

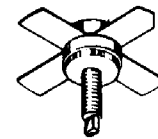
The RF Line VHF Power Transistors

... designed primarily for wideband, large-signal output amplifier stages in the 30-200 MHz frequency range.

- Guaranteed Performance at 175 MHz, 28 Vdc
Output Power — 4 to 25 Watts
Minimum Gain — 10 to 13 dB
Collector Efficiency — 60%, Min
- 100% Tested for Load Mismatch at All Phase Angles with 30:1 VSWR
- Gold Metallization for Improved Reliability
- Diffused Ballast Resistors

PT9730 Series

10 TO 13 dB
TO 200 MHz
4 TO 25 WATTS
VHF POWER
TRANSISTORS



MAXIMUM RATINGS

Rating	Symbol	9730	9732	9734	9731	Unit
Collector-Emitter Voltage	V _{CEO}	35				Vdc
Collector-Base Voltage	V _{CES}	60				Vdc
Emitter-Base Voltage	V _{EBO}	4				Vdc
Collector Current — Continuous	I _C	1	1.25	2.5	4	Adc
Total Device Dissipation @ T _C = 25°C Derate above 25°C	P _D	10 0.06	20 0.114	30 0.173	45 0.257	Watts W/°C
Operating Junction Temperature	T _J	200				°C
Storage Temperature Range	T _{stg}	-65 to +150				°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max				Unit
Thermal Resistance, Junction to Case	R _{θJC}	17.5	8.8	5.8	3.9	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 25 mA, I _B = 0)	V _{(BR)CEO}	35	—	—	Vdc
Collector-Emitter Breakdown Voltage (I _C = 50 mA, V _{BE} = 0)	V _{(BR)CES}	60	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 1 mA, I _C = 0)	V _{(BR)EBO}	4	—	—	Vdc
Collector Cutoff Current (V _{CE} = 25 V, V _{BE} = 0)	PT9730 PT9732 PT9734 PT9731	I _{CES}	— — — —	0.5 1 1.5 2	mAdc

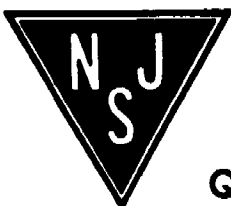
ON CHARACTERISTICS

DC Current Gain (I _C = 500 mA, V _{CE} = 10 V)	h _{FE}	20	—	150	—
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DYNAMIC CHARACTERISTICS

Output Capacitance (V _{CB} = 28 V, I _E = 0, f = 1 MHz)	PT9730 PT9732 PT9734 PT9731	C _{ob}	— — — —	12 18 24 40	pF
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(continued)



PT9730 Series

ELECTRICAL CHARACTERISTICS — continued

Characteristic	Symbol	Min	Typ	Max	Unit
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain ($V_{CE} = 28\text{ V}$, $P_{out} = \text{Rated}$, $f = 175\text{ MHz}$)	PT9730 PT9732 PT9734 PT9731	13 12 11.8 10	— — — —	— — — —	dB
Collector Efficiency ($V_{CE} = 28\text{ V}$, $P_{out} = \text{Rated}$, $f = 175\text{ MHz}$)	η_c	60	—	—	%
Load Mismatch ($V_{CE} = 28\text{ V}$, $P_{out} = \text{Rated}$, $f = 175\text{ MHz}$, Load VSWR = $\infty:1$, All Phase Angles)	ψ	No Degradation in Output Power			
Saturated Output Power ($V_{CE} = 28\text{ V}$, $f = 175\text{ MHz}$)	PT9730 PT9732 PT9734 PT9731	6 10 18 30	— — — —	— — — —	W

**TYPICAL CHARACTERISTICS
 PT9730 — 4 WATTS**

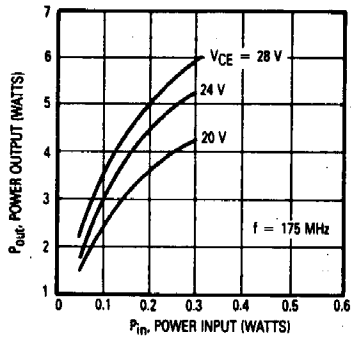


Figure 1. Power Input versus Power Output

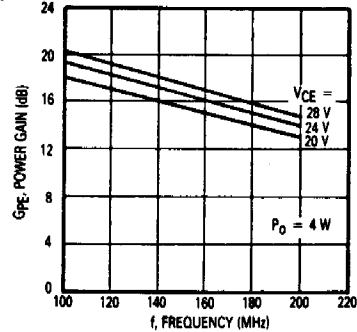


Figure 2. Power Gain versus Frequency

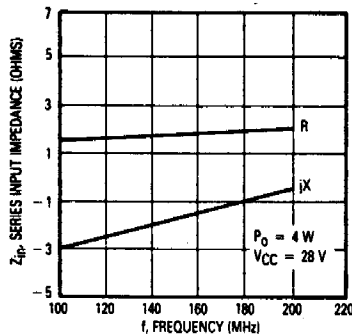


Figure 3. Series Input Impedance versus Frequency

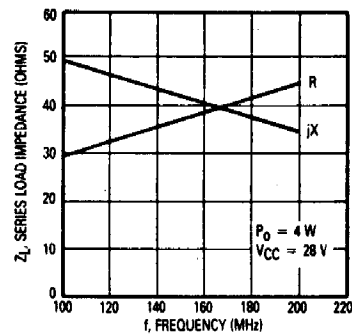


Figure 4. Series Load Impedance versus Frequency

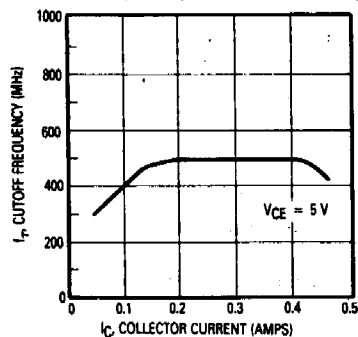


Figure 5. Cutoff Frequency versus Current

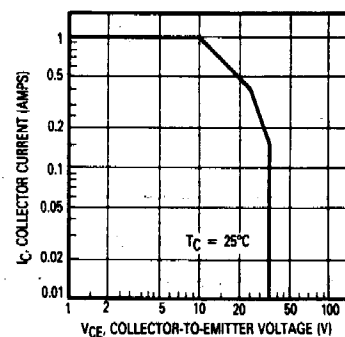


Figure 6. Safe Operating Area

