T-33-07

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

TP3022A

Advance Information

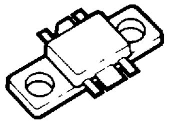
The RF Line

UHF Power Transistor

15 W — 960 MHz
UHF POWER
TRANSISTOR
NPN SILICON

. . . 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



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°C)	$R_{\theta JC}$	6	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 1)					
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	mA
Emitter-Base Breakdown Voltage (I_C = 5 mAdc)	$V_{(BR)EBO}$	4	—	—	Vdc
Emitter-Base Leakage (V_{BE} = 2.5 V)	I_{EBO}	—	—	1	mA
ON CHARACTERISTICS					
DC Current Gain (I_C = 500 mA, V_{CE} = 10 V)	h_{FE}	15	—	100	—
DYNAMIC CHARACTERISTICS					
Output Capacitance (V_{CB} = 24 V, I_E = 0, f = 1 MHz)	C_{ob}	—	17	25	pF
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain (V_{CE} = 26 V, P_{out} = 15 W, f = 960 MHz, I_Q = 50 mA)	G_{PE}	8.5	—	—	dB
Collector Efficiency (V_{CE} = 26 V, P_{out} = 15 W, f = 960 MHz, I_Q = 50 mA)	η_c	45	—	—	%

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