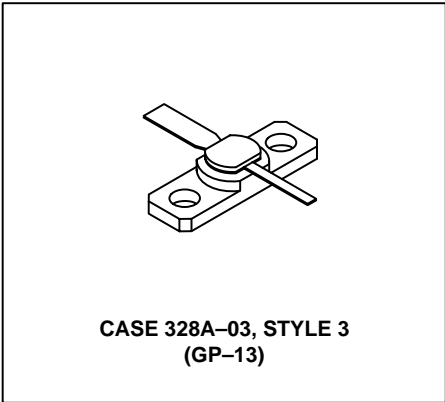


# The RF Line

## Microwave Power Oscillator Transistor

... designed for use as power oscillators at frequencies to 3.0 GHz with typical output power of over 1.0 watt.

- Operation to 3.0 GHz
- High Output Power (1.2 W Typ @ 2.5 GHz)
- Rugged — Capable of Withstanding High Load VSWR
- High Reliability
- Hermetic Package
- Gold Metallization
- Diffused Emitter Ballast Resistors
- Common Collector Configuration
- Formerly named TRW62601
- Circuit board photomaster available upon request by contacting RF Tactical Marketing in Phoenix, AZ.



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	22	Vdc
Collector–Base Voltage	$V_{CBO}$	45	Vdc
Emitter–Base Voltage	$V_{EBO}$	3.5	Vdc
Collector Current — Continuous	$I_C$	0.5	Adc
Operating Junction Temperature	$T_J$	200	°C
Storage Temperature Range	$T_{stg}$	–65 to +200	°C

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	15	°C/W

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ( $I_C = 20\text{ mA}$ , $I_B = 0$ )	$V_{(BR)CEO}$	22	—	—	Vdc
Collector–Base Breakdown Voltage ( $I_C = 1.0\text{ mA}$ , $I_E = 0$ )	$V_{(BR)CBO}$	45	—	—	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 0.25\text{ mA}$ , $I_C = 0$ )	$V_{(BR)EBO}$	3.5	—	—	Vdc
Collector–Emitter Breakdown Voltage ( $I_C = 20\text{ mA}$ , $R_{BE} = 10\ \Omega$ )	$V_{(BR)CER}$	50	—	—	Vdc
Collector Cutoff Current ( $V_{CB} = 28\text{ V}$ , $I_E = 0$ )	$I_{CBO}$	—	—	0.125	mAdc

### ON CHARACTERISTICS

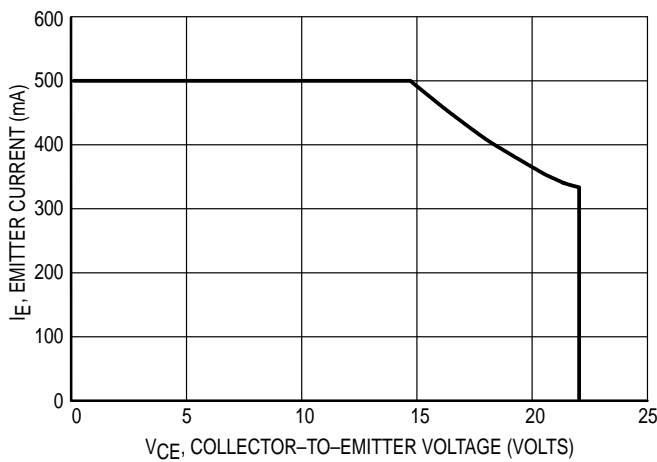
DC Current Gain ( $I_C = 100\text{ mA}$ , $V_{CE} = 5.0\text{ V}$ )	$h_{FE}$	20	—	120	—
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(continued)

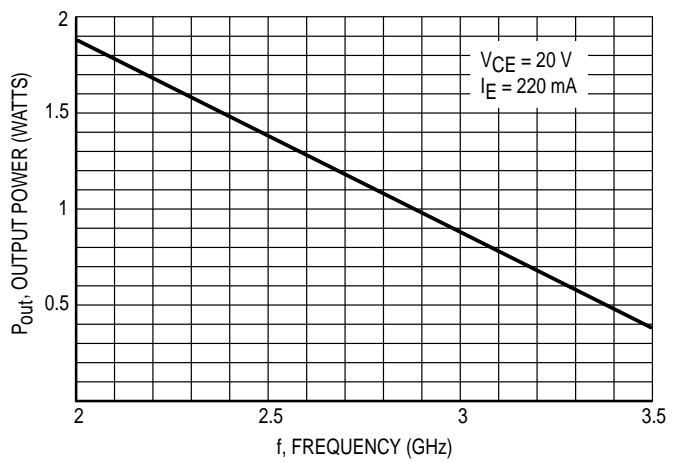
**ELECTRICAL CHARACTERISTICS — continued**

Characteristic	Symbol	Min	Typ	Max	Unit
<b>DYNAMIC CHARACTERISTICS</b>					
Output Capacitance ( $V_{CB} = 28\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ob}$	—	—	5.0	pF
<b>FUNCTIONAL TESTS</b>					
Oscillator Output Power ( $V_{CE} = 20\text{ V}$ , $f = 2.0\text{ GHz}$ , $I_E = 220\text{ mA}$ )	$P_{out}$	1.25	—	—	W
Load Mismatch ( $V_{CE} = 20\text{ V}$ , $I_E = 220\text{ mA}$ , $P_{out} = 1.25\text{ W}$ , $f = 2.0\text{ GHz}$ , Load VSWR = $\infty:1$ , All Phase Angles)	$\psi$	No Degradation in Output Power			
Cutoff Frequency ( $V_{CE} = 20\text{ V}$ , $I_E = 220\text{ mA}$ )	$f_t$	—	2.7	—	GHz

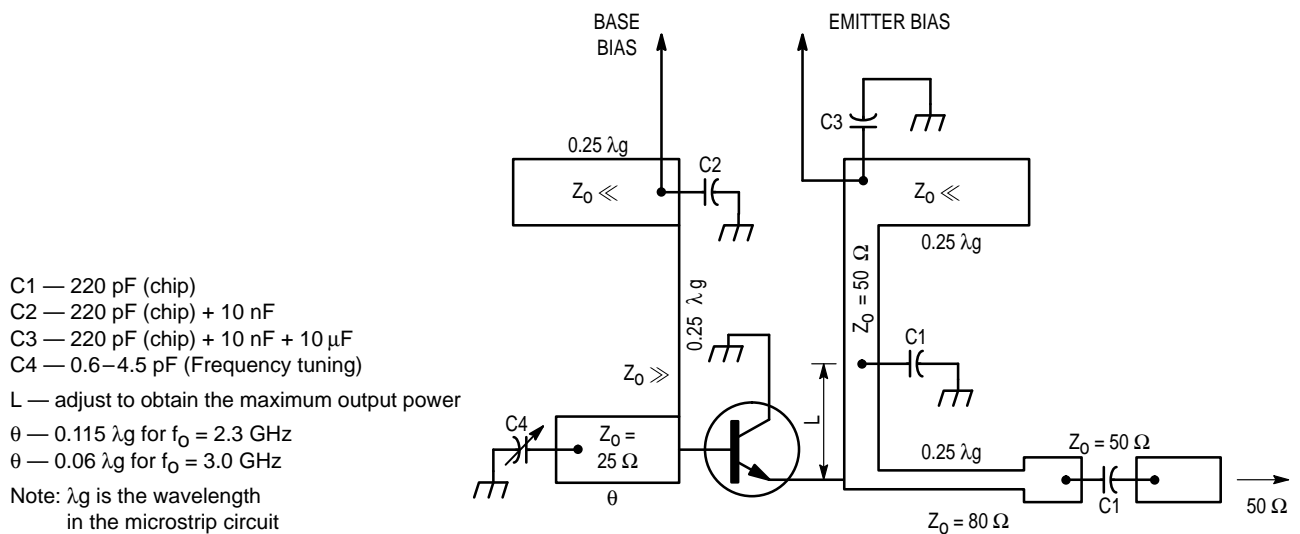
**TYPICAL CHARACTERISTICS**



**Figure 1. DC Safe Operating Area**

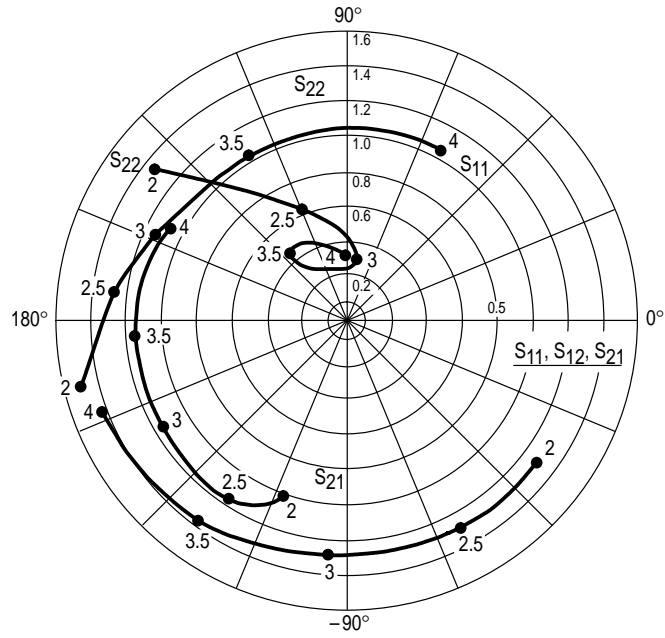


**Figure 2. Output Power versus Frequency**



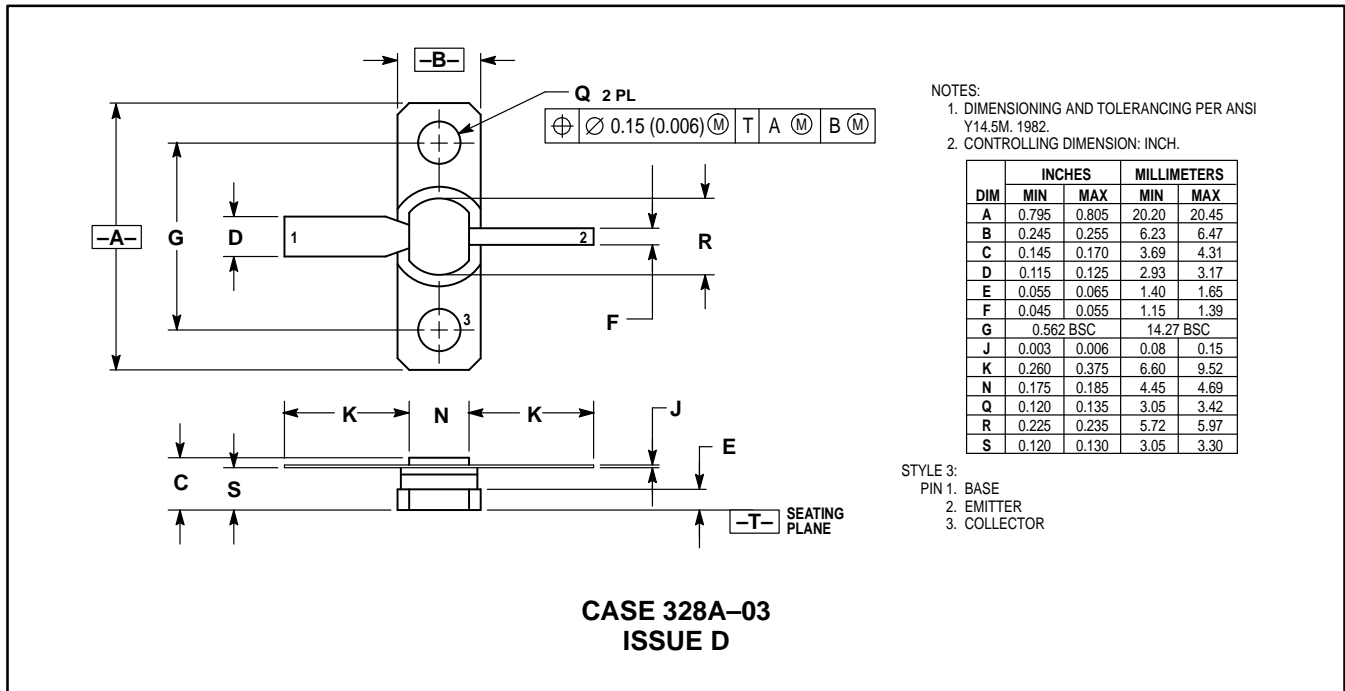
**Figure 3. Test Circuit**

# TYPICAL CHARACTERISTICS



**Figure 4. Small Signal S-Parameters  
(V<sub>CE</sub> = 20 V, I<sub>E</sub> = 220 mA)**

## PACKAGE DIMENSIONS



**NOTES:**

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.795	0.805	20.20	20.45
B	0.245	0.255	6.23	6.47
C	0.145	0.170	3.69	4.31
D	0.115	0.125	2.93	3.17
E	0.055	0.065	1.40	1.65
F	0.045	0.055	1.15	1.39
G	0.562 BSC		14.27 BSC	
J	0.003	0.006	0.08	0.15
K	0.260	0.375	6.60	9.52
N	0.175	0.185	4.45	4.69
Q	0.120	0.135	3.05	3.42
R	0.225	0.235	5.72	5.97
S	0.120	0.130	3.05	3.30

**STYLE 3:**

- PIN 1. BASE
2. EMITTER
3. COLLECTOR

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