

The RF Line UHF Power Transistor

The TP3022B is 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.

- Specified 26 Volts, 960 MHz Characteristics:
Output Power = 15 Watts
Minimum Gain = 8.5 dB
 $I_Q = 50 \text{ mA}$
- Class AB Operation

TP3022B

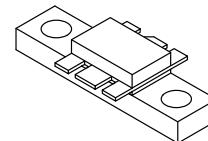
15 W, 960 MHz
NPN SILICON
UHF POWER
TRANSISTOR

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	29 0.167	Vdc
Operating Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case (1)	$R_{\theta\text{JC}}$	6.0	$^\circ\text{C/W}$



CASE 319-07, STYLE 2

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS (1)					
Collector-Emitter Breakdown Voltage ($I_C = 10 \text{ mA}$, $R_{BE} = 75 \text{ Ohms}$)	$V_{(\text{BR})\text{CER}}$	40	—	—	Vdc
Collector-Emitter Leakage ($V_{CE} = 26 \text{ V}$, $R_{BE} = 75 \text{ Ohms}$)	I_{CER}	—	—	5.0	mA
Emitter-Base Breakdown Voltage ($I_C = 5.0 \text{ mA}$)	$V_{(\text{BR})\text{EBO}}$	3.5	—	—	Vdc
Emitter-Base Leakage ($V_{BE} = 2.5 \text{ V}$)	I_{EBO}	—	—	1.0	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 ($V_{CB} = 24 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$)	C_{ob}	—	17	25	pF
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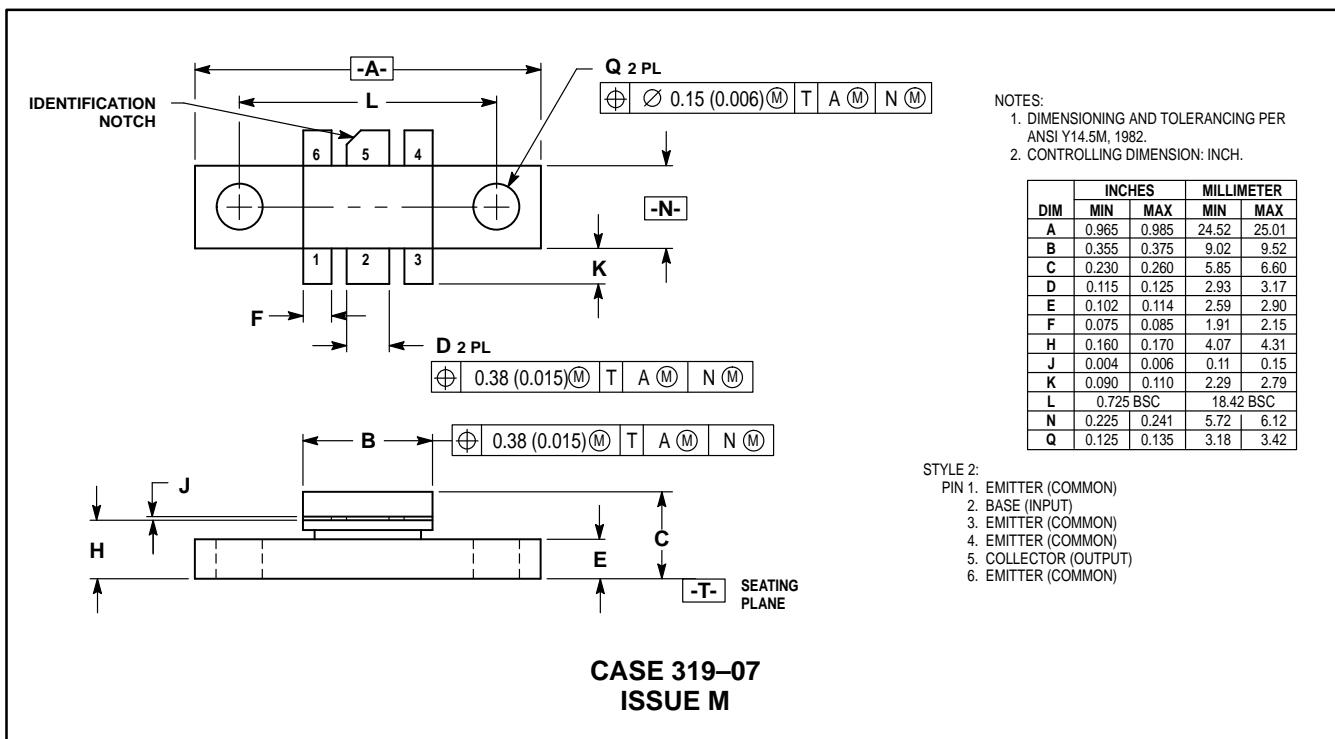
FUNCTIONAL TESTS

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

NOTE:

- Thermal resistance is determined under specified RF operating condition.

PACKAGE DIMENSIONS



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