

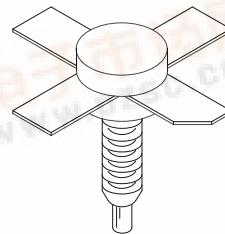
The RF Line UHF Power Transistor

... designed primarily for wideband, large-signal output and driver amplifier stages to 1000 MHz.

- Designed for Class A Linear Power Amplifiers
- Specified 19 Volt, 1000 MHz Characteristics:
Output Power — 14 Watts
Power Gain — 8.0 dB, Small-Signal
- Built-In Matching Network for Broadband Operation
- Gold Metallization for Improved Reliability
- Diffused Ballast Resistors
- Circuit board photomaster available upon request by contacting RF Tactical Marketing in Phoenix, AZ.

MRA1000-14L

8.0 dB, TO 1000 MHz
14 WATTS BROADBAND
UHF POWER TRANSISTOR



CASE 145D-02, STYLE 1
(.380 SOE)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	28	Vdc
Collector-Base Voltage	V _{CBO}	50	Vdc
Emitter-Base Voltage	V _{EBO}	3.5	Vdc
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	83 0.48	Watts W/°C
Operating Junction Temperature	T _J	200	°C
Storage Temperature Range	T _{stg}	-65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case (T _C = 70°C)	R _{θJC}	2.1	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					

Collector-Emitter Breakdown Voltage (I _C = 25 mA, I _B = 0)	V _{(BR)CEO}	28	—	—	Vdc
Collector-Emitter Breakdown Voltage (I _C = 25 mA, V _{BE} = 0)	V _{(BR)CES}	50	—	—	Vdc
Collector-Base Breakdown Voltage (I _C = 25 mA, I _E = 0)	V _{(BR)CBO}	50	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 5.0 mA, I _C = 0)	V _{(BR)EBO}	3.5	—	—	Vdc
Collector Cutoff Current (V _{CB} = 19 V, I _E = 0)	I _{CBO}	—	—	20	mAdc

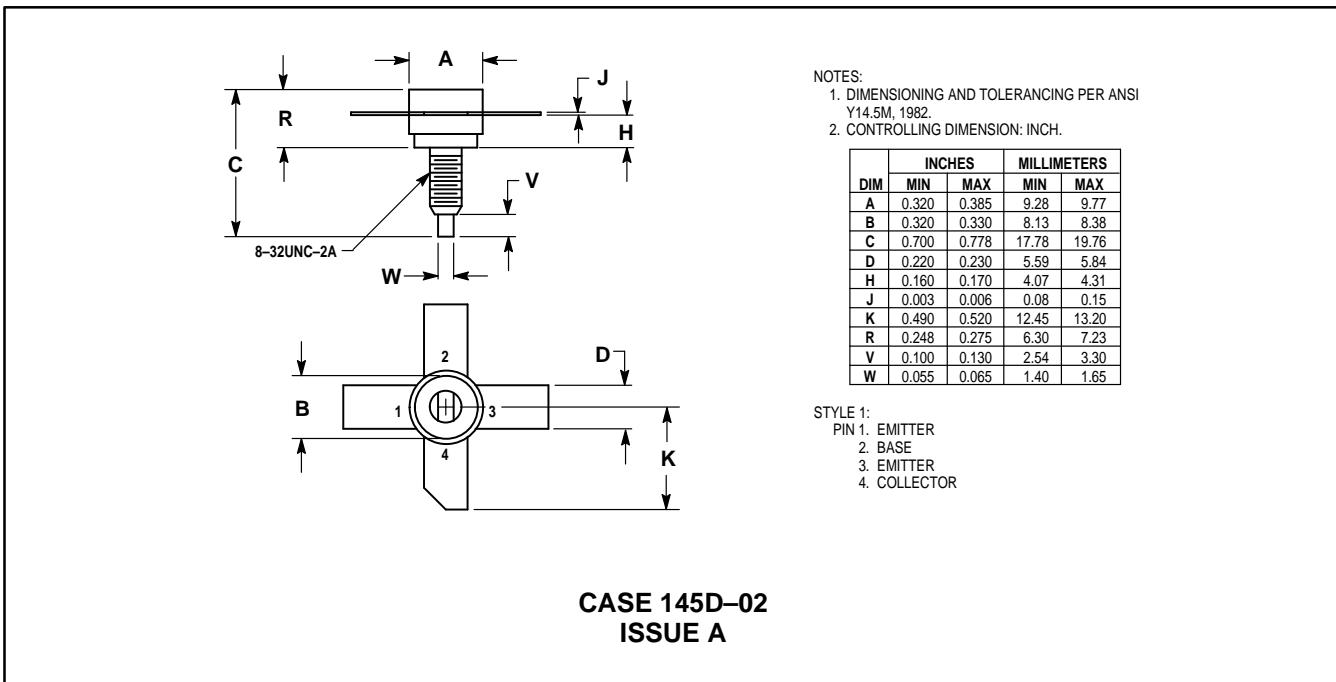
ON CHARACTERISTICS

DC Current Gain (I _C = 1.0 A, V _{CE} = 5.0 V)	h _{FE}	20	—	90	—
(continued)					

ELECTRICAL CHARACTERISTICS — continued

Characteristic	Symbol	Min	Typ	Max	Unit
DYNAMIC CHARACTERISTICS					
Output Capacitance ($V_{CB} = 24$ V, $I_E = 0$, $f = 1.0$ MHz)	C_{ob}	—	—	40	pF
FUNCTIONAL TESTS					
Common-Emitter Amplifier Small-Signal Gain ($V_{CE} = 19$ V, $P_{in} = 1.0$ mW, $f = 1.0$ GHz, $I_C = 2.4$ A)	G_{SS}	8.0	—	—	dB
Load Mismatch ($V_{CE} = 19$ V, $I_C = 2.4$ A, $P_{out} = 14$ W, $f = 1.0$ GHz, Load VSWR = ∞ :1, All Phase Angles)	ψ	No Degradation in Output Power			
Overdrive ($V_{CE} = 19$ V, $I_C = 2.4$ A, $f = 1.0$ GHz) (No degradation)	$P_{in,over}$	—	—	7.0	W
Output Power, 1.0 dB Compression Point ($V_{CE} = 19$ V, $f = 1.0$ GHz, $I_C = 2.4$ A)	$P_{o1\ dB}$	14	—	—	W

PACKAGE DIMENSIONS



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