

The RF Line

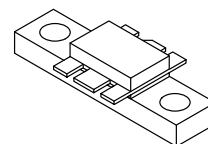
UHF Linear Power Transistor

... designed for 24 Volt UHF large-signal common emitter amplifier applications in industrial and commercial FM equipment operating in the 380 to 512 MHz frequency range, i.e., cellular radio base stations.

- 380–512 MHz
- 15 W — P_{out}
- 24 V — V_{CC}
- High Gain — 11 dB Min, Class AB
- Gold Metallization for Reliability

TP5015

15 W, 380–512 MHz
UHF LINEAR
POWER TRANSISTOR
NPN SILICON



CASE 319-07, STYLE 2
(EB)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Emitter–Base Voltage	V_{EBO}	4.0	Vdc
Total Device Dissipation @ $T_C = 70^\circ\text{C}$ Derate above 70°C	P_D	18 0.143	Watts W/ $^\circ\text{C}$
Operating Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	–65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case ($T_C = 70^\circ\text{C}$)	$R_{\theta JC}$	7.0	$^\circ\text{C/W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Emitter–Base Breakdown Voltage ($I_E = 5.0\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector–Emitter Breakdown Voltage ($I_C = 10\text{ mA}$, $R_{BE} = 75\ \Omega$)	$V_{(BR)CER}$	40	—	—	Vdc
Collector–Emitter Leakage ($V_{CE} = 26\text{ V}$, $R_{BE} = 75\ \Omega$)	I_{CER}	—	—	10	mAdc

ON CHARACTERISTICS

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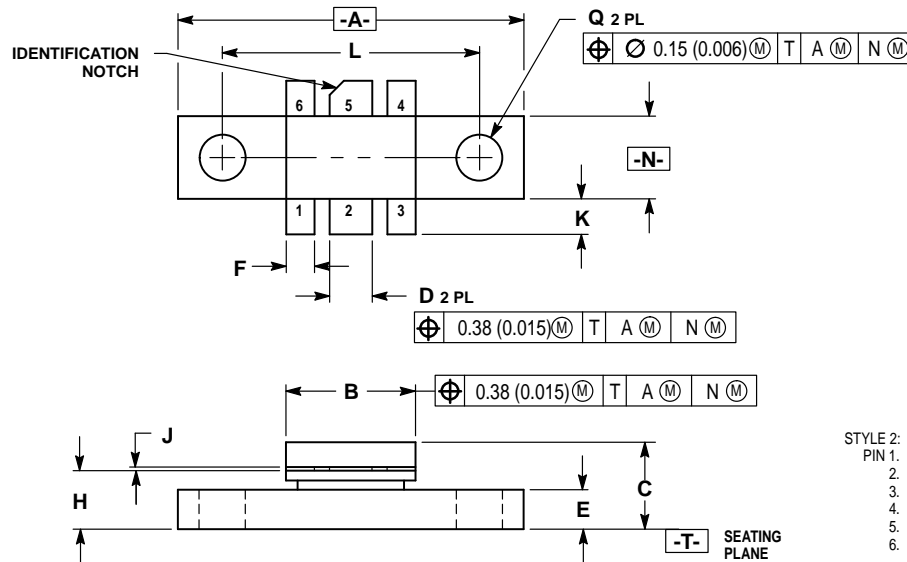
DYNAMIC CHARACTERISTICS

Output Capacitance ($V_{CB} = 24\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}	—	16	25	pF
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FUNCTIONAL TESTS

Common–Emitter Amplifier Power Gain ($V_{CE} = 24\text{ V}$, $P_{out} = 15\text{ W}$, $f = 470\text{ MHz}$, $I_Q = 50\text{ mA}$)	G_{PE}	11	—	—	dB
Collector Efficiency ($V_{CE} = 24\text{ V}$, $P_{out} = 15\text{ W}$, $f = 470\text{ MHz}$, $I_Q = 50\text{ mA}$)	η_c	50	60	—	%

PACKAGE DIMENSIONS




- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	0.965	0.985	24.52	25.01
B	0.355	0.375	9.02	9.52
C	0.230	0.260	5.85	6.60
D	0.115	0.125	2.93	3.17
E	0.102	0.114	2.59	2.90
F	0.075	0.085	1.91	2.15
H	0.160	0.170	4.07	4.31
J	0.004	0.006	0.11	0.15
K	0.090	0.110	2.29	2.79
L	0.725 BSC		18.42 BSC	
N	0.225	0.241	5.72	6.12
Q	0.125	0.135	3.18	3.42

- STYLE 2:
- PIN 1. EMITTER (COMMON)
 - BASE (INPUT)
 - EMITTER (COMMON)
 - EMITTER (COMMON)
 - COLLECTOR (OUTPUT)
 - EMITTER (COMMON)

**CASE 319-07
ISSUE M**

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TP5015/D

