

SILICON POWER TRANSISTORS

2SB536, 2SB537/2SD381, 2SD382

AUDIO FREQUENCY POWER AMPLIFIER AND LOW SPEED SWITCHING PNP/NPN SILICON EPITAXIAL TRANSISTOR

DESCRIPTION

The 2SB536, 2SB537 and 2SD381, 2SD382 are silicon epitaxial transistors intended for a wide variety of switching and amplifier applications.

These devices are especially suitable for use in the driver stage of 60 to 100 watts complimentary-symmetrical audio amplifier applications.

The 2SB537 and 2SD382 have formed emitter and base leads for easy insertion into TO-66 sockets.

FEATURES

- High breakdown voltage
- High f_T
- Wide safe-operating area

ABSOLUTE MAXIMUM RATINGS

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

		2SB536, 2SB537	2SD381, 2SD382	
Collector to Base Voltage	V_{CBO}	-130	130	V
Collector to Emitter Voltage	V_{CEO}	-120	120	V
Emitter to Base Voltage	V_{EBO}	-5.0	5.0	V
Collector Current	$I_C(\text{DC})$	-1.5	1.5	A
Collector Current	$I_C(\text{pulse})^*$	-3.0	3.0	A
Base Current	$I_B(\text{DC})$	-0.3	0.3	A
Maximum Power Dissipations				
Total Power Dissipation				
at Case Temperature	$P_T(T_c = 25^\circ\text{C})$	20	20	W
at Ambient Temperature	$P_T(T_a = 25^\circ\text{C})$	1.5	1.5	W
Maximum Temperatures				
Junction Temperature	T_j	150	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, duty cycle $\leq 50\%$

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

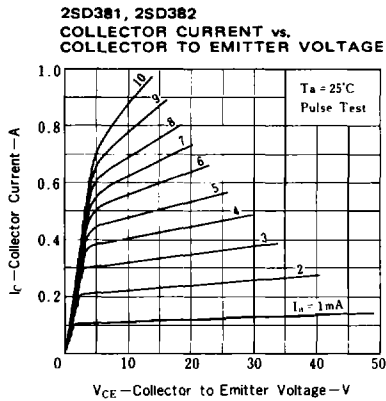
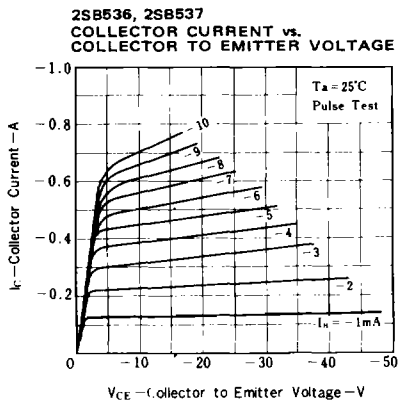
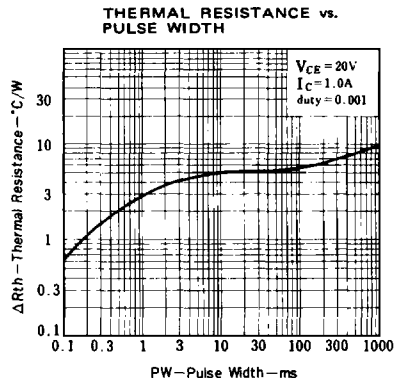
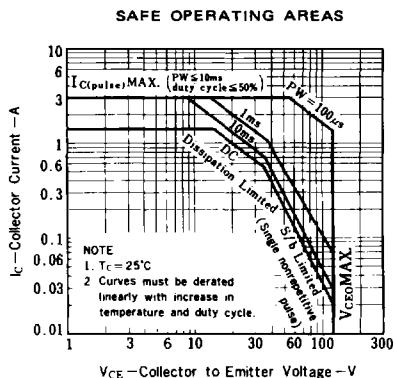
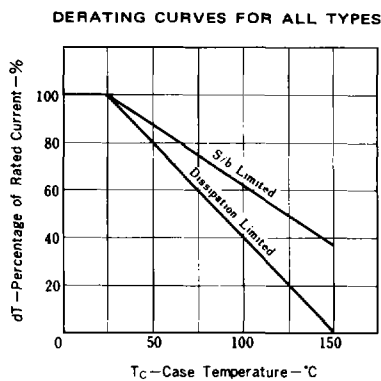
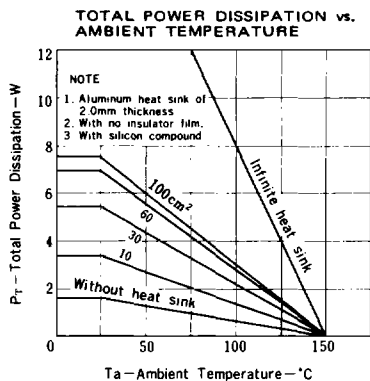
2SB536, 2SB537/2SD381, 2SD382

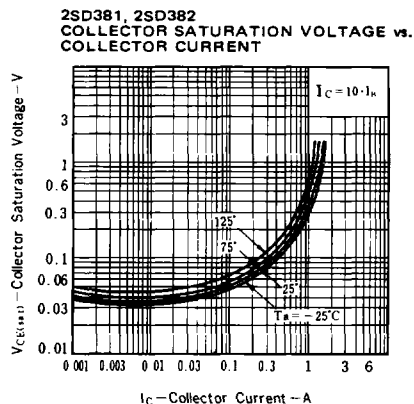
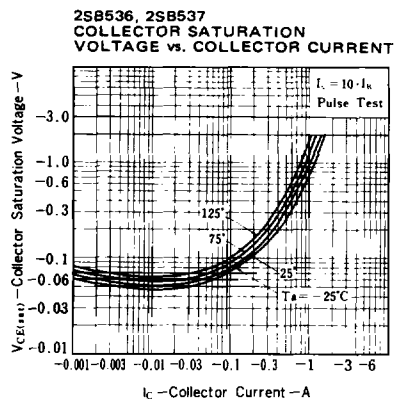
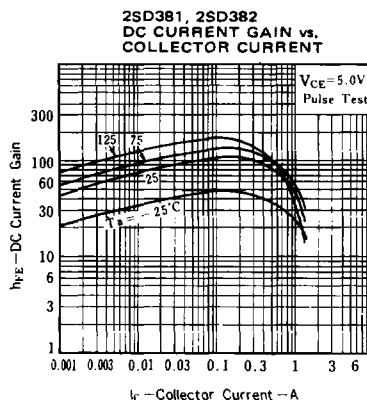
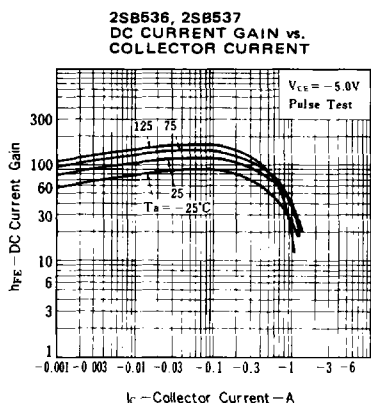
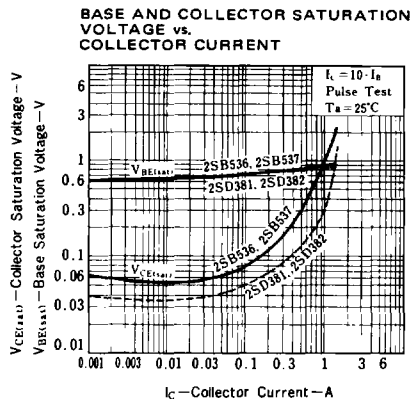
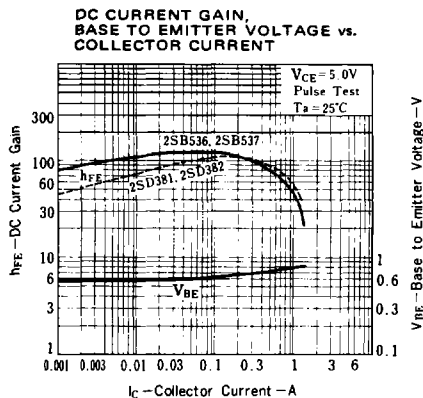
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-1.0/1.0	μA	$V_{CB} = 120\text{V}$, $I_B = 0$
Emitter Cutoff Current	I_{EBO}			-1.0/1.0	μA	$V_{EB} = 3.0\text{V}$, $I_C = 0$
DC Current Gain	h_{FE1}	25	100/65			$V_{CE} = 5.0\text{V}$, $I_C = 5.0\text{mA}^*$
DC Current Gain	h_{FE2}	40	110	250		$V_{CE} = 5.0\text{V}$, $I_C = 0.3\text{A}^*$
Collector Saturation Voltage	$V_{CE(\text{sat})}$		-1.0/0.3	-2.0/2.0	V	$I_C = 1.0\text{A}$, $I_B = 0.1\text{A}^*$
Base Saturation Voltage	$V_{BE(\text{sat})}$		-0.9/0.9	-1.5/1.5	V	$I_C = 1.0\text{A}$, $I_B = 0.1\text{A}^*$
Gain Bandwidth Product	f_T		40/45		MHz	$V_{CE} = 5.0\text{V}$, $I_C = 0.1\text{A}$
Output Capacitance	C_{ob}		35/25		pF	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1.0\text{MHz}$

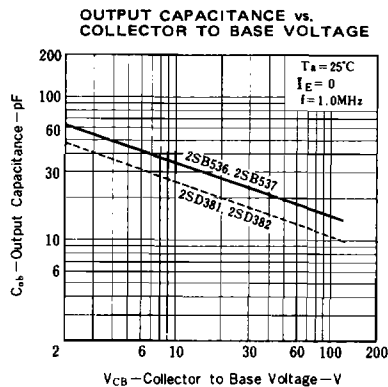
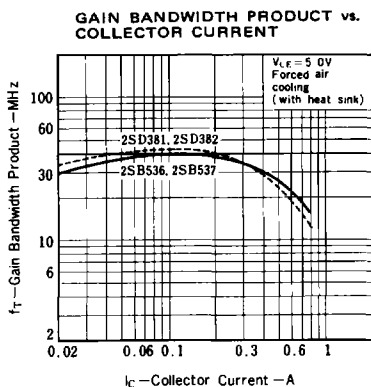
* Pulse Test/ $PW \leq 350\mu\text{s}$, duty cycle $\leq 2\%$

h_{FE} rank (h_{FE2})/N: 40 ~ 80, M: 60 ~ 120, L: 80 ~ 160, K: 120 ~ 250

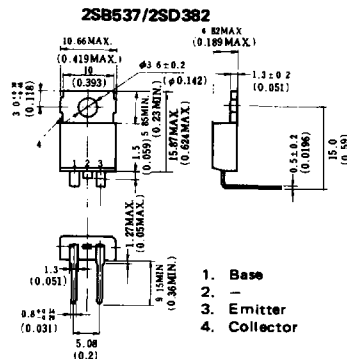
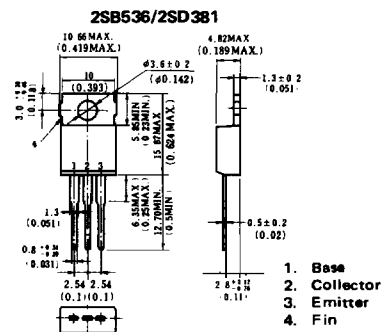
TYPICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)



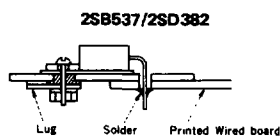
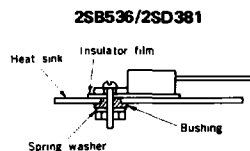




PACKAGE DIMENSIONS In millimeters (inches)



MOUNTING HARDWARES



MOUNTING HOLES

