

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

Advance Information

The RF Line

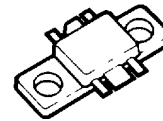
UHF Power Transistor

... designed for common-emitter operation in the 900 MHz mobile radio band. Use of gold metallization and silicon diffused ballast resistors results in a medium power output/driver transistor with state-of-the-art ruggedness and reliability.

- 960 MHz
- 15 W — P_{out}
- 26 V — V_{CC}
- High Gain — 8.5 dB, Class AB

TP3022A

15 W — 960 MHz
UHF POWER
TRANSISTOR
NPN SILICON

2


CASE 319-06, STYLE 2
(EB)

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 ($T_C = 70^\circ\text{C}$)	$R_{\theta JC}$	6	°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

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

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

Common-Emitter Amplifier Power Gain ($V_{CE} = 26\text{ V}$, $P_{out} = 15\text{ W}$, $f = 960\text{ MHz}$, $I_Q = 50\text{ mA}$)	G_{PE}	8.5	—	—	dB
Collector Efficiency ($V_{CE} = 26\text{ V}$, $P_{out} = 15\text{ W}$, $f = 960\text{ MHz}$, $I_Q = 50\text{ mA}$)	η_c	45	—	—	%

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

MOTOROLA RF DEVICE DATA

2-1193