

# 2SC1965A

NPN EPITAXIAL PLANAR TYPE

## DESCRIPTION

2SC1965A is a silicon NPN epitaxial planar type transistor designed for industrial use RF power amplifiers on VHF band mobile radio applications.

## FEATURES

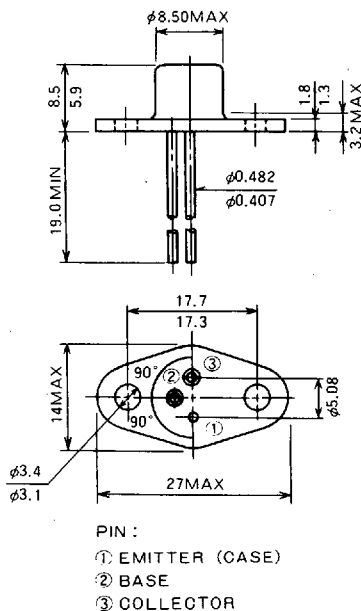
- High power gain :  $G_{pe} \geq 10\text{dB}$ , @  $V_{cc} = 13.5\text{V}$ ,  $f = 175\text{MHz}$ ,  $P_o = 6\text{W}$
- Tc-17 metal sealed package for high reliability.
- Emitter ballasted construction for good performances.
- Emitter electrode is connected electrically to the case.
- Load mismatch: Ability to withstand more than 20:1 load VSWR when operated at  $V_{cc} = 15.2\text{V}$ ,  $P_o = 6\text{W}$ ,  $f = 175\text{MHz}$ ,  $T_c = 25^\circ\text{C}$

## APPLICATIONS

4W power amplifiers in VHF band mobile radio applications.

## OUTLINE DRAWING

Dimension in mm



TC-17

## ABSOLUTE MAXIMUM RATINGS (Tc = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>CB0</sub>	Collector-base voltage		40	V
V <sub>EB0</sub>	Emitter-base voltage		4	V
V <sub>CE0</sub>	Collector-emitter voltage	R <sub>BE</sub> = ∞	17	V
I <sub>c</sub>	Collector current		2	A
P <sub>c</sub>	Collector dissipation	T <sub>a</sub> = 25°C T <sub>c</sub> = 25°C	1.5 15	W
T <sub>j</sub>	Junction temperature		175	°C
T <sub>stg</sub>	Storage temperature		-65 to 175	°C
R <sub>th-c</sub>	Thermal resistance	Junction to ambient Junction to case	100 10	°C/W °C/W

Note. Above parameters are guaranteed independently.

## ELECTRICAL CHARACTERISTICS (Tc = 25°C unless otherwise noted)

Symbol	Parameter	Test conditions	Limits		Unit
			Min	Max	
V <sub>(BR)CB0</sub>	Collector-base breakdown voltage	I <sub>c</sub> = 10mA, I <sub>E</sub> = 0	40		V
V <sub>(BR)EB0</sub>	Emitter-base breakdown voltage	I <sub>E</sub> = 5mA, I <sub>c</sub> = 0	4		V
V <sub>(BR)CE0</sub>	Collector-emitter breakdown voltage	I <sub>c</sub> = 50mA, R <sub>BE</sub> = ∞	17		V
I <sub>c0</sub>	Collector cutoff current	V <sub>CB</sub> = 25V, I <sub>E</sub> = 0		0.5	mA
I <sub>E0</sub>	Emitter cutoff current	V <sub>EB</sub> = 3V, I <sub>c</sub> = 0		0.5	mA
h <sub>FE</sub>	DC forward current gain	V <sub>CE</sub> = 10V, I <sub>c</sub> = 0.1A	10	180	-
P <sub>o</sub>	Output power	V <sub>cc</sub> = 13.5V, f = 175MHz, P <sub>in</sub> = 0.6W	6		W
η <sub>c</sub>	Collector efficiency		50		%

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