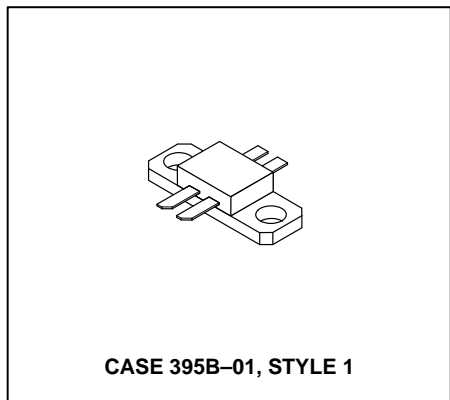
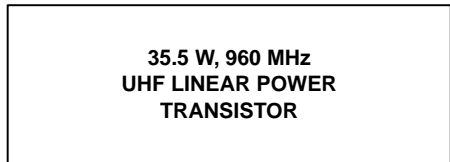


## The RF Line

# 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
  - $I_{Qtotal} = 150$  mA
- Push-Pull Configuration



### 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) ( $T_C = 75^\circ\text{C}$ )	$R_{\theta JC}$	3.0	°C/W

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

### ON CHARACTERISTICS (2)

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

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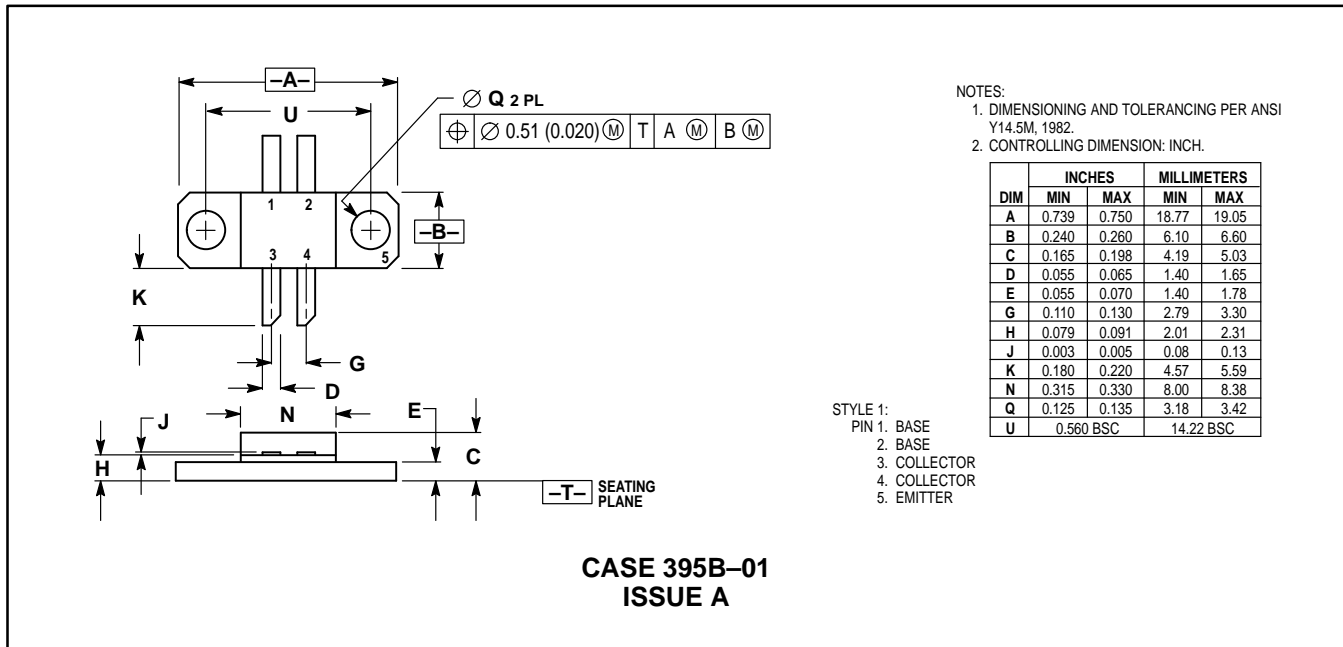
### FUNCTIONAL TESTS (3)

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