

The RF Line UHF Linear Power Transistor

The TP3024B is a balanced transistor designed specifically for use in cellular radio systems. This device permits the design of a Class AB push-pull, high gain, broadband amplifier having a high degree of linearity without the need for complicated biasing circuitry.

- Specified 26 Volts, 960 MHz Characteristics:
 - Output Power = 35.5 W
 - Minimum Gain = 7.5 dB
 - $I_{Q\text{total}} = 150 \text{ mA}$
- Push-Pull Configuration

TP3024B

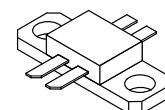
35.5 W, 960 MHz
UHF LINEAR POWER
TRANSISTOR

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{Stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case (1) ($T_C = 75^\circ\text{C}$)	$R_{\theta\text{JC}}$	3.0	°C/W



CASE 395B-01, STYLE 1

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 10 \text{ mA}$, $R_{BE} = 75 \text{ Ohms}$)	$V_{(BR)CER}$	40	—	—	Vdc
Collector-Emitter Leakage ($V_{CE} = 26 \text{ V}$, $R_{BE} = 75 \text{ Ohms}$)	I_{CER}	—	—	5.0	mA
Emitter-Base Breakdown Voltage ($I_C = 5.0 \text{ mA}$, $I_B = 0$)	$V_{(BR)EBO}$	3.5	—	—	Vdc
Emitter-Base Leakage ($V_{BE} = 2.5 \text{ V}$)	I_{EBO}	—	—	1.0	mA

ON CHARACTERISTICS (2)

DC Current Gain ($I_C = 500 \text{ mA}$, $V_{CE} = 10 \text{ V}$)	h_{FE}	15	—	100	—
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DYNAMIC CHARACTERISTICS (1)

Output Capacitance ($V_{CB} = 24 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	C_{ob}	—	17	25	pF
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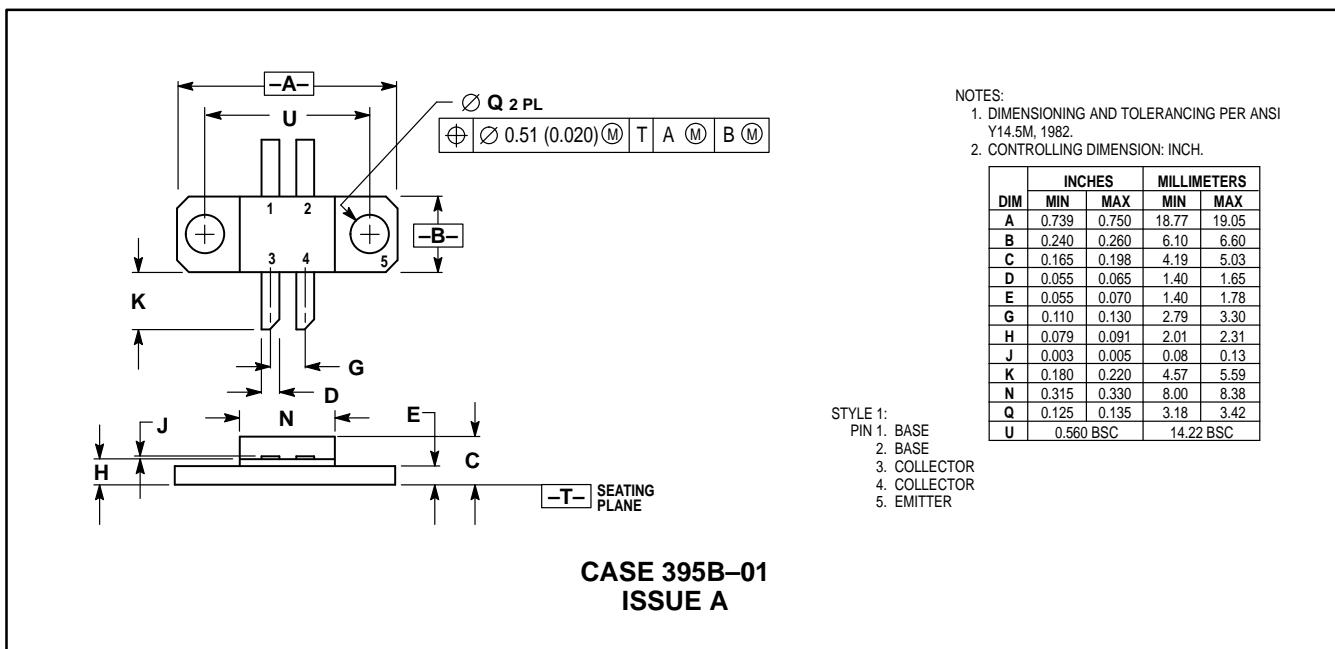
FUNCTIONAL TESTS (3)

Common-Emitter Amplifier Power Gain ($V_{CE} = 26 \text{ V}$, $P_{out} = 35.5 \text{ W}$, $f = 960 \text{ MHz}$, $I_{Q\text{total}} = 150 \text{ mA}$)	G_{PE}	7.5	—	—	dB
Collector Efficiency ($V_{CE} = 26 \text{ V}$, $P_{out} = 35.5 \text{ W}$, $f = 960 \text{ MHz}$, $I_{Q\text{total}} = 150 \text{ mA}$)	η_C	45	—	—	%

NOTE:

- Thermal resistance is determined under specified RF operating condition.
- Each transistor chip measured separately.
- Both transistor chips operating in push-pull amplifier.

PACKAGE DIMENSIONS



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TP3024B/D



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