

2N6082

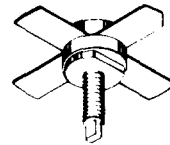
The RF Line

NPN SILICON RF POWER TRANSISTORS

... designed for 12.5 Volt VHF large-signal amplifier applications required in commercial and industrial equipment operating to 300 MHz.

- Specified 12.5 Volt, 175 MHz Characteristics —
 - Output Power = 25 W
 - Minimum Gain = 6.2 dB
 - Efficiency = 65%

25 W — 175 MHz
RF POWER
TRANSISTOR
NPN SILICON



2

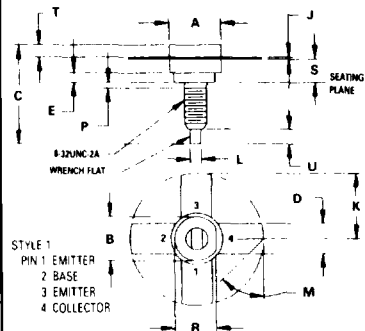
***MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	18	Vdc
Collector-Base Voltage	V _{CBO}	36	Vdc
Emitter-Base Voltage	V _{EBO}	4.0	Vdc
Collector Current — Continuous	I _C	5.0	Adc
Total Device Dissipation @ T _C = 25°C(2) Derate above 25°C	P _D	65 .37	Watts W/°C
Storage Temperature Range	T _{stg}	-65 to +200	°C
Stud Torque(1)	—	6.5	in.lb.

*Indicates JEDEC Registered Data for 2N6082.

(1) For Repeated Assembly Use 5 in. lb.

(2) These devices are designed for RF operation. The total device dissipation rating applies only when the devices are operated as RF amplifiers.



NOTES

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

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	9.78	0.370	0.385
B	8.13	8.38	0.320	0.330
C	17.02	20.07	0.670	0.790
D	5.46	5.97	0.215	0.235
E	1.78	—	0.070	—
J	0.08	0.18	0.003	0.007
K	12.45	—	0.490	—
L	1.40	1.78	0.055	0.070
M	45	NOM	45	NOM
P	—	1.27	—	0.050
R	7.59	7.80	0.299	0.307
S	4.01	4.52	0.158	0.178
T	2.11	2.54	0.083	0.100
U	2.49	3.35	0.098	0.132

CASE 145A-09

2N6082

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 100\text{ mAdc}$, $I_B = 0$)	$V_{(BR)CEO}$	18	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 15\text{ mAdc}$, $V_{BE} = 0$)	$V_{(BR)CES}$	36	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 5.0\text{ mAdc}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 15\text{ Vdc}$, $V_{BE} = 0$, $T_C = +55^\circ\text{C}$)	I_{CES}	—	—	10	mAdc
Collector Cutoff Current ($V_{CB} = 15\text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	—	1.0	mAdc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 1.0\text{ Adc}$, $V_{CE} = 5.0\text{ Vdc}$)	h_{FE}	5.0	—	—	—
DYNAMIC CHARACTERISTICS					
Output Capacitance ($V_{CB} = 15\text{ Vdc}$, $I_E = 0$, $f = 0.1\text{ MHz}$)	C_{ob}	—	110	130	pF
FUNCTIONAL TEST					
Common-Emitter Amplifier Power Gain ($P_{out} = 25\text{ W}$, $V_{CC} = 12.5\text{ Vdc}$, $f = 175\text{ MHz}$)	G_{PE}	6.2	—	—	dB
Collector Efficiency ($P_{out} = 25\text{ W}$, $V_{CC} = 12.5\text{ Vdc}$, $f = 175\text{ MHz}$)	η	65	—	—	%

*Indicates JEDEC Registered Data for 2N6082.

FIGURE 1 - 175 MHz TEST CIRCUIT

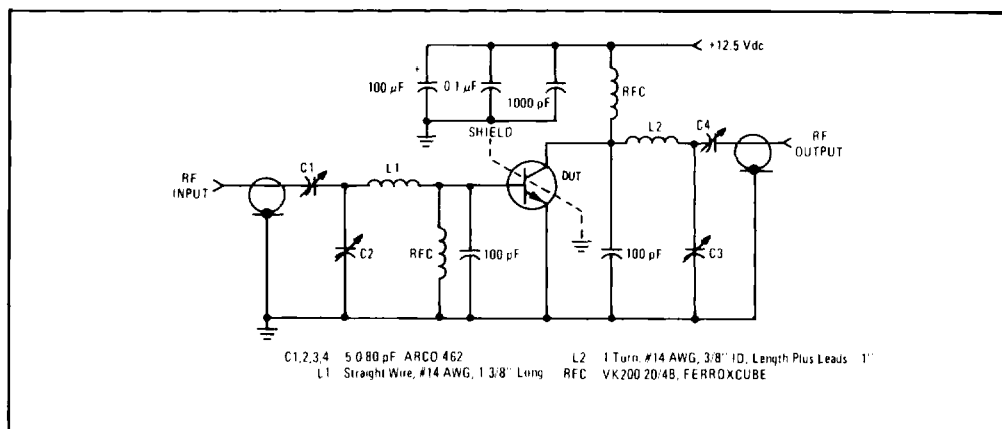


FIGURE 2 - OUTPUT POWER versus INPUT POWER

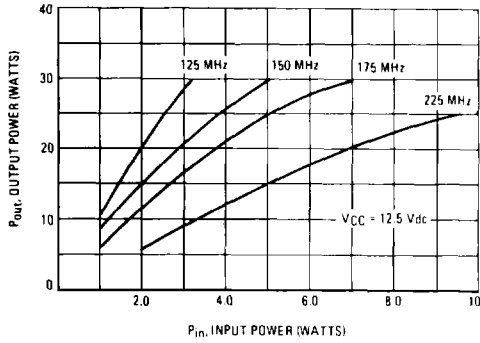


FIGURE 3 - OUTPUT POWER versus SUPPLY VOLTAGE

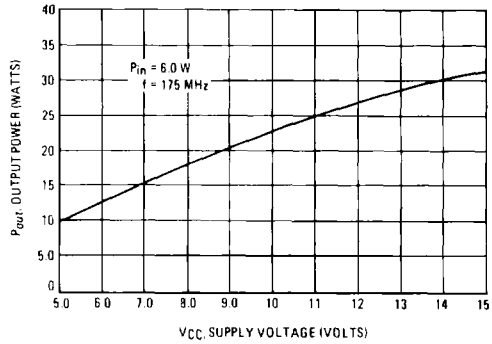


FIGURE 4 - SERIES EQUIVALENT IMPEDANCE

