

DESCRIPTION

2SC2932 is a silicon NPN epitaxial planar type transistor specifically designed for power amplifiers applications in 800–940 MHz UHF band.

FEATURES

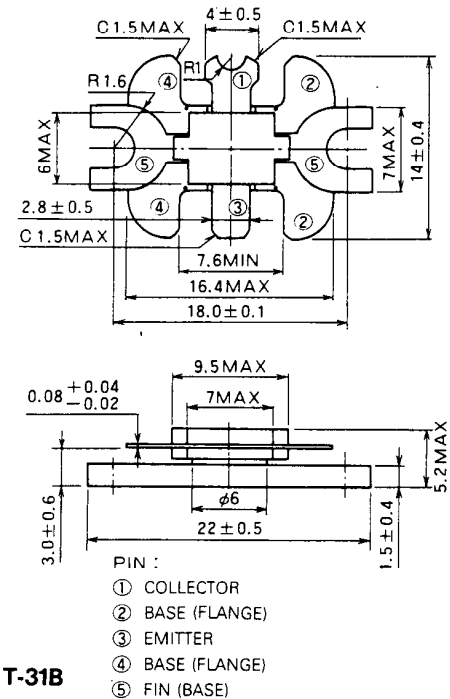
- High power gain: $G_p \geq 7.8\text{dB}$, $P_o \geq 6\text{W}$
@ $f = 900\text{MHz}$, $V_{CC} = 12.5\text{V}$
- Emitter ballasted construction
- Gold metalization die in the transistor
- High ruggedness high reliability: Ability to withstand 20:1 load VSWR when operated at $V_{CC}=15.2\text{V}$, $P_o=6\text{W}$, $f=900\text{MHz}$.
- Small size, low common lead inductance strip line type ceramic package.
- Common base configuration.
- Series equivalent input/output impedance
 $Z_{in} = 2.8-j1.4 (\Omega)$, $Z_{out} = 4.7-j5.9 (\Omega)$
Operated at $f = 900\text{MHz}$, $V_{CC} = 12.5\text{V}$, $P_o = 6\text{W}$

APPLICATION

RF power amplifiers applications in 800 to 940 MHz mobile radio sets.

OUTLINE DRAWING

Dimensions in mm



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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CB0}	Collector to base voltage		35	V
V_{EB0}	Emitter to base voltage		3	V
V_{CE0}	Collector to emitter voltage	$R_{BE} = \infty$	17	V
I_C	Collector current		2	A
P_C	Collector dissipation	$T_C = 25^\circ\text{C}$	20	W
T_J	Junction temperature		175	$^\circ\text{C}$
T_{stg}	Storage temperature		-55 to 175	$^\circ\text{C}$
R_{th-c}	Thermal resistance	Junction to case	7.5	$^\circ\text{C/W}$

Note. Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise specified)

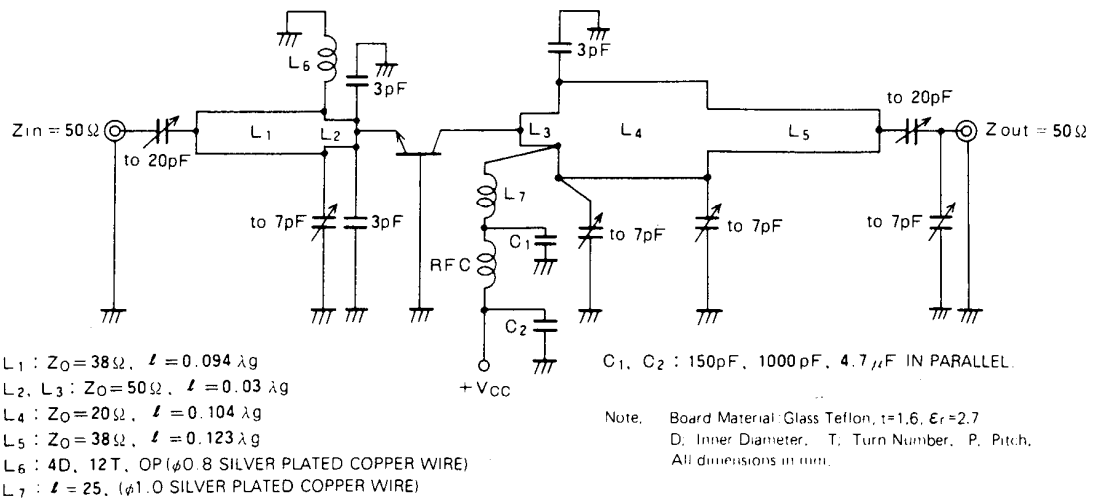
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	$I_E = 10\text{mA}$, $I_C = 0$	3			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	35			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	$I_C = 0.1\text{A}$, $R_{BE} = \infty$	17			V
I_{CBO}	Collector cut-off current	$V_{CB} = 15\text{V}$, $I_E = 0$			2	mA
I_{EBO}	Emitter cut-off current	$V_{EB} = 2\text{V}$, $I_C = 0$			2	mA
h_{FE}	DC Current gain *	$V_{CE} = 10\text{V}$, $I_C = 0.1\text{A}$	10	30	180	—
P_O	Output power	$f = 900\text{MHz}$, $V_{CC} = 12.5\text{V}$, $P_{in} = 1\text{W}$	6	7		W
η_C	Collector efficiency		55	65		%

Note. *Pulse test, $P_W = 150\mu\text{s}$, duty=5%.

Above parameters, ratings, limits and conditions are subject to change.

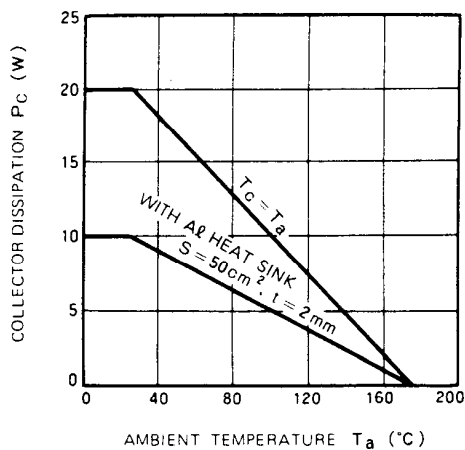
NPN EPITAXIAL PLANAR TYPE

TEST CIRCUIT (f=900MHz)

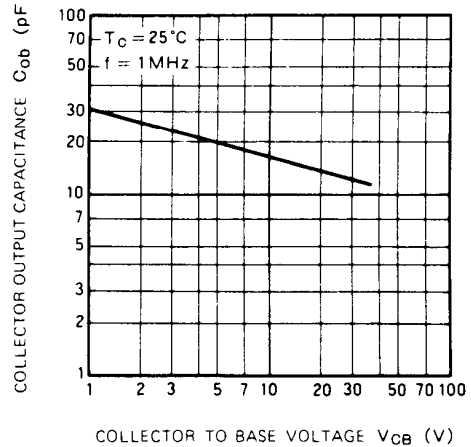


TYPICAL PERFORMANCE DATA

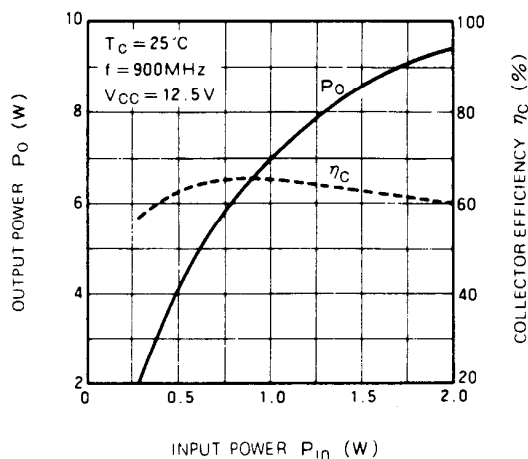
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



OUTPUT POWER, COLLECTOR EFFICIENCY VS. INPUT POWER



OUTPUT POWER VS. COLLECTOR SUPPLY VOLTAGE

