

2N6082

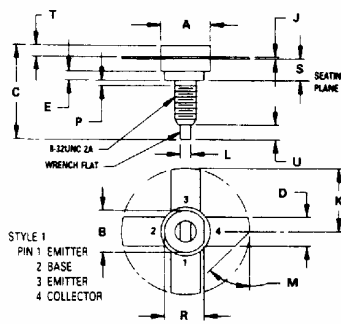
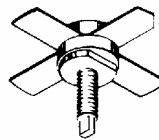
The RF Line

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



NOTES
 1 DIMENSIONING AND TOLERANCING PER ANSI
 Y14.5M 1982
 2 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

***MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	18	Vdc
Collector-Base Voltage	V _{CB0}	36	Vdc
Emitter-Base Voltage	V _{EB0}	4.0	Vdc
Collector Current — Continuous	I _C	5.0	Adc
Total Device Dissipation @ T _C = 25°C(2)	P _D	65	Watts
Derate above 25°C		.37	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.

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 100 \text{ mA dc}, I_B = 0$)	$V_{(BR)CEO}$	18	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 15 \text{ mA dc}, V_{BE} = 0$)	$V_{(BR)CES}$	36	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 5.0 \text{ mA dc}, I_C = 0$)	$V_{(BR)EBO}$	40	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 15 \text{ V dc}, V_{BE} = 0, T_C = +55^\circ\text{C}$)	I_{CES}	—	—	10	mA dc
Collector Cutoff Current ($V_{CB} = 15 \text{ V dc}, I_E = 0$)	I_{CBO}	—	—	10	mA dc
ON CHARACTERISTICS					
DC Current Gain ($I_C = 1.0 \text{ A dc}, V_{CE} = 5.0 \text{ V dc}$)	h_{FE}	50	—	—	—
DYNAMIC CHARACTERISTICS					
Output Capacitance ($V_{CB} = 15 \text{ V dc}, I_E = 0, f = 0.1 \text{ MHz}$)	C_{ob}	—	110	130	pF
FUNCTIONAL TEST					
Common-Emitter Amplifier Power Gain ($P_{out} = 25 \text{ W}, V_{CC} = 12.5 \text{ V dc}, f = 175 \text{ MHz}$)	G_{PE}	6.2	—	—	dB
Collector Efficiency ($P_{out} = 25 \text{ W}, V_{CC} = 12.5 \text{ V dc}, f = 175 \text{ MHz}$)	η	65	—	—	%

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FIGURE 1 — 175 MHz TEST CIRCUIT

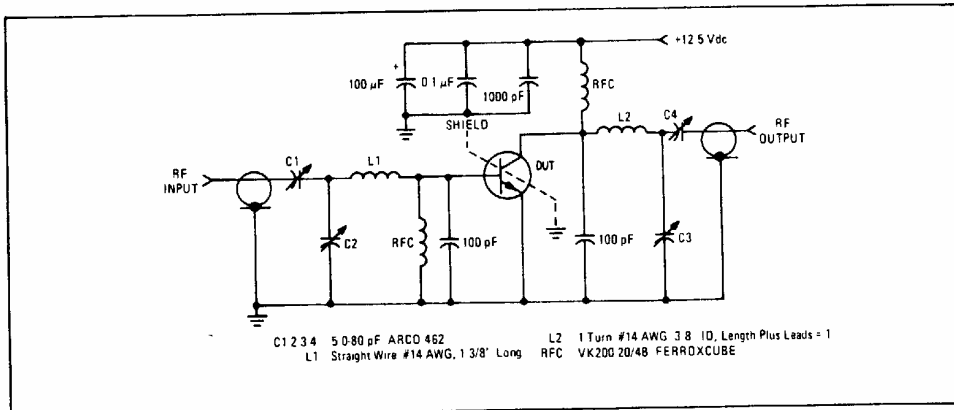


FIGURE 2 – OUTPUT POWER versus INPUT POWER

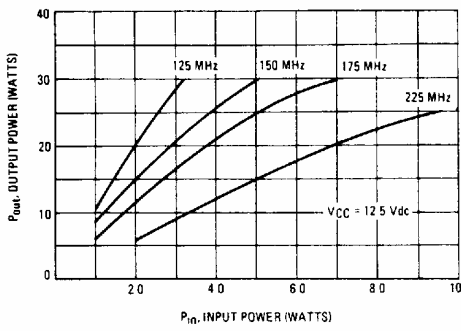


FIGURE 3 – OUTPUT POWER versus SUPPLY VOLTAGE

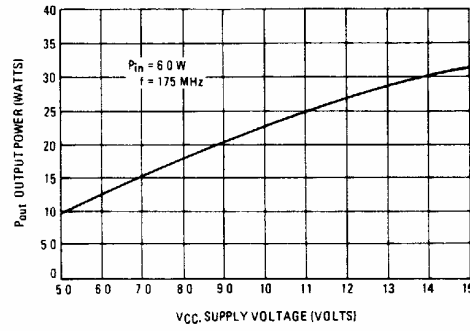
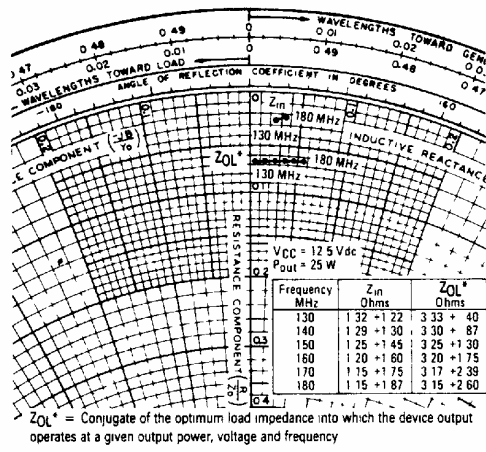


FIGURE 4 – SERIES EQUIVALENT IMPEDANCE



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