

# SILICON POWER TRANSISTOR 2SC1449

## AF POWER AMPLIFIER AND RF POWER AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR

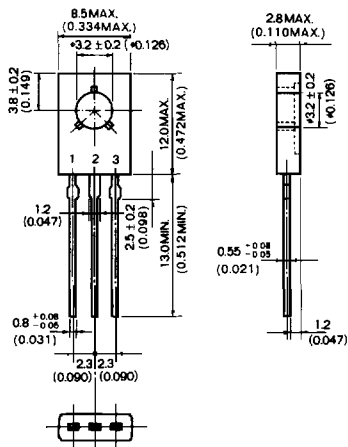
### DESCRIPTION

The 2SC1449 is an NPN general purpose transistor designed for use in audio and radio frequency power amplifiers.

### FEATURES

- Suitable for use in output stage of 3-watt audio amplifiers.
- High current:  $I_C$ : 2.0A,  $I_C(\text{pulse})$ : 3.0A
- The smallest package in 3 watt class power transistor.

### PACKAGE DIMENSIONS in millimeters (inches)



1. Emitter
2. Collector connected to mounting plane
3. Base

### ABSOLUTE MAXIMUM RATINGS

#### Maximum Voltages and Currents ( $T_a = 25^\circ\text{C}$ )

Collector to Base Voltage	$V_{CB0}$	40	V
Collector to Emitter Voltage	$V_{CE0}$	35	V
Emitter to Base Voltage	$V_{EB0}$	5.0	V
Collector Current (DC)	$I_C$	2.0	A
Collector Current (pulse)	$I_C(\text{pulse})^*$	3.0	A

#### Maximum Power Dissipations

Total Power Dissipation	$P_T$	1.0	W
Total Power Dissipation (at $25^\circ\text{C}$ case temperature)	$P_T$	10	W

#### Maximum Temperatures

Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature	$T_j$	150	$^\circ\text{C}$

\* Pulse condition : pulse width  $\leq 10\text{ms}$ , duty cycle  $\leq 50\%$ .

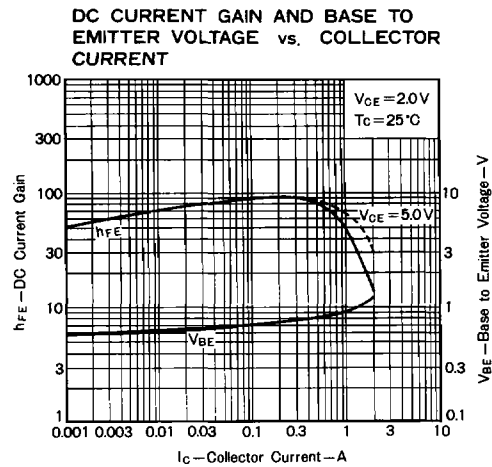
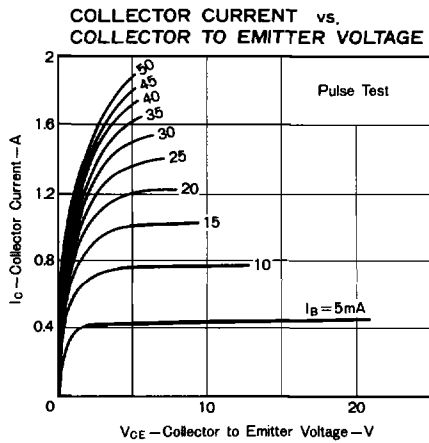
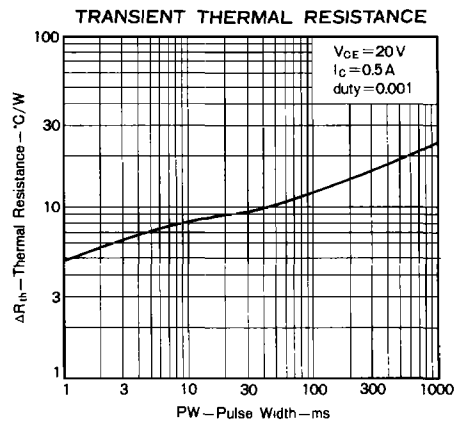
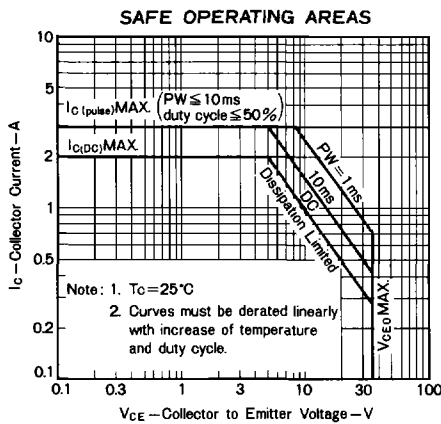
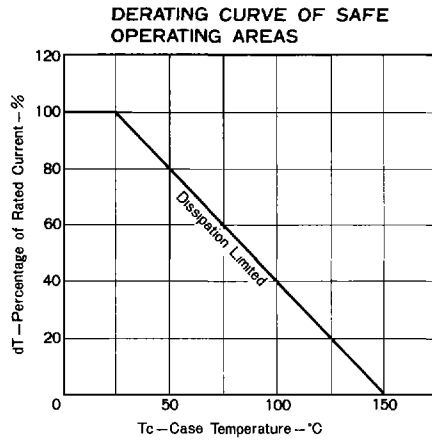
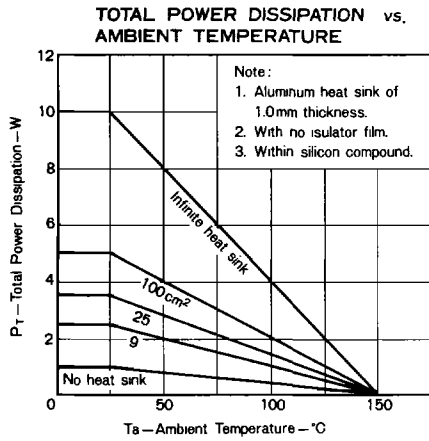
### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CB0}$			0.5	$\mu\text{A}$	$V_{CB} = 35\text{V}$ , $I_E = 0$
Emitter Cutoff Current	$I_{EB0}$			0.5	$\mu\text{A}$	$V_{EB} = 3.0\text{V}$ , $I_C = 0$
DC Current Gain	$h_{FE}$	40	90	250		$V_{CE} = 2.0\text{V}$ , $I_C = 300\text{mA}$ *
Collector Saturation Voltage	$V_{CE(\text{sat})}$		0.2	0.7	V	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$ *
Base Saturation Voltage	$V_{BE(\text{sat})}$		0.9	1.5	V	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$ *
Gain Bandwidth Product	$f_T$		55		MHz	$V_{CE} = 5.0\text{V}$ , $I_C = 100\text{mA}$
Output Capacitance	$C_{ob}$		20		pF	$V_{CB} = 10\text{V}$ , $I_E = 0$ , $f = 1\text{MHz}$

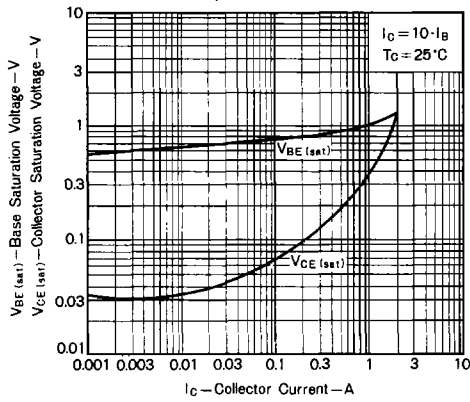
\* Pulse test: pulse width  $\leq 350\mu\text{s}$ , duty cycle  $\leq 2\%$ .

$h_{FE}$  Classification: N; 40-80, M; 60-120, L; 80-160, K; 120-250.

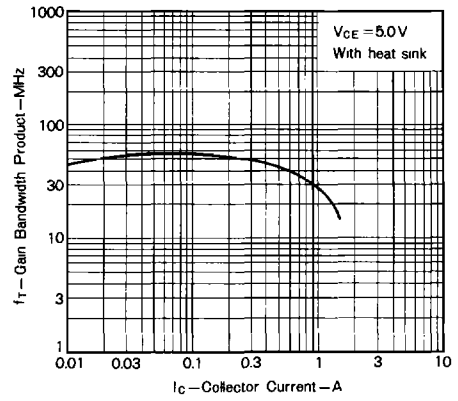
TYPICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless otherwise noted)



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

