PT9785

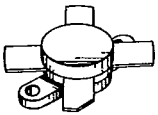
The RF Line

SSB Power Transistor

. . . designed primarily for wideband, large-signal output and driver amplifier stages in the 2 to 30 MHz frequency range.

- Designed for Class A, AB or C Power Amplifiers
- Specified 13.5 Volt, 28 MHz Characteristics:
  Output Power — 100 Watts PEP
  Power Gain — 13 dB Min, Class AB
- 100% Tested for Load Mismatch at all Phase Angles with ∞:1 VSWR
- Gold Metallization for Improved Reliability
- Diffused Ballast Resistors

13 dB
2–30 MHz
100 WATTS PEP
13.5 VOLTS
SSB POWER
TRANSISTOR



.500 SOE F
CASE 211-11, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	20	Vdc
Collector-Base Voltage	V_{CBO}	40	Vdc
Emitter-Base Voltage	V_{EBO}	4	Vdc
Collector Current — Continuous	I_C	25	Adc
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	350 2	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	$R_{\theta JC}$	0.5	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Base Breakdown Voltage (I_C = 100 mA, I_E = 0)	$V_{(BR)CBO}$	40	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 mA, I_C = 0)	$V_{(BR)EBO}$	4	—	—	Vdc
Collector Cutoff Current (V_{CE} = 13.5 V, V_{BE} = 0)	I_{CES}	—	—	20	mAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 2 A, V_{CE} = 5 V)	h_{FE}	20	—	100	—
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain (V_{CE} = 13.5 V, P_{out} = 100 W PEP, f = 28 MHz)	G_{PE}	13	—	—	dB
Load Mismatch (V_{CE} = 13.5 V, P_{out} = 100 W PEP, f = 28 MHz, Load VSWR = ∞:1, All Phase Angles)	ψ	No Degradation in Output Power			
Intermodulation Distortion (V_{CE} = 12.5 Vdc, P_{out} = 100 W PEP, f = 28 MHz)	IMD	—	−32	—	dB

TYPICAL CHARACTERISTICS

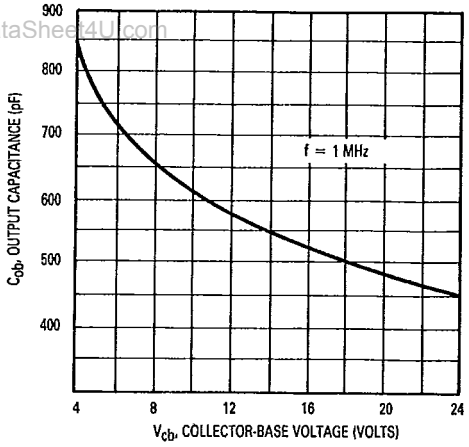
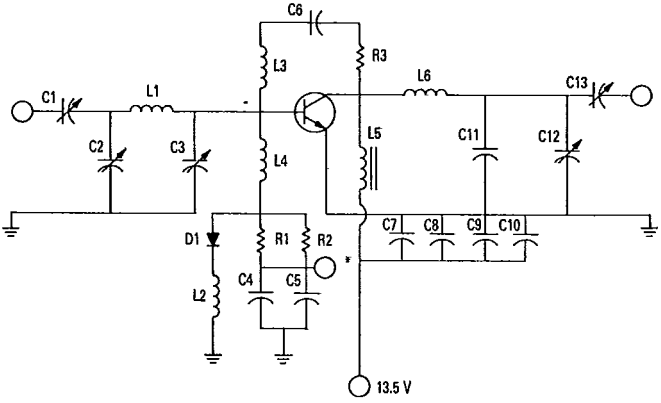


Figure 1. Output Capacitance versus Voltage



C1 — 425 ARCO
C2 — 467 ARCO
C3 — 469 ARCO
C4 — 0.1 μfD
C5, C6 — 5 μfD
C7, C8 — 0.1 μfD
C9 — 100 μfD
C10 — 1000 pF UNELCO
C11 — 100 pF UNELCO
C12 — 466 ARCO
C13 — 427 ARCO
*Note: Set voltage for 100 mA idle collector current.

L1 — 4 T., #16 AWG, 7/16" ID, 3/4" Long with 5/8" long lead on base side.
L2 — 0.33 μH Delevan
L3 — 10 μH Delevan
L4 — 1 μH Delevan
L5 — 4 T., #20 wire wound on 2 Stackpole Carbon Co. Ferrite #9500 DO A723-1838.
L6 — 4 T., #10 AWG, 1/2" ID, 1" long.
D1 — Power diode
R1, R2 — 2.7 Ohms
R3 — 51 Ohms 2W

Figure 2. 28 MHz Test Circuit