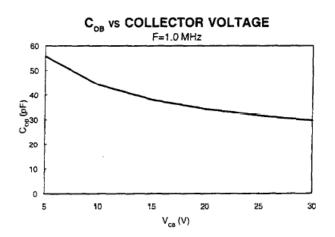
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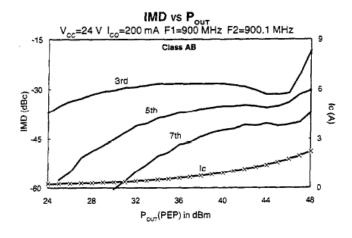
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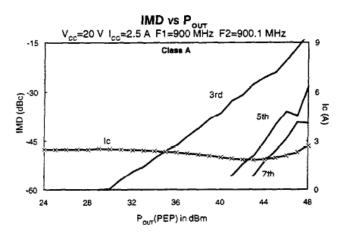










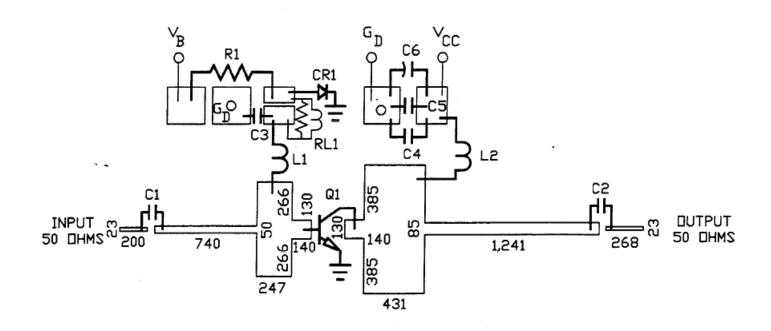


- ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology
- PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.
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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/ND, 20 AWG DN 1/8' DIAMETER

Q1 PH0810-35

R1 5 DHMS 1/4 WATT

RL1 10T/ND. 22 AWG DN 3.1 DHM 1/4 WATT BOARD TYPE ROGERS 6010.5 .025° THICK,  $E_R = 10.5$ 

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