

The RF Line

UHF Power Transistor

... designed primarily for wideband, large-signal output and driver amplifier stages to 1.0 GHz.

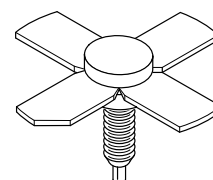
- Designed for Class A Linear Power Amplifiers
- Specified 25 Volt, 900 MHz Characteristics:
Output Power — 1.5 Watts
Power Gain — 8.0 dB Min, Class AB
- Gold Metallization for Improved Reliability

MRF1029

1.5 W, TO 1.0 GHz
LINEAR
UHF POWER TRANSISTOR
NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	30	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	4.0	Vdc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	14.5 0.084	Watts W/ $^\circ\text{C}$
Operating Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$



CASE 244-04, STYLE 1
(.280 SOE)

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case ($T_C = 70^\circ\text{C}$)	$R_{\theta JC}$	12	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	30	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 10\text{ mA}$, $V_{BE} = 0$)	$V_{(BR)CES}$	60	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10\text{ mA}$, $I_E = 0$)	$V_{(BR)CBO}$	60	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 5.0\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 25\text{ V}$, $I_E = 0$)	I_{CBO}	—	—	1.0	mAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 250\text{ mA}$, $V_{CE} = 5.0\text{ V}$)	h_{FE}	20	—	80	—
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DYNAMIC CHARACTERISTICS

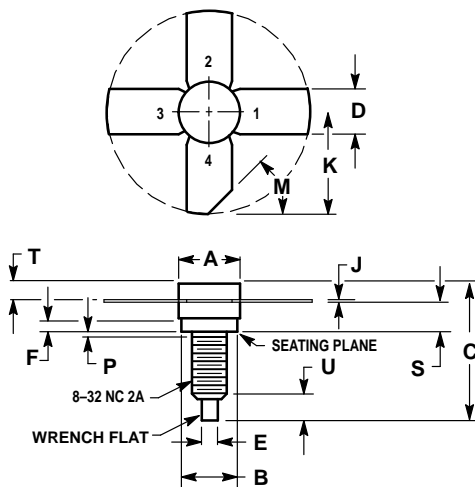
Output Capacitance ($V_{CB} = 28\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}	—	—	4.75	pF
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FUNCTIONAL TESTS

Common-Emitter Amplifier Power Gain ($V_{CE} = 25\text{ V}$, $P_{out} = 1.5\text{ W}$, $f = 900\text{ MHz}$, $I_C = 0.2\text{ A}$)	G_{PE}	8.0	9.3	—	dB
Load Mismatch ($V_{CE} = 25\text{ V}$, $I_C = 0.2\text{ A}$, $P_{out} = 1.5\text{ W}$, $f = 900\text{ MHz}$, Load VSWR = $\infty:1$, All Phase Angles)	ψ	No Degradation in Output Power			




PACKAGE DIMENSIONS



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	7.06	7.26	0.278	0.286
B	6.20	6.50	0.244	0.256
C	14.99	16.51	0.590	0.650
D	5.46	5.96	0.215	0.235
E	1.40	1.65	0.055	0.065
G	1.52	—	0.060	—
J	0.08	0.17	0.003	0.007
K	11.05	—	0.435	—
M	45°	NOM	45°	NOM
P	—	1.27	—	0.050
S	3.00	3.25	0.118	0.128
T	1.40	1.77	0.055	0.070
U	2.92	3.68	0.115	0.145

STYLE 1:
PIN 1. EMITTER
2. BASE
3. EMITTER
4. COLLECTOR

CASE 244-04
ISSUE J

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