

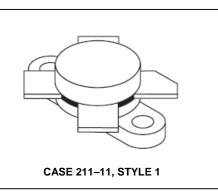
## The RF Line NPN Silicon Power Transistor 80W, 30MHz, 12.5V

Designed for power amplifier applications in industrial, commercial and amateur radio equipment to 30 MHz.

- Specified 12.5 V, 30 MHz characteristics
- Output power = 80 W
- Minimum gain = 12 dB
- Efficiency = 50%

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**Product Image** 



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V <sub>CEO</sub>	25	Vdc
Collector–Base Voltage	V <sub>CBO</sub>	45	Vdc
Emitter–Base Voltage	V <sub>EBO</sub>	4.0	Vdc
Collector Current — Continuous	ι <sub>c</sub>	20	Adc
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	P <sub>D</sub>	250 1.43	Watts W/∘C
Storage Temperature Range	T <sub>stg</sub>	-65 to +150	°C

### THERMAL CHARACTERISTICS

Characteristic	Symbol 3 1	Max	Unit
Thermal Resistance, Junction to Case	R <sub>eJC</sub>	0.7	°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS	·		•	•	•
Collector–Emitter Breakdown Voltage ( $I_C$ = 100 mAdc, $I_B$ = 0)	V <sub>(BR)CEO</sub>	18	_	_	Vdc
Collector–Emitter Breakdown Voltage (I <sub>C</sub> = 50 mAdc, $V_{BE}$ = 0)	V <sub>(BR)CES</sub>	36	—	_	Vdc
Emitter–Base Breakdown Voltage ( $I_E$ = 10 mAdc, $I_C$ = 0)	V <sub>(BR)EBO</sub>	4.0	—	_	Vdc
ON CHARACTERISTICS					
DC Current Gain (I <sub>C</sub> = 5.0 Adc, V <sub>CE</sub> = 5.0 Vdc)	h <sub>FE</sub>	40	—	150	_
DYNAMIC CHARACTERISTICS					
Output Capacitance (V <sub>CB</sub> = 15 Vdc, I <sub>E</sub> = 0, f = 1.0 MHz)	Cob	_	_	250	pF

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1)

Common–Emitter Amplifier Power Gain (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	G <sub>pe</sub>	12	_	_	dB
Collector Efficiency (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	η	50	_	—	%
Series Equivalent Input Impedance (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	Z <sub>in</sub>	_	.938–j.341	—	Ohms
Series Equivalent Output Impedance (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	Z <sub>out</sub>	—	1.16–j.201	—	Ohms
Parallel Equivalent Input Impedance (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	_	—	1.06 Ω 1817 pF	—	—
Parallel Equivalent Output Impedance (V <sub>CC</sub> = 12.5 Vdc, P <sub>out</sub> = 80 W, f = 30 MHz)	—	_	1.19 Ω 777 pF	—	—

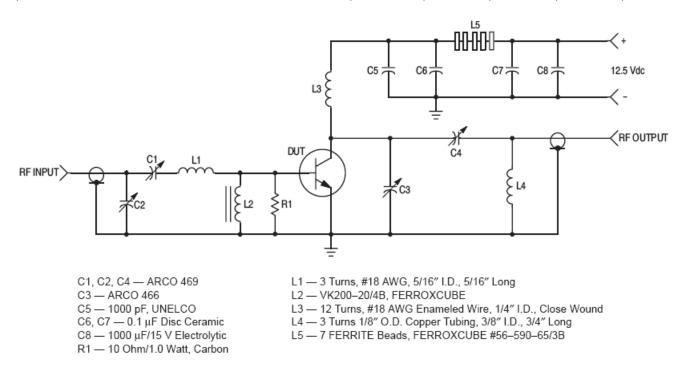


Figure 1. 30 MHz Test Circuit Schematic

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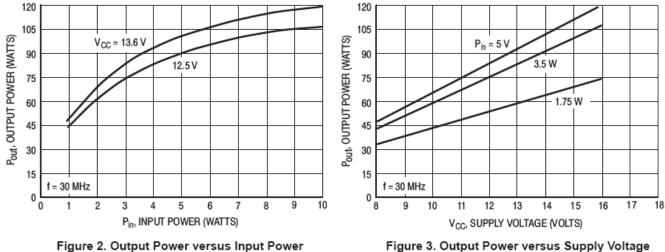


Figure 2. Output Power versus Input Power

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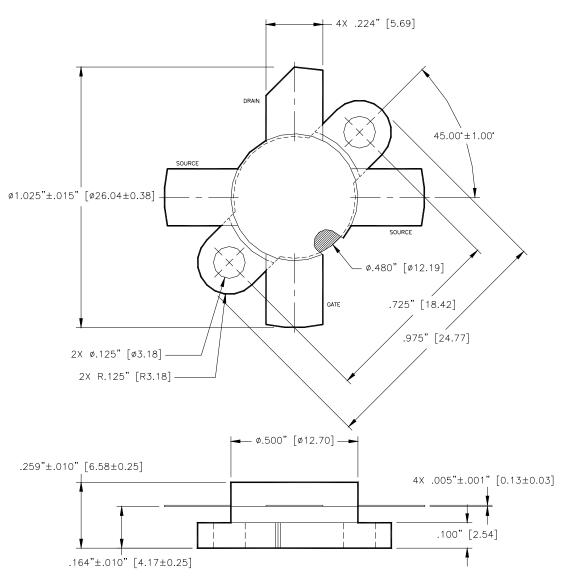
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Unless otherwise noted, tolerances are inches ±.005" [millimeters ±0.13mm]

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