

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

TP3024B

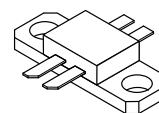
**35.5 W, 960 MHz
UHF LINEAR POWER
TRANSISTOR**

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) ($T_C = 75^\circ\text{C}$)	$R_{\theta JC}$	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 ($I_C = 10$ 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 ($I_C = 5.0$ mA, $I_C = 0$)	$V_{(BR)EBO}$	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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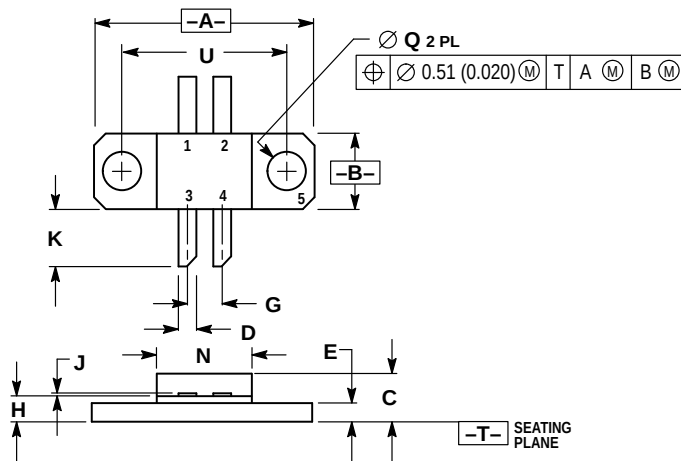
FUNCTIONAL TESTS (3)

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)	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



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.739	0.750	18.77	19.05
B	0.240	0.260	6.10	6.60
C	0.165	0.198	4.19	5.03
D	0.055	0.065	1.40	1.65
E	0.055	0.070	1.40	1.78
G	0.110	0.130	2.79	3.30
H	0.079	0.091	2.01	2.31
J	0.003	0.005	0.08	0.13
K	0.180	0.220	4.57	5.59
N	0.315	0.330	8.00	8.38
Q	0.125	0.135	3.18	3.42
U	0.560 BSC		14.22 BSC	

- STYLE 1:
1. BASE
 2. BASE
 3. COLLECTOR
 4. COLLECTOR
 5. EMITTER

CASE 395B-01 ISSUE A

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TP3024B/D

