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 IQ_{total} = 150 mA
- Push–Pull Configuration



35.5 W, 960 MHz UHF LINEAR POWER TRANSISTOR

CASE 395B-01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol Value		Unit
Emitter-Base Voltage	V _{EBO}	4.0	Vdc
Operating Junction Temperature	ТJ	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°C)	R _{θJC}	3.0	°C/W

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

Characteristic	Symbol	Min	Тур	Max	Unit
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)	ICER	—	—	5.0	mA
Emitter–Base Breakdown Voltage ($I_C = 5.0 \text{ mAdc}, I_C = 0$)	V _{(BR)EBO}	3.5	—	-	Vdc
Emitter–Base Leakage (V _{BE} = 2.5 V)	IEBO	_	—	1.0	mA
ON CHARACTERISTICS (2)					
DC Current Gain (I _C = 500 mA, V_{CE} = 10 V)	hFE	15	—	100	_
DYNAMIC CHARACTERISTICS (1)					
Output Capacitance ($V_{CB} = 24 V$, $I_E = 0$, f = 1.0 MHz)	C _{ob}	_	17	25	pF
FUNCTIONAL TESTS (3)					
Common–Emitter Amplifier Power Gain (V _{CE} = 26 V, P _{out} = 35.5 W, f = 960 MHz, ^I Q _{total} = 150 mA)	G _{PE}	7.5	_	_	dB
Collector Efficiency (V _{CE} = 26 V, P _{out} = 35.5 W, f = 960 MHz, ^I Q _{total} = 150 mA)	η _c	45	_	-	%

NOTE:

1. Thermal resistance is determined under specified RF operating condition.

2. Each transistor chip measured separately.

3. Both transistor chips operating in push-pull amplifier.



PACKAGE DIMENSIONS



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