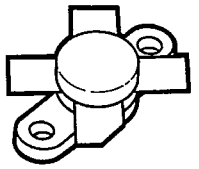
RF Devices Division
TRW Electronic Components Group

PT9783/A, PT9780

SSB Power Transistors

- 8 to 100 Watts (PEP)
- 28 Vcc
- 2 to 30 MHz
- Gold Metallized
- Diffused Ballast Resistors
- Class A, AB and C Operation
- High Gain
- Common Emitter
- Isolated Packages
- ∞ VSWR



.380 SOE F

Electrical Characteristics (T_{FLANGE} = 25°C)

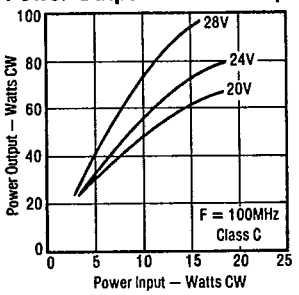
Symbol	Characteristics	Test Conditions	PT9783/A	PT9780	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 5mA, I_C = 100mA	70	70	V Min.
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 50mA	40	40	V Min.
I_{CES}	Collector-Emitter Cutoff Current	V_{CE} = 28V	25	25	mA Max.
V_{EBO}	Emitter-Base Breakdown Voltage	I_E = 2.5mA I_E = 5mA	4.0	 4.0	V Max.
h_{FE}	DC Current Gain	V_{CE} = 5V, I_C = 1A	10-100	10-100	–
P_{OUT}	Output Power PEP	V_{CE} = 28V, f = 28MHz	50	100	W Min.
P_G	Power Gain	V_{CE} = 28V, f = 28MHz Rated P_{OUT} I_{CQ} = 60mA I_{CQ} = 100mA	14	 14	dB Min.
IMD	Intermodulation Distortion	V_{CE} = 28V, f = 28MHz P_{OUT} = Rated PEP	-32	-32	dB Max.
VSWR	Mismatch Tolerance	V_{CE} = 28V, f = 28MHz P_{OUT} = Rated PEP	∞	∞	–
C_{OB}	Output Capacitance	V_{CB} = 28V_{DC}, f = 1.0MHz	150	290	pF Typ.

Absolute Maximum Ratings (T_{CASE} = 25°C)

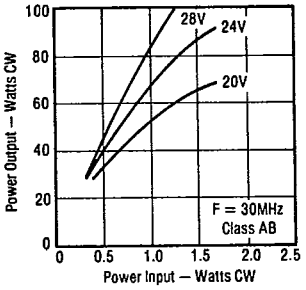
Part Number*	V_{CBO} Volts	V_{CEO} Volts	V_{EBO} Volts	I_C Max Amps	P_T @ 25°C Watts	θ_{JC} °C/W	$T_{STORAGE}$ °C
PT9780	70	40	4.0	20.0	350	0.50	-65 to 150
PT9783/A	70	40	4.0	10.0	175	1.0	-65 to 150

*The "A" suffix on part number denotes stud package.

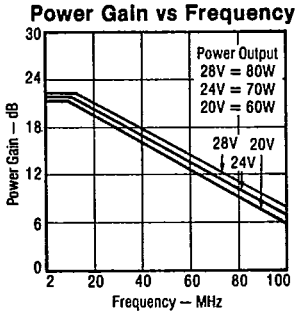
Power Output vs Power Input



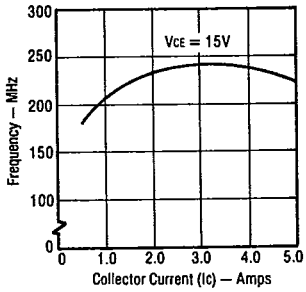
Power Output vs Power Input



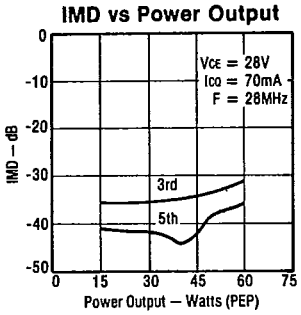
Power Gain vs Frequency



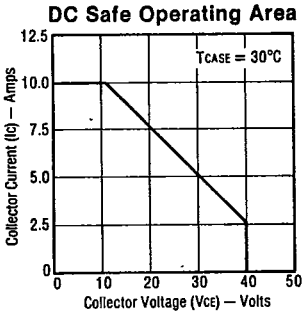
fT vs Ic



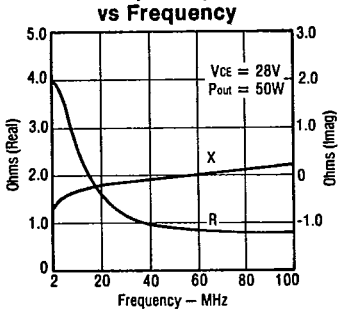
IMD vs Power Output



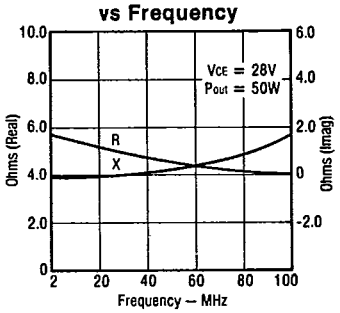
DC Safe Operating Area



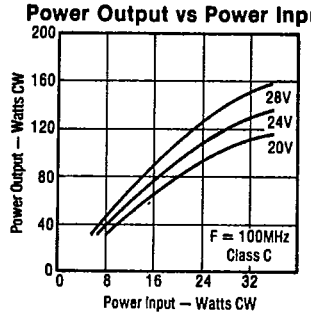
Series Input Impedance vs Frequency



Series Load Impedance vs Frequency



Power Output vs Power Input



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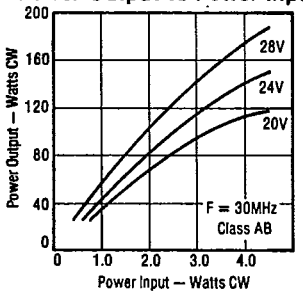
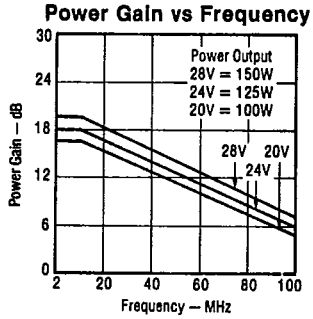
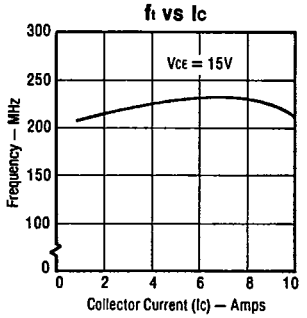


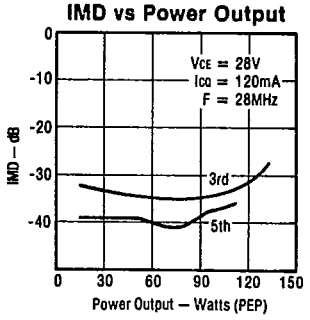
Power Gain vs Frequency



ft vs Ic



IMD vs Power Output



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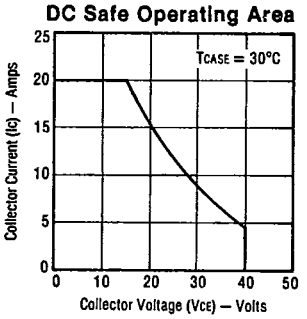
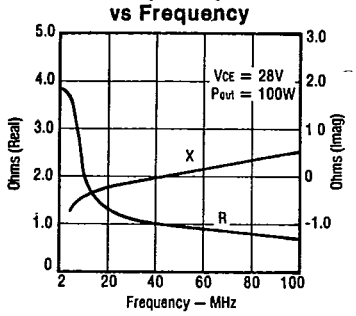
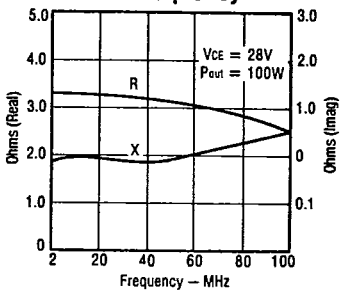


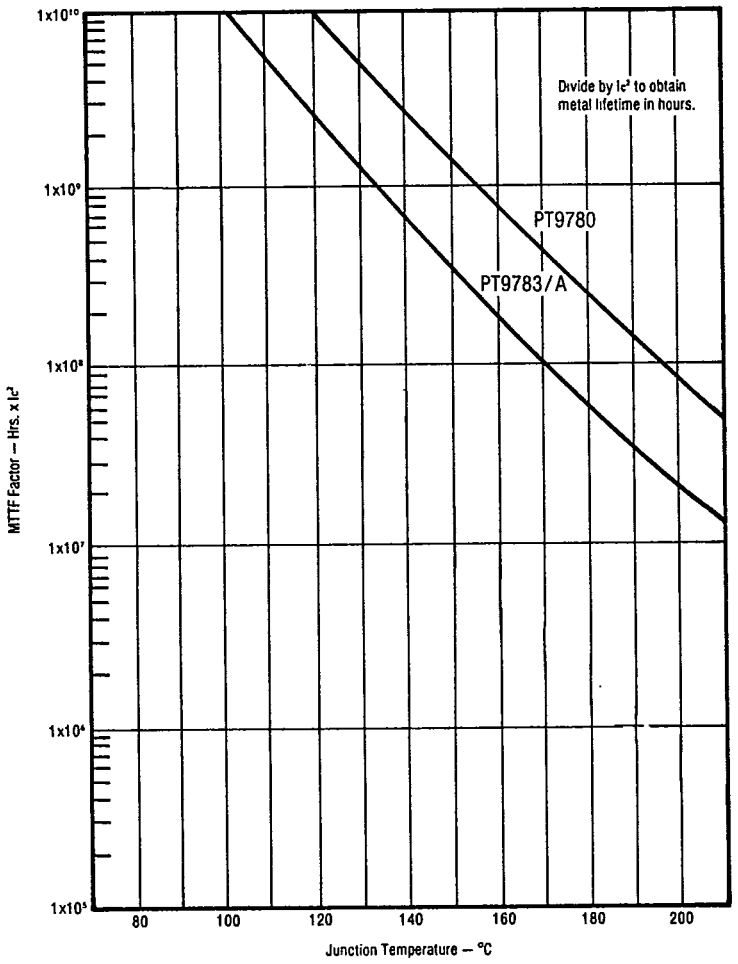
Series Input Impedance vs Frequency



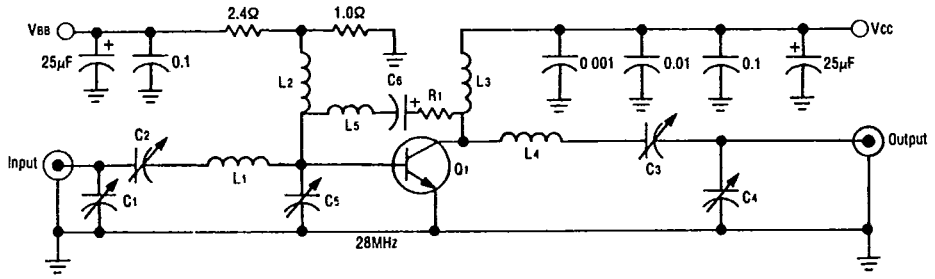
Series Load Impedance vs Frequency



MTTF Factor
vs Junction Temperature

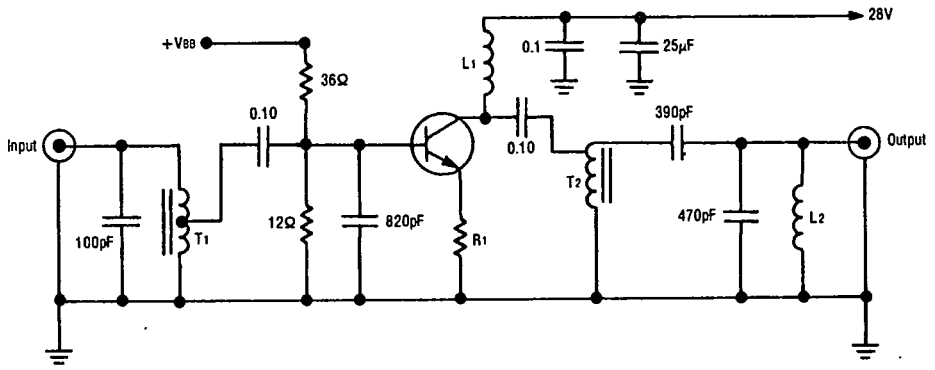


28MHz Test Circuit



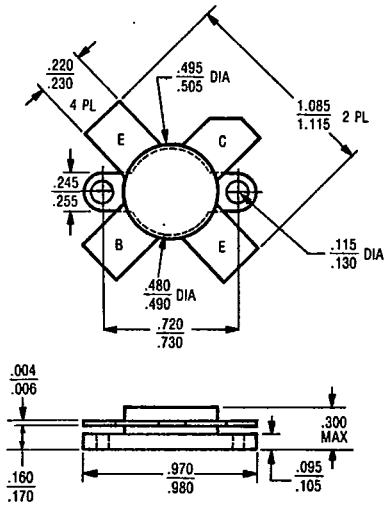
C1 ARCO #467, 110-580pF
C2 3 4 ARCO #466, 80-480pF
C5 ARCO #469, 170-780pF
C6 5µF, 50V ELE
R1 50Ω, 2W
L1 4 5 turns #14 tinned copper, 0.5" mean diameter, 1 equals 1.0"
L2 10 turns #18AWG, 0.5" mean diameter
L3 4 turns #20AWG through two Stackpole #23-1838 cores
L5 6.8µH molded
Vcc 28V
VBB 1.6 volts (Ic[Quies] = 100mA)

28MHz Test Circuit



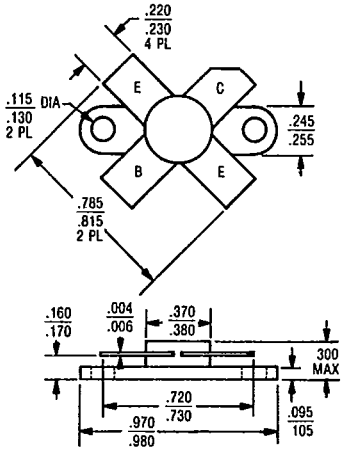
R1 1.0Ω on each emitter (0.5Ω)
T1 6 turns, #22 wire tapped 2 turns from ground, on Fairrite Products #43 bead.
T2 4 turns, #20 wire tapped 3½ turns from ground, on Fairrite Products #43 bead.
L1 1.0µH
L2 0.05µH

PT 9780



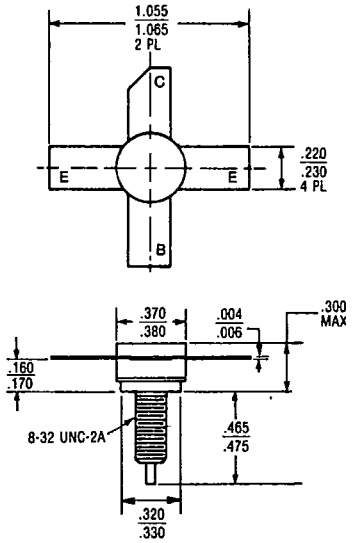
.500 SOE F

PT 9783



.380 SOE F

PT 9783A



Dimensions in inches .380 SOE