

MITSUBISHI RF POWER TRANSISTOR

2SC2627

NPN EPITAXIAL PLANAR TYPE

DESCRIPTION

2SC2627 is a silicon NPN epitaxial planar type transistor designed for RF power amplifiers in VHF band mobile radio applications.

FEATURES

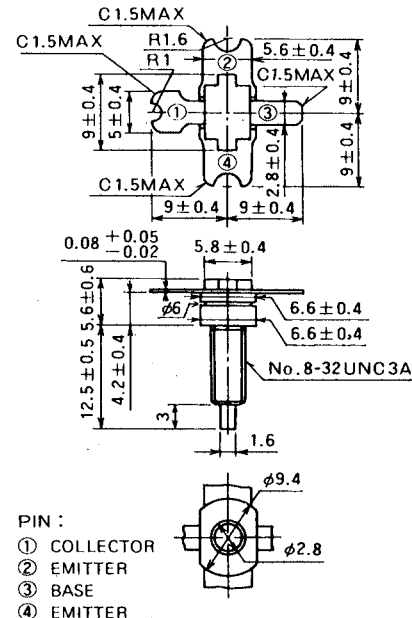
- High power gain: $G_{pe} \geq 13\text{dB}$
@ $V_{CC} = 12.5\text{V}$, $P_O = 5\text{W}$, $f = 175\text{MHz}$
- Emitter ballasted construction and gold metallization for high reliability and good performances.
- Low thermal resistance ceramic package with stud.
- Ability of withstanding more than 20:1 load VSWR when operated at $V_{CC} = 15.2\text{V}$, $P_O = 6\text{W}$, $f = 175\text{MHz}$, $T_C = 25^\circ\text{C}$.
- Equivalent input/output series impedance:
 $Z_{in} = 2.9 + j0.5\Omega$ @ $P_O = 6\text{W}$, $V_{CC} = 12.5\text{V}$, $f = 175\text{MHz}$
 $Z_{out} = 11 - j1.9\Omega$

APPLICATION

4 to 5 watts output power amplifiers in VHF band mobile radio applications.

OUTLINE DRAWING

Dimensions in mm

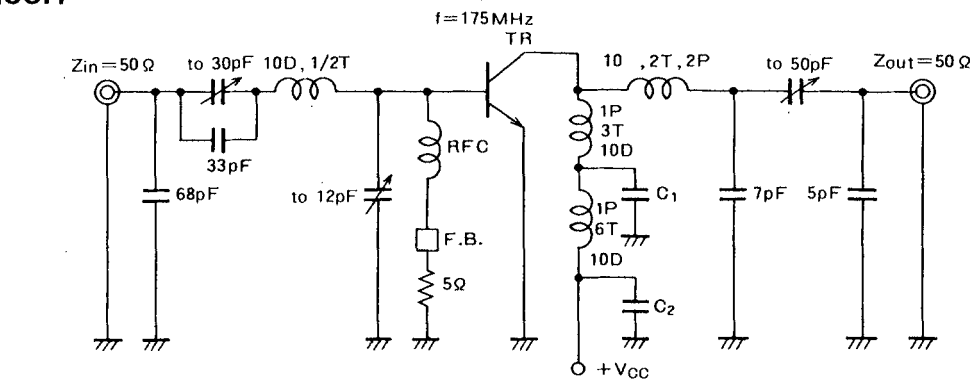


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NOTE: ALL ELECTRODES ARE ISOLATED FROM FLANGE.

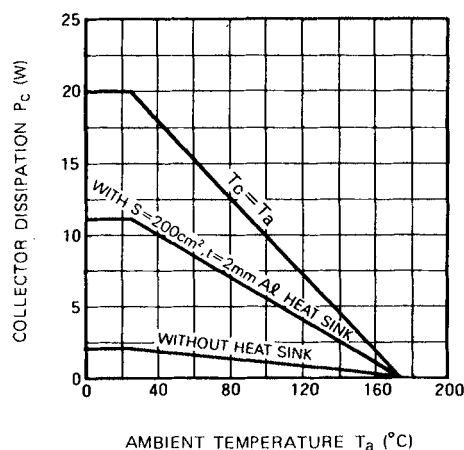
2SC2627

TEST CIRCUIT



Notes: All coils are made from 1.5mm ϕ silver plated copper wire
D: Inner diameter of coil
T: Turn number of coil
P: Pitch of coil
Dimension in milli-meter

COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



Graph of Collector Current I_C (A) vs. Collector to Emitter Voltage V_{CE} (V) for a 2N4350 PNP transistor. The graph shows several curves for base current I_B values: 0, 2mA, 4mA, 6mA, 8mA, 10mA, 12mA, and 14mA. The temperature T_C is 25°C. The curves show that I_C increases with V_{CE} and is approximately equal to I_B for $V_{CE} > 10V$.

Graph showing Collector to Emitter Breakdown Voltage ($V_{BR(CE)}$) versus Base to Emitter Resistance (R_{BE}) for the 2N3866 JFET. The conditions are $T_C = 25^\circ\text{C}$ and $I_C = 50\text{ mA}$.

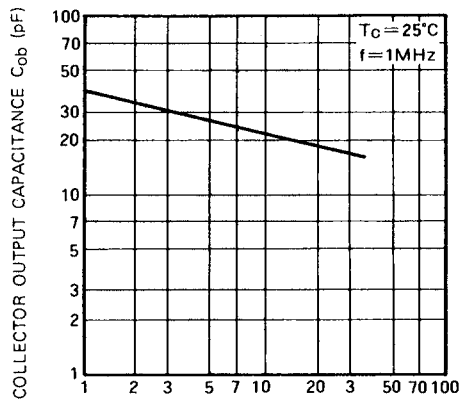
Base to Emitter Resistance R_{BE} (Ω)	Collector to Emitter Breakdown Voltage $V_{BR(CE)}$ (V)
10	62
20	61
30	60
50	58
100	42
200	35
500	28
1k	25
2k	23
3k	22
5k	21
10k	21

Graph showing DC current gain h_{FE} versus collector current I_C (A) for a 2N3866 JFET. The graph is plotted for $T_C = 25^\circ\text{C}$ and $V_{CE} = 10\text{V}$. The x-axis is logarithmic, ranging from 0.01 A to 10 A. The y-axis is linear, ranging from 0 to 200. The curve shows that h_{FE} increases with I_C up to approximately 3 A, after which it slightly decreases.

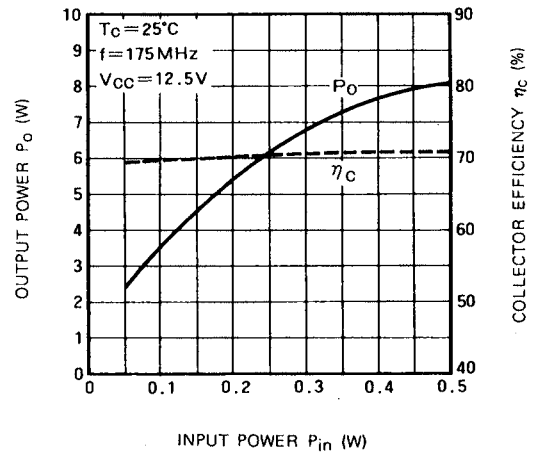
Collector Current I_C (A)	DC Current Gain h_{FE}
0.01	40
0.02	55
0.05	75
0.1	85
0.2	95
0.5	105
1	110
2	115
3	115
5	110

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



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



**OUTPUT POWER VS. COLLECTOR
SUPPLY VOLTAGE**

