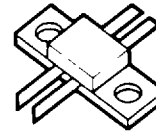


T-33-11

**MOTOROLA**  
**SEMICONDUCTOR**  
**TECHNICAL DATA**
*Advance Information***The RF Line****UHF Linear Power Transistor****TP3024A**
**35.5 W — 960 MHz**  
**UHF LINEAR POWER**  
**TRANSISTOR**  
**NPN SILICON**

**CASE 395-01, STYLE 1**  
**(BMA2)**

The TP3024A 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.

- 960 MHz
- 35.5 W —  $P_{out}$
- 26 V —  $V_{CC}$
- 7.5 dB Gain
- Push-Pull Configuration

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Emitter-Base Voltage	$V_{EBO}$	4	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 ( $T_C = 75^\circ\text{C}$ )	$R_{\theta JC}$	3	°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 (Note 1)**

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	mA
Emitter-Base Breakdown Voltage ( $I_C = 5\text{ mA}$ )	$V_{(BR)EBO}$	4	—	—	Vdc
Emitter-Base Leakage ( $V_{BE} = 2.5\text{ V}$ )	$I_{EBO}$	—	—	1	mA

**ON CHARACTERISTICS (Note 1)**

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

Output Capacitance ( $V_{CB} = 24\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$ )	$C_{ob}$	—	17	25	pF
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**FUNCTIONAL TESTS (Note 2)**

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

Notes 1 Each transistor chip measured separately

2 Both transistor chips operating in push-pull amplifier

This document contains information on a new product. Specifications and information herein are subject to change without notice.