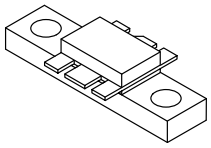
The RF Line
UHF Linear Power Transistor

. . . 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°C Derate above 70°C	P_D	18 0.143	Watts W/°C
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{stg}	–65 to +200	°C

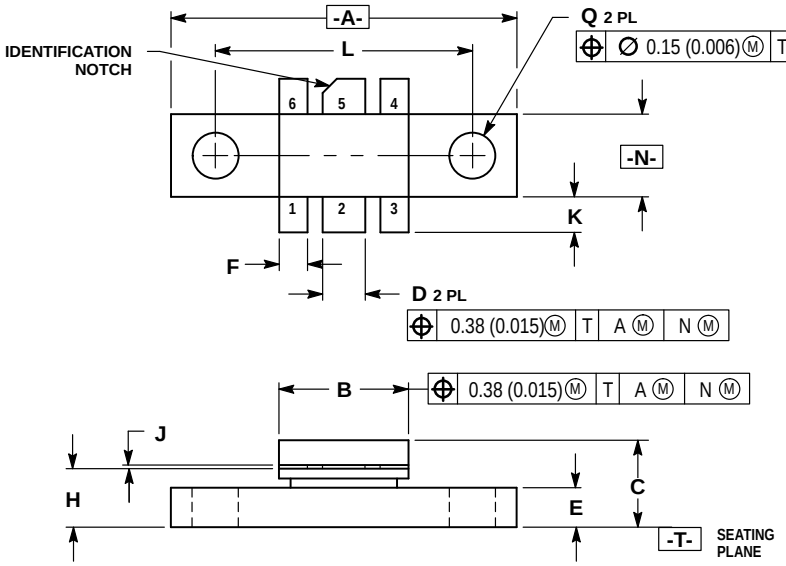
THERMAL CHARACTERISTICS

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Emitter–Base Breakdown Voltage (I_E = 5.0 mA, I_C = 0)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector–Emitter Breakdown Voltage (I_C = 10 mA, R_{BE} = 75 Ω)	$V_{(BR)CER}$	40	—	—	Vdc
Collector–Emitter Leakage (V_{CE} = 26 V, R_{BE} = 75 Ω)	I_{CER}	—	—	10	mAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 100 mA, V_{CE} = 10 V)	h_{FE}	15	—	100	—
DYNAMIC CHARACTERISTICS					
Output Capacitance (V_{CB} = 24 V, I_E = 0, f = 1.0 MHz)	C_{ob}	—	16	25	pF
FUNCTIONAL TESTS					
Common–Emitter Amplifier Power Gain (V_{CE} = 24 V, P_{out} = 15 W, f = 470 MHz, I_Q = 50 mA)	G_{PE}	11	—	—	dB
Collector Efficiency (V_{CE} = 24 V, P_{out} = 15 W, f = 470 MHz, I_Q = 50 mA)	η_c	50	60	—	%

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETER	
DIM	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)
2. BASE (INPUT)
3. EMITTER (COMMON)
4. EMITTER (COMMON)
5. COLLECTOR (OUTPUT)
6. EMITTER (COMMON)

CASE 319–07
ISSUE M

Literature Distribution Centers:
USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.
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