

RF Devices Division  
TRW Electronic Components Group



8825024 T R W ELEK CMPNT, R F

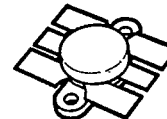
89D 03401 D

**J04045**

T-33-13

## RF Power Transistors

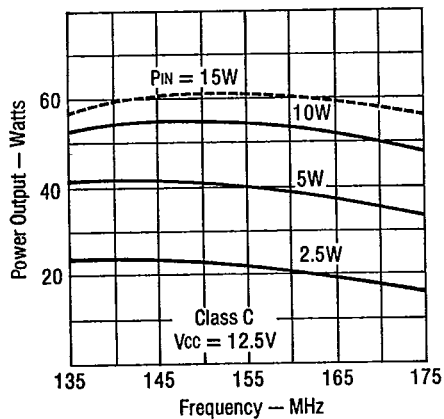
- 45 Watts
- 12.5 Vcc
- 175 MHz
- Gold Metalization
- Diffused Ballast Resistors
- Low Thermal Resistance
- Common Emitter
- Isolated Packages
- Class C Operation
- 20:1 VSWR
- Internally Matched



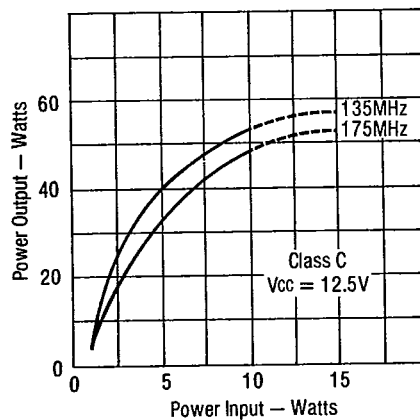
.500 J Zero

	SYMBOL	CHARACTERISTICS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
DC TEST	BV <sub>CES</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 50mA	36			V <sub>dc</sub>
	BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 50mA	16			V <sub>dc</sub>
	I <sub>CES</sub>	Collector Cutoff Current	V <sub>CE</sub> = 15V			10	mAdc
	h <sub>FE</sub>	DC Current Gain	V <sub>CE</sub> = 5V, I <sub>C</sub> = 1A	10		200	—
RF TEST	P <sub>G</sub>	Power Gain	V <sub>CE</sub> = 12.5V, f = 175MHz P <sub>IN</sub> = 10W	6.5			dB
	P <sub>REF</sub>	Power Reflected	V <sub>CE</sub> = 12.5V, f = 175MHz P <sub>IN</sub> = 10W			1.0	W
	Load VSWR	Load Mismatch Tolerance	V <sub>CE</sub> = 15.5V, f = 175MHz P <sub>IN</sub> = 10W	20:1			VSWR
THERMAL	I <sub>C(MAX)</sub>	Collector Current	T <sub>C</sub> = 25°C			6.5	A
	P <sub>D(MAX)</sub>	Total Dissipation	T <sub>C</sub> = 25°C			100	W
	T <sub>STG</sub>	Operating and Storage Temperature		-65		150	°C
	θ <sub>ic</sub>	Thermal Resistance			1.75		°C/W

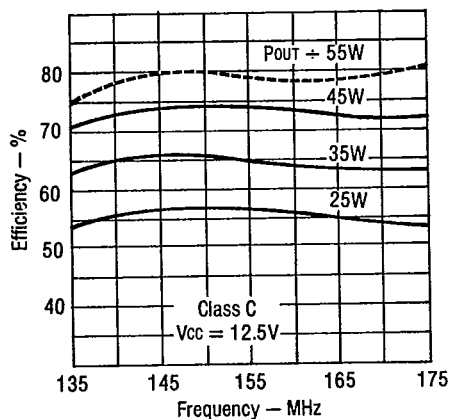
**Broadband P<sub>(OUT)</sub> vs. Frequency**



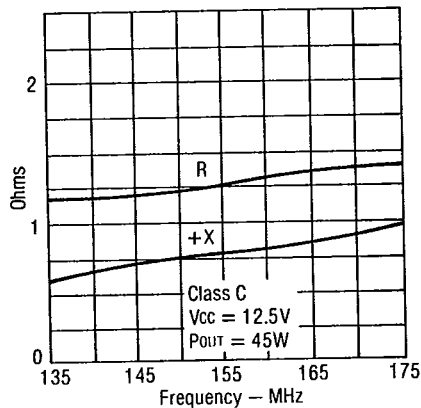
**Broadband Power Transfer**



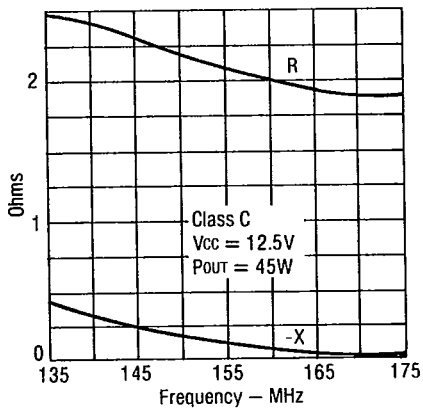
**Broadband Collector Efficiency**



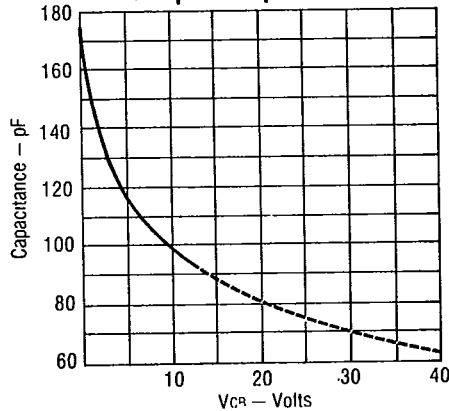
**Series Input Impedance**



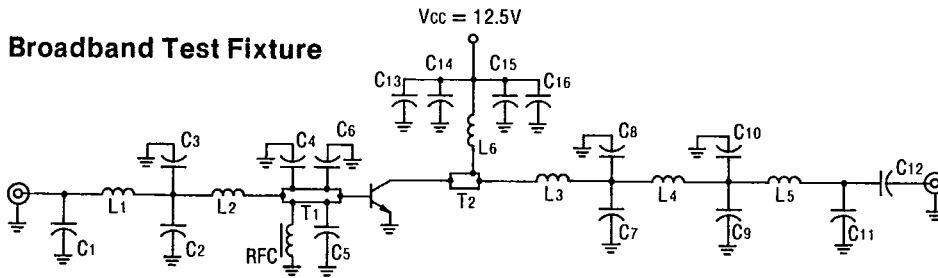
**Series Load Impedance**



**Output Capacitance**



**J04045** T-33-13

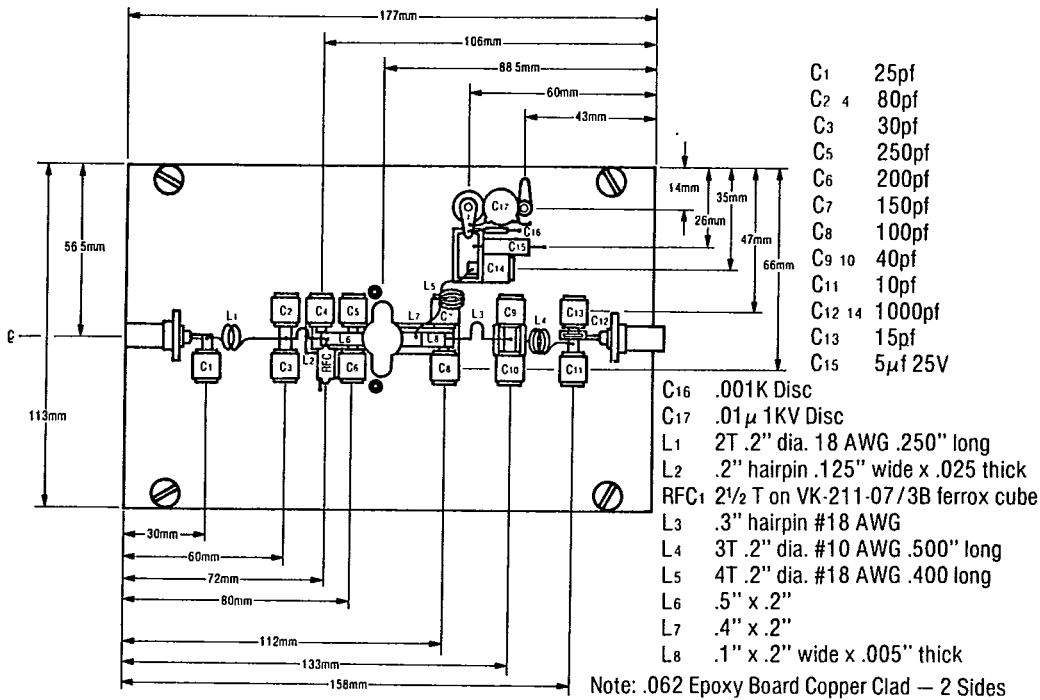


**COMPONENTS LIST:**

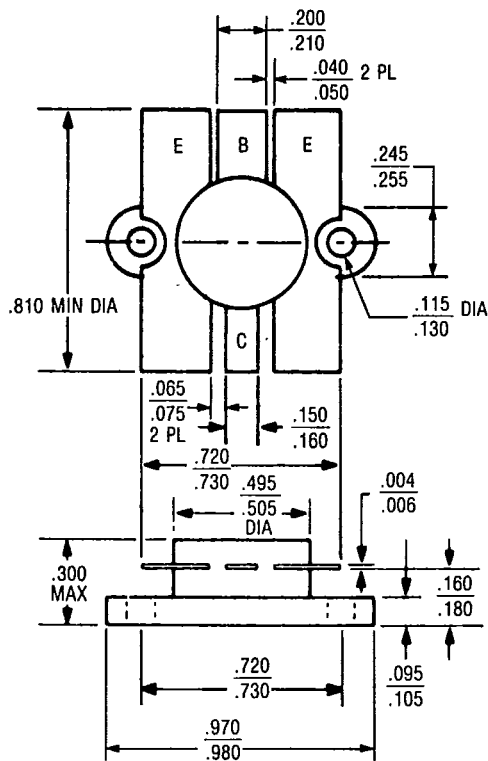
- |        |                    |     |  |
|--------|--------------------|-----|--|
| C1,2   | 25pf               | L2  | .2" hairpin .125" wide x .025 thick copper strip |
| C3,4   | 80pf               | L3  | .1" x .2" wide x .005" thick copper loop         |
| C5     | 250pf              | L4  | .3" hairpin 18 AWG.                              |
| C6     | 200pf              | L5  | 3 T. 18 AWG. .2" dia.                            |
| C7     | 150pf              | L6  | 4 T. 18 AWG. .2" dia.                            |
| C8     | 100pf              | RFC | 2 1/2 T. on VK-211-07/38 ferrox cube             |
| C9,10  | 40pf               | T1  | .2" width .5" length from package as ref.        |
| C11    | 25pf               | T2  | .2" width .4" length from package as ref.        |
| C12,13 | 1000pf             |     |  |
| C14    | .001 μf            |     |  |
| C15    | .01 μf             |     |  |
| C16    | 25 μf              |     |  |
| L1     | 2T 18 AWG .2" dia. |     |  |

**NOTES:**

1. All capacitors in signal path are Underwood Electric Corp. Case Type J101.
2. Position C5 and C6 as close to pkg. as possible.



J04045 T-33-13



.500 J ZERO: