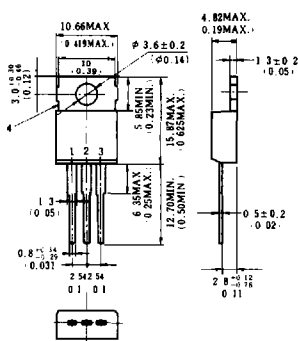


# SILICON POWER TRANSISTORS 2SB628/2SD608

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

### PACKAGE DIMENSIONS in millimeters (inches)



1. Base
2. Collector (Fin)
3. Emitter
4. Fin

### DESCRIPTION

The 2SB628/2SD608 are PNP/NPN silicon transistors suited for audio-output use.

### FEATURES

- Suitable for use in the driver stage of 100 to 150 watts Hi-Fi amplifier.
- High break-down voltage.
- High gain bandwidth product.

### ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (Ta=25°C)		2SB628	2SD608	
Collector to Base Voltage	V <sub>CB0</sub>	-160	160	V
Collector to Emitter Voltage	V <sub>CE0</sub>	-160	160	V
Emitter to Base Voltage	V <sub>EB0</sub>	-5.0	5.0	V
Collector Current (DC)	I <sub>C(DC)</sub>	-1.5	1.5	A
Collector Current (pulse)	I <sub>C(pulse)*</sub>	-3.0	3.0	A
Base Current (DC)	I <sub>B(DC)</sub>	-0.3	0.3	A
<b>Maximum Power Dissipations</b>				
<b>Total Power Dissipation</b>				
at 25°C Case Temperature	P <sub>T(Tc=25°C)</sub>	20	20	W
at 25°C Ambient Temperature	P <sub>T(Ta=25°C)</sub>	1.5	1.5	W
<b>Maximum Temperatures</b>				
Junction Temperature	T <sub>j</sub>	150	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	-55 to +150	°C

\* PW ≤ 10ms, duty cycle ≤ 50%

### ELECTRICAL CHARACTERISTICS (Ta = 25°C)

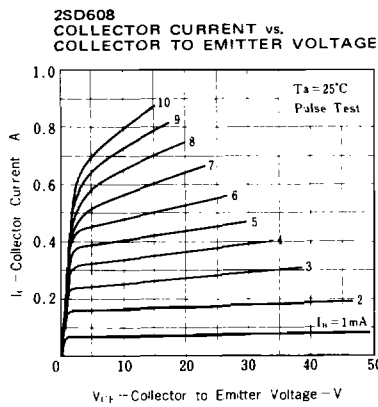
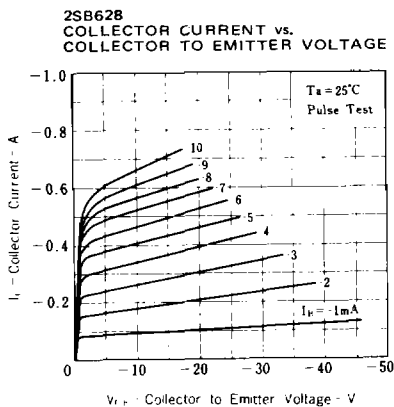
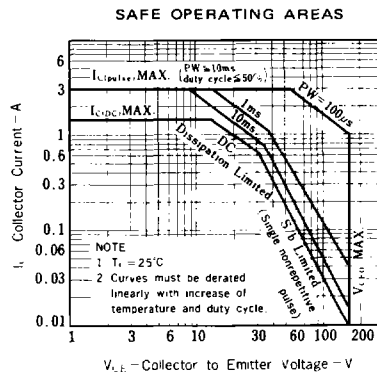
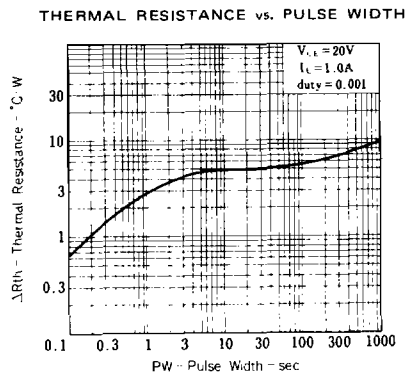
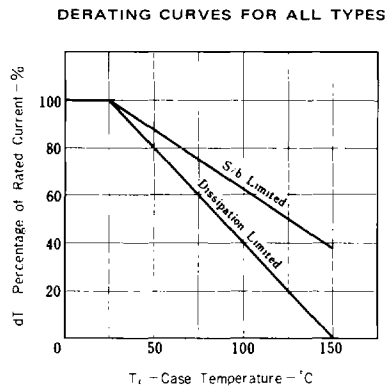
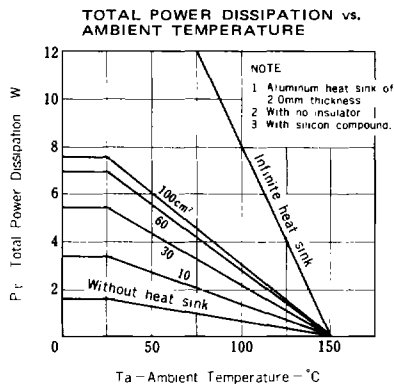
### 2SB628/2SD608

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I <sub>CB0</sub>			-1.0/1.0	μA	V <sub>CB</sub> = 120V, I <sub>E</sub> = 0
Emitter Cutoff Current	I <sub>EB0</sub>			-1.0/1.0	μA	V <sub>EB</sub> = 3.0V, I <sub>C</sub> = 0
DC Current Gain	h <sub>FE1</sub>	25	70/40			V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 5.0mA*
DC Current Gain	h <sub>FE2</sub>	40	80	200		V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 0.3A*
Collector Saturation Voltage	V <sub>CE(sat)</sub>		-1.0/0.5	-2.0/2.0	V	I <sub>C</sub> = 1.0A, I <sub>B</sub> = 0.1A*
Base Saturation Voltage	V <sub>BE(sat)</sub>		-0.9/0.9	-1.5/1.5	V	I <sub>C</sub> = 1.0A, I <sub>B</sub> = 0.1A*
Gain Bandwidth Product	f <sub>T</sub>		40/45		MHz	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 0.1A
Output Capacitance	C <sub>ob</sub>		35/25		pF	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1.0MHz

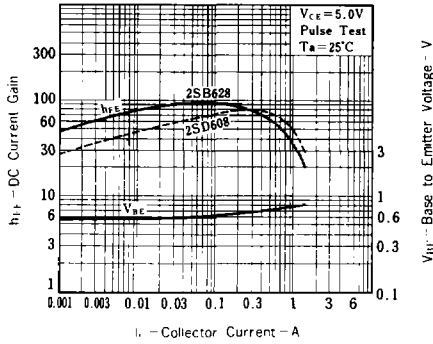
\* Pulse Test : PW ≤ 350 μs, duty cycle ≤ 2%

h<sub>FE</sub> rank (h<sub>FE2</sub>) / S : 40 ~ 80, R : 60 ~ 120, Q : 100 ~ 200

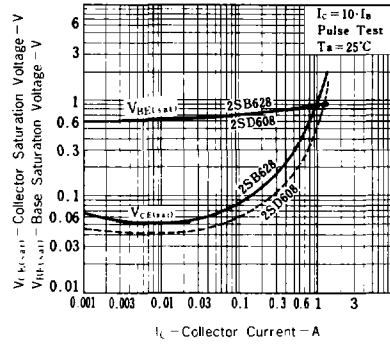
TYPICAL CHARACTERISTICS (Ta = 25°C)



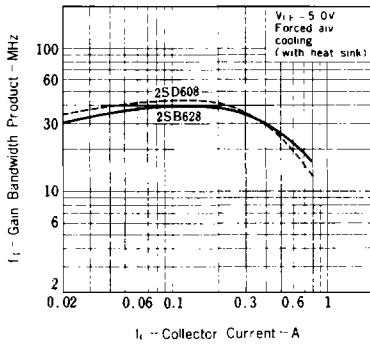
DC CURRENT GAIN AND BASE TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

