

MOTOROLA SEMICONDUCTOR TECHNICAL DATA

2N6082

The RF Line

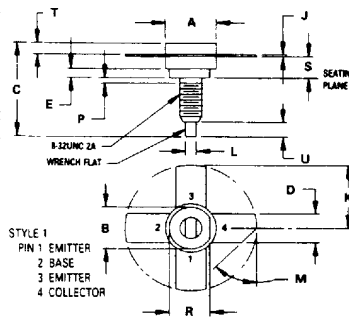
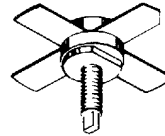
NPN SILICON RF POWER TRANSISTORS

... 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**

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STYLE 1
 PIN 1 EMITTER
 2 BASE
 3 EMITTER
 4 COLLECTOR

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° NDM	45° NDM	—	—
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 _{CBO}	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) 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.

2N6082

MOTOROLA SC (XSTRS/R F) 46E D ■ 6367254 0094126 4 ■ MOT6

*ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I _C = 100 mA, I _B = 0)	V _{(BR)CEO}	18	—	—	Vdc
Collector-Emitter Breakdown Voltage (I _C = 15 mA, V _{BE} = 0)	V _{(BR)CES}	36	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 5.0 mA, I _C = 0)	V _{(BR)EBO}	4.0	—	—	Vdc
Collector Cutoff Current (V _{CE} = 15 Vdc, V _{BE} = 0, T _C = +55°C)	I _{CES}	—	—	10	mA
Collector Cutoff Current (V _{CB} = 15 Vdc, I _E = 0)	I _{CBO}	—	—	1.0	mA
ON CHARACTERISTICS					
DC Current Gain (I _C = 1.0 A, V _{CE} = 5.0 Vdc)	h _{FE}	5.0	—	—	—
DYNAMIC CHARACTERISTICS					
Output Capacitance (V _{CB} = 15 Vdc, I _E = 0, f = 0.1 MHz)	C _{ob}	—	110	130	pF
FUNCTIONAL TEST					
Common-Emitter Amplifier Power Gain (P _{out} = 25 W, V _{CC} = 12.5 Vdc, f = 175 MHz)	G _{PE}	6.2	—	—	dB
Collector Efficiency (P _{out} = 25 W, V _{CC} = 12.5 Vdc, f = 175 MHz)	η	65	—	—	%

*Indicates JEDEC Registered Data for 2N6082

FIGURE 1 - 175 MHz TEST CIRCUIT

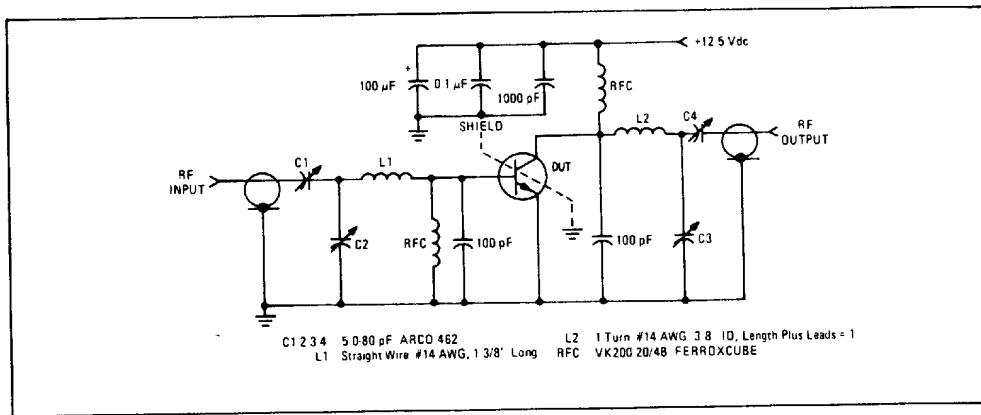


FIGURE 2 - OUTPUT POWER versus INPUT POWER

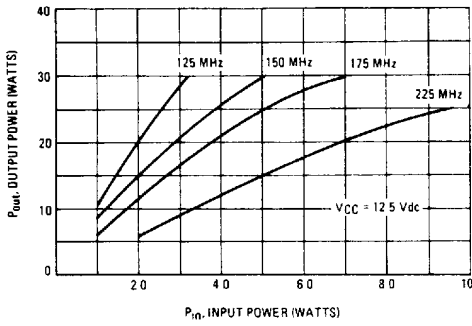
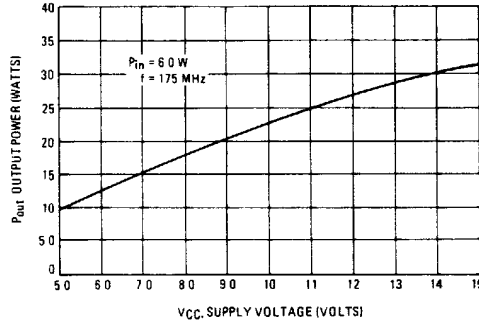


FIGURE 3 - OUTPUT POWER versus SUPPLY VOLTAGE



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FIGURE 4 - SERIES EQUIVALENT IMPEDANCE

