MITSUBISHI RF POWER TRANSISTOR

2SC3001

NPN EPITAXIAL PLANAR TYPE

DESCRIPTION

2SC3001 is a silicon NPN epitaxial planar type transistor specifically designed for VHF power amplifier applications.

FEATURES

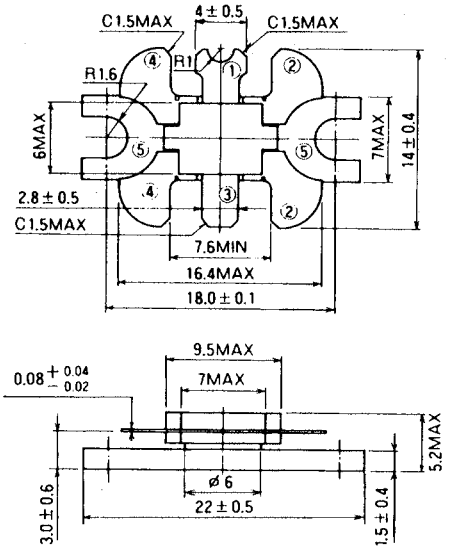
- High power gain: $G_{pe} \geqq 13$dB.
  @$V_{CC}=7.2$V, f=175MHz, $P_{in}=0.3$W.
- Emitter ballasted construction.
- High ruggedness: Ability to withstand more than 20:1 load VSWR when operated at $V_{CC}=9$V, f=175MHz, $P_O=6.0$W.
- Flange type ceramic package.
- $Z_{in}=1.5-j1.3\Omega$, $Z_{out}=5.0-j1.2\Omega$
  @$V_{CC}=7.2$V, f=175MHz, $P_O=6.0$W.

APPLICATION

For output stage of 5W power amplifiers in VHF band portable type radio sets.

OUTLINE DRAWING

Dimensions in mm



PIN :
① COLLECTOR
② EMITTER (FLANGE)
③ BASE
④ EMITTER (FLANGE)
⑤ FIN (EMITTER)

T-31E

ABSOLUTE MAXIMUM RATINGS ($T_C=25°C$)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CBO}	Collector to base voltage		20	V
V_{EBO}	Emitter to base voltage		3.5	V
V_{CEO}	Collector to emitter voltage	$R_{BE}=\infty$	9	V

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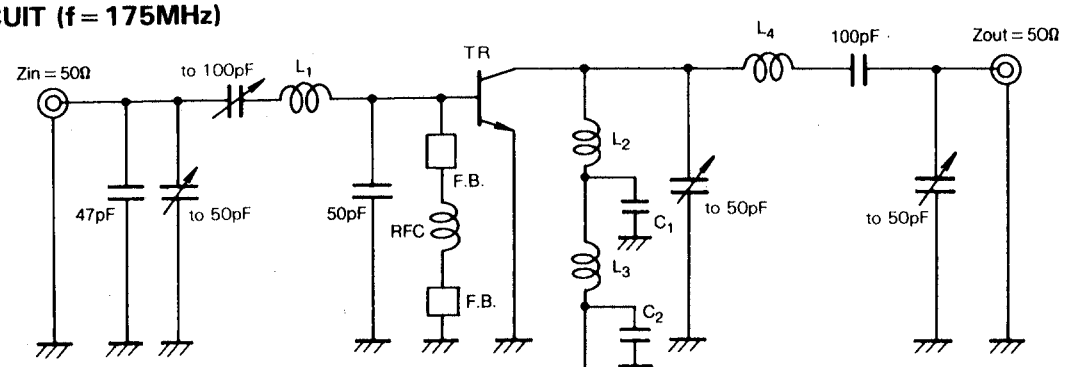
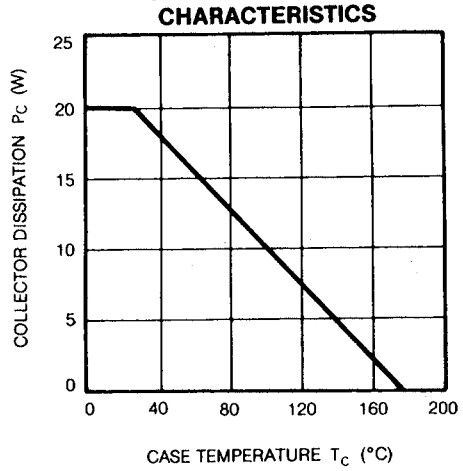
TEST CIRCUIT (f = 175MHz)



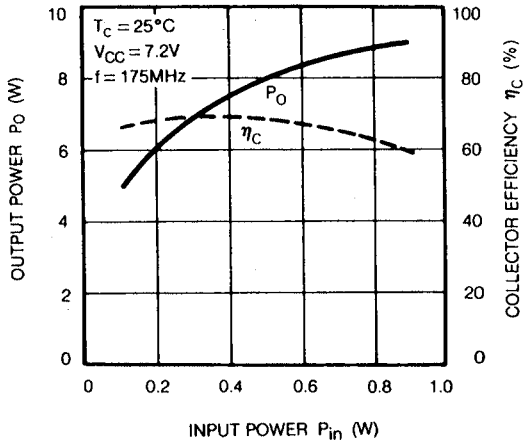
L_1: 10mm Length AWG #13
L_2: 4 Turns AWG #13, 10mm I.D.
L_3: 6 Turns AWG #13, 10mm I.D.
L_4: 1/2 Turn AWG #13, 12mm I.D.
RFC: 40 Turns AWG #32 Enameled wire Close Wound on 4mm O.D.
14mm Length Bakelite.
C_1: 220pF, 1000pF, 4700pF, 10μF in parallel.
C_2: 220pF, 1000pF, 4700pF, 10μF in parallel.

TYPICAL PERFORMANCE DATA

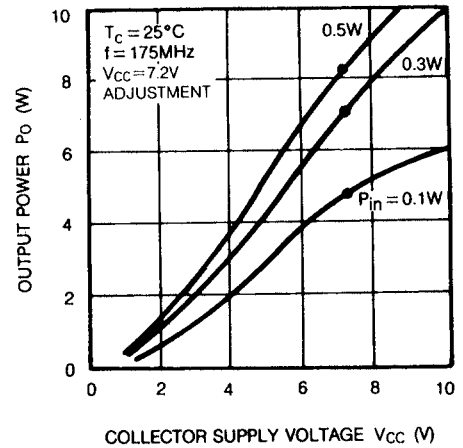
COLLECTOR DISSIPATION VS. CASE TEMPERATURE CHARACTERISTICS



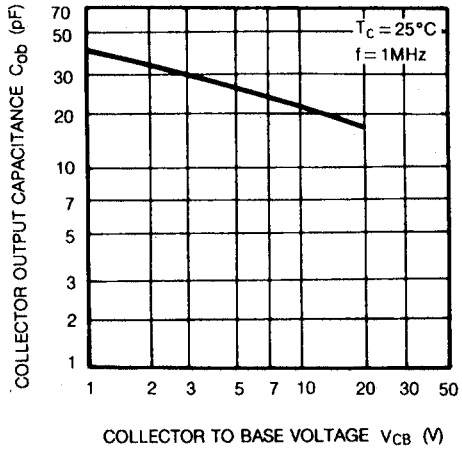
OUTPUT POWER, COLLECTOR EFFICIENCY VS. INPUT POWER CHARACTERISTICS.



OUTPUT POWER VS. COLLECTOR SUPPLY VOLTAGE CHARACTERISTICS



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE CHARACTERISTICS



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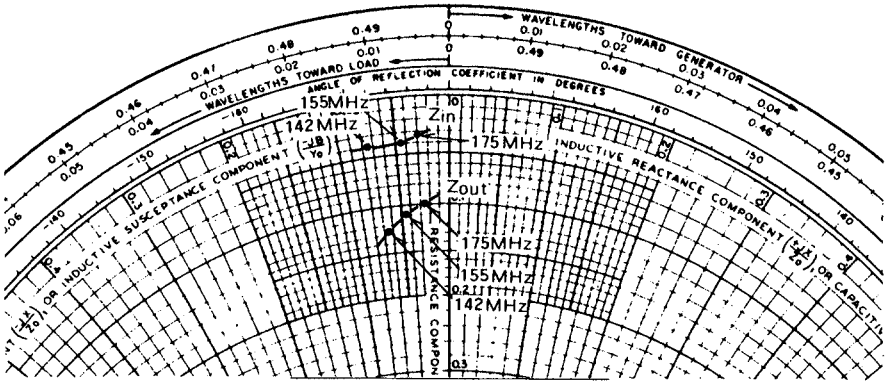
INPUT/OUTPUT IMPEDANCE VS. FREQUENCY CHARACTERISTICS



f (MHz)	Zin (Ω)	Zout (Ω)
142	2.0—j3.6	6.0—j3.2
155	1.8—j2.0	5.4—j2.3
175	1.5—j1.3	5.0—j1.2
V_{CC}=7.2V, P_O=6W		