

MITSUBISHI RF POWER TRANSISTOR  
**2SC2539**

**NPN EPITAXIAL PLANAR TYPE**

**DESCRIPTION**

2SC2539 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers in VHF band mobile radio applications.

**FEATURES**

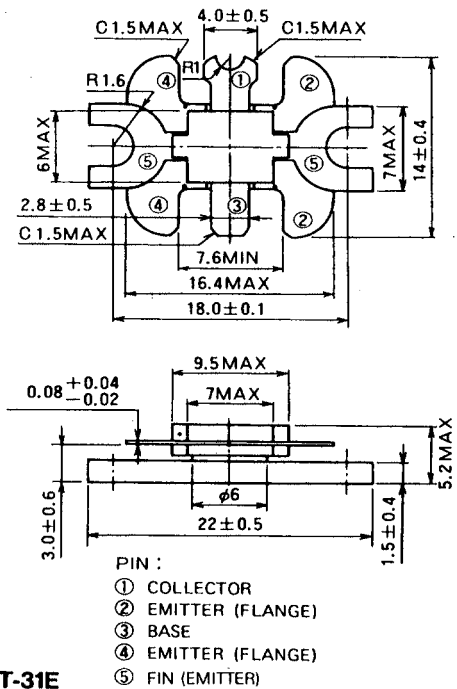
- High power gain:  $G_{pe} \geq 14.5\text{dB}$   
@  $V_{CC} = 13.5\text{V}$ ,  $P_O = 14\text{W}$ ,  $f = 175\text{MHz}$
- Emitter ballasted construction and gold metallization for high reliability and good performances.
- Low thermal resistance ceramic package with flange.
- Ability of withstanding more than 20:1 load VSWR when operated at  $V_{CC} = 15.2\text{V}$ ,  $P_O = 18\text{W}$ ,  $f = 175\text{MHz}$ ,  $T_C = 25^\circ\text{C}$ .
- Equivalent input/output series impedance:  
 $Z_{in} = 1.7 - j4.4\Omega$  @  $P_O = 14\text{W}$ ,  $V_{CC} = 13.5\text{V}$ ,  $f = 175\text{MHz}$   
 $Z_{out} = 6 - j7.4\Omega$

**APPLICATION**

10 to 14 watts output power amplifiers in VHF band mobile radio applications.

**OUTLINE DRAWING**

Dimensions in mm



T-31E

**ABSOLUTE MAXIMUM RATINGS** ( $T_C = 25^\circ\text{C}$  unless otherwise specified)

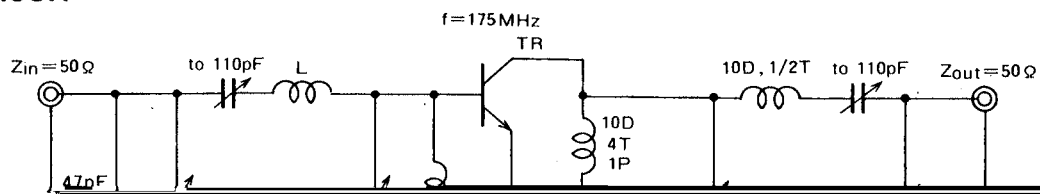
| Symbol | Parameter | Conditions | Ratings | Unit |
|--------|-----------|------------|---------|------|
|--------|-----------|------------|---------|------|

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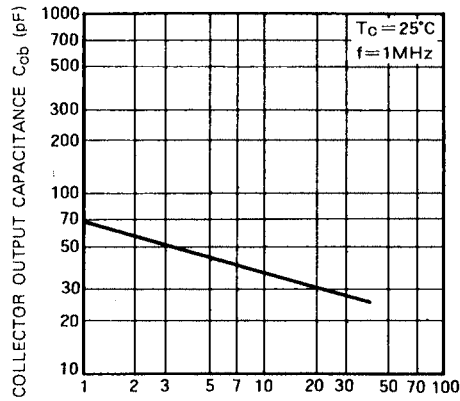
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**TEST CIRCUIT**

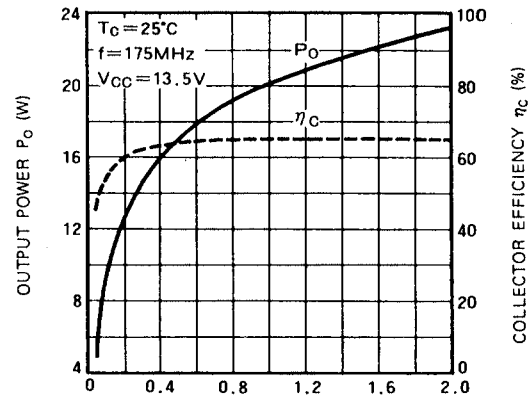


**COLLECTOR OUTPUT CAPACITANCE VS.  
COLLECTOR TO BASE VOLTAGE**



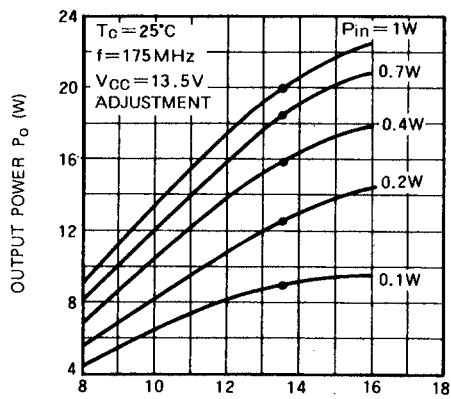
COLLECTOR TO BASE VOLTAGE  $V_{CB}$  (V)

**OUTPUT POWER, COLLECTOR  
EFFICIENCY VS. INPUT POWER**



INPUT POWER  $P_{in}$  (W)

**OUTPUT POWER VS. COLLECTOR  
SUPPLY VOLTAGE**



COLLECTOR SUPPLY VOLTAGE  $V_{CC}$  (V)