

SANYO**2SB407**

Semiconductors

ALLOY JUNCTION GERMANIUM
TRANSISTOR

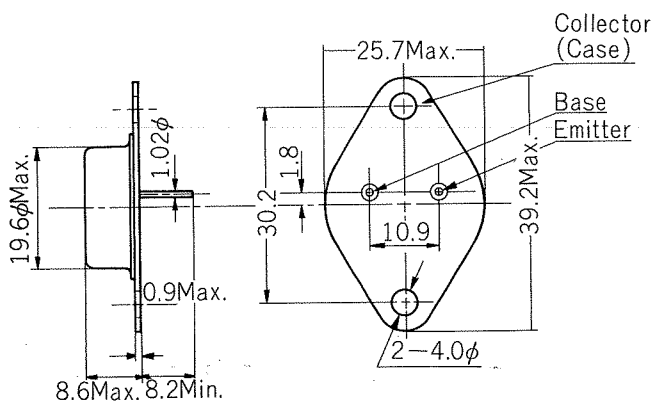
2SB407 is a P-N-P alloy-junction germanium transistor designed for high-level low distortion O.T.L. power amplifier, and it is a constant beta linearity-up to the maximum rated of-7A.

ABSOLUTE MAXIMUM RATINGS $T_a = 25^\circ\text{C}$

Parameter	Symbol	2SB407	Unit
Collector to Base Voltage	V_{CB0}	-30	V
Emitter to Base Voltage	V_{EB0}	-10	V
Collector to Emitter Voltage	V_{CER} $R_{BE} = 300\ \Omega$	-30	V
Collector Current	I_c	-7	A
Collector Power Dissipation	P_c	※ 30	W
Junction Temperature	T_j	85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ +85	$^\circ\text{C}$

※ $T_c = 25^\circ\text{C}$ **ELECTRICAL CHARACTERISTICS** $T_a = 25^\circ\text{C}$

Parameter	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector Cutoff Current	$V_{CB} = -30\text{V}, I_E = 0$	I_{CBO}			-500	μA
Emitter Cutoff Current	$V_{EB} = -10\text{V}, I_C = 0$	I_{EBO}			-500	μA
Alpha Cutoff Frequency	$V_{CB} = -1.5\text{V}, I_E = 0.2\text{A}$	$f_{\alpha b}$		500		KHz
D. C. Current Transfer Ratio	$V_{CE} = -1.5\text{V}, I_C = -1.0\text{A}$	h_{FE}	27	80	275	

OUTLINE DRAWING (Unit : mm)**2SB407 hFE Rank**

Number	Color	$V_{CE} = -1.5\text{V}, I_C = -1.0\text{A}$
2SB407	White	27 ~ 44
	Pink	36 ~ 61
	Blue	50 ~ 66
	Purple	54 ~ 74
	NO Mark	60 ~ 83
	Black	67 ~ 94
	Brown	76 ~ 110
	Red	90 ~ 140
	Orange	110 ~ 165
	Yellow	135 ~ 220
Green	180 ~ 275	

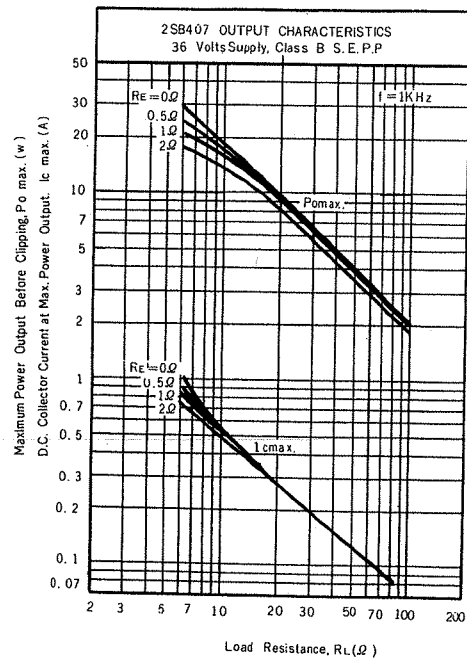
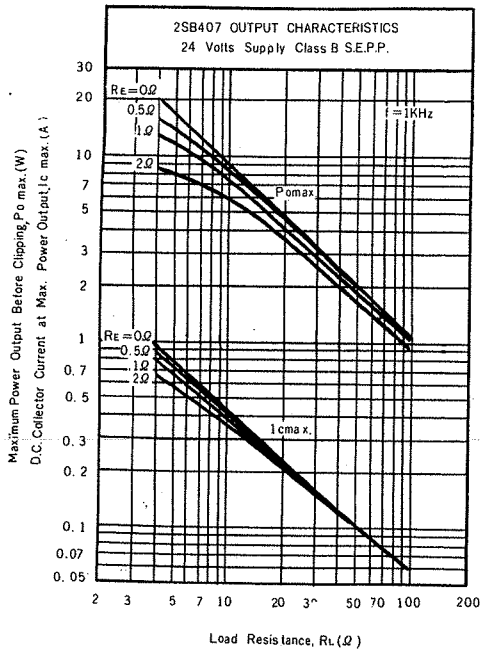
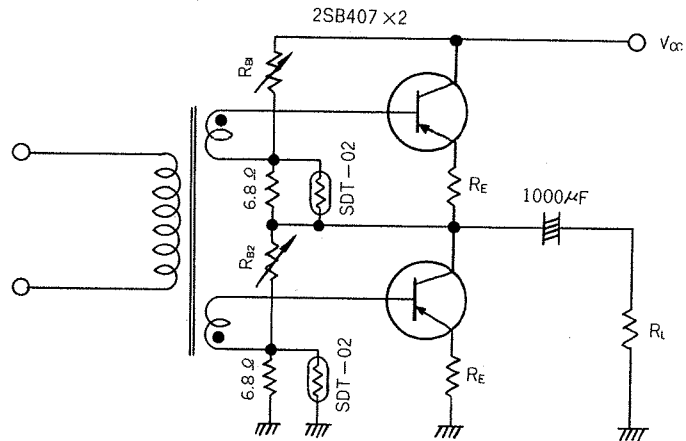
TYPICAL OPERATION CHARACTERISTICS $T_a = 25^\circ\text{C}$

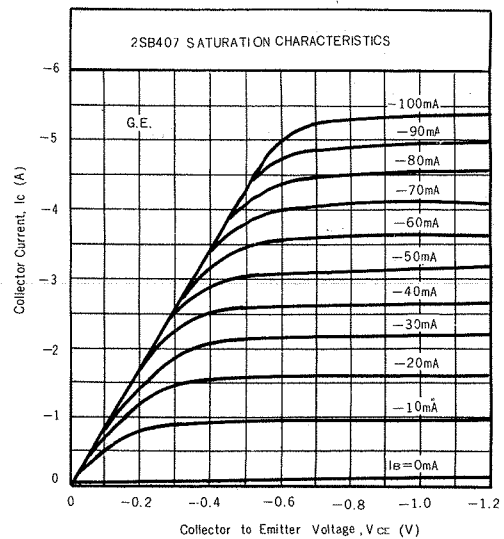
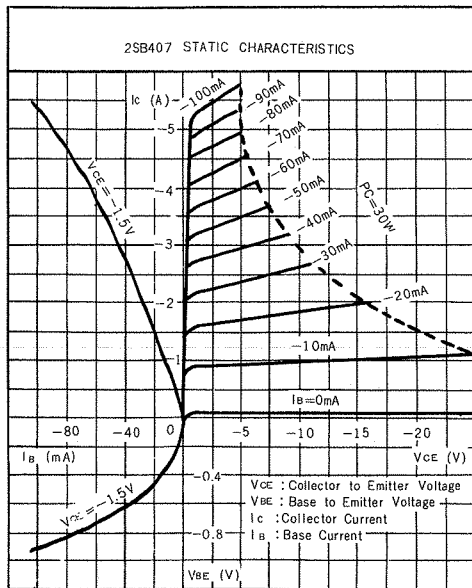
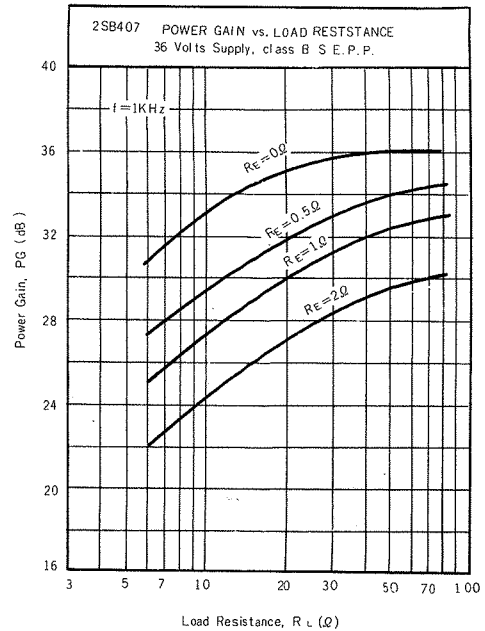
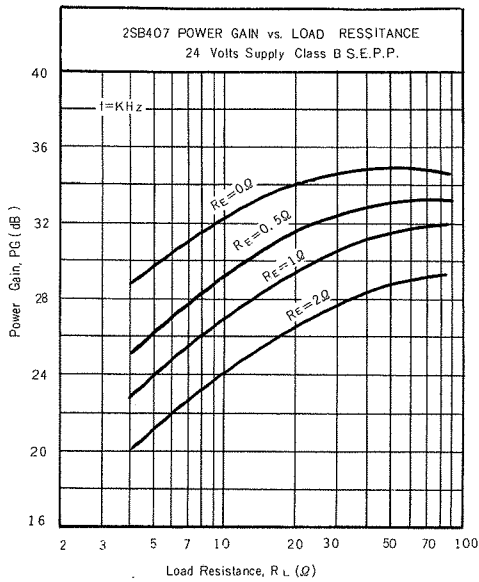
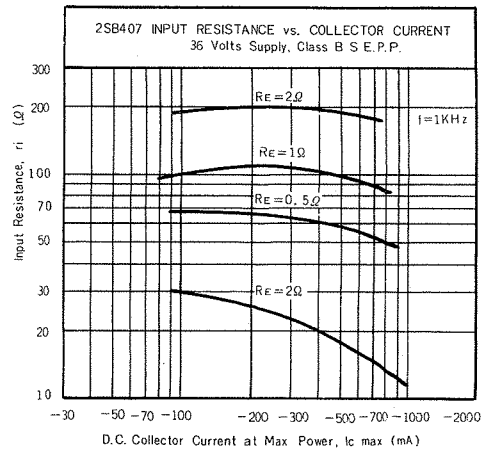
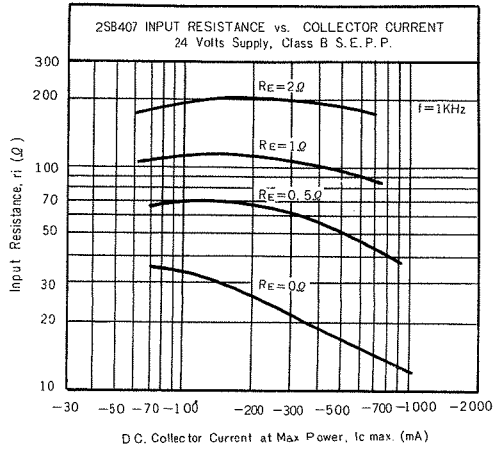
Class B Single Ended Push-Pull Audio Power Amplifier

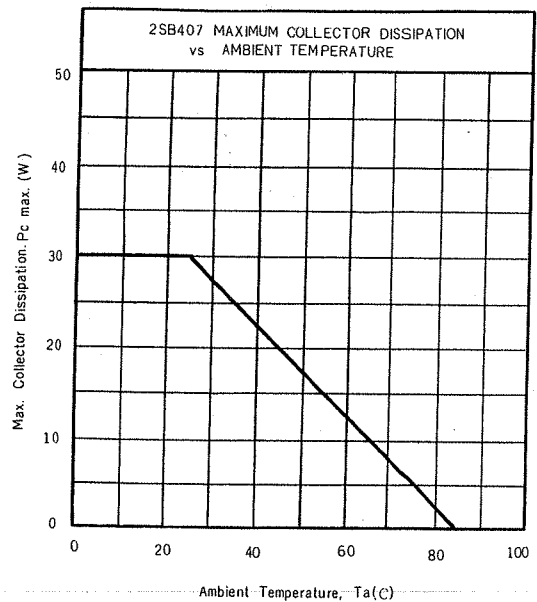
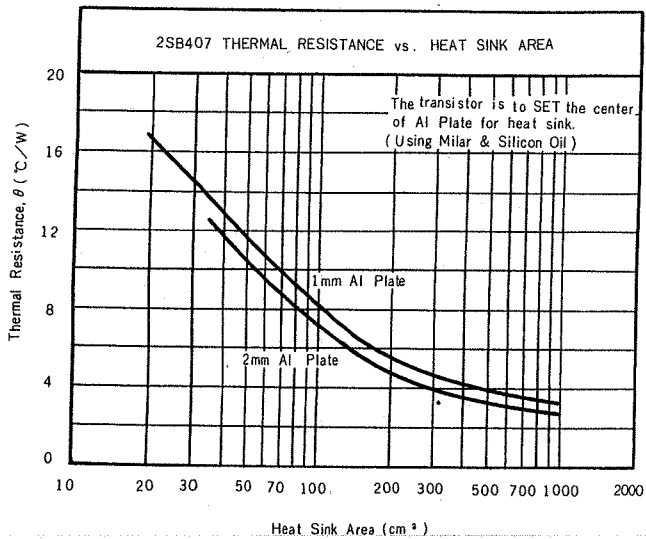
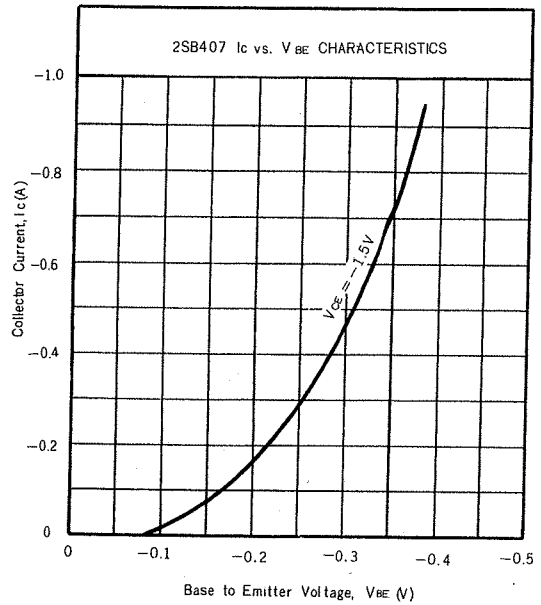
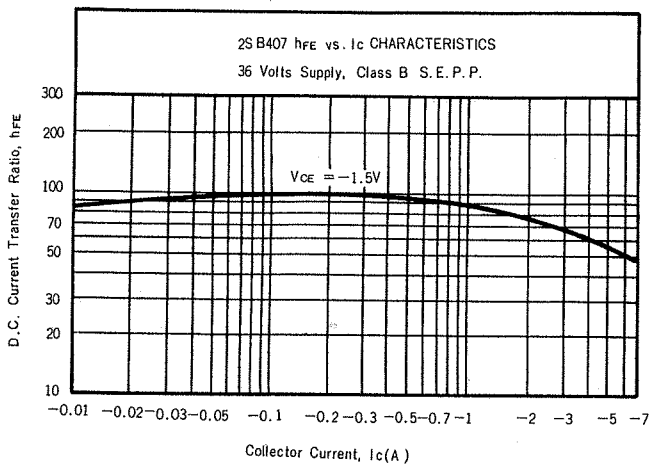
Collector Supply Voltage	V_{cc}	-24	-36	V
Emitter Resistance	R_E	0.5	1	Ω
Single Frequency	f	1	1	KHz
Load Resistance	R_L	4	8	Ω
D. C. Collector Current at Zero Signal	$I_{c \text{ min.}}$	-30	-30	mA
Maximum Power Output	$P_o \text{ max.}$	16	17	W
Input Voltage to the Transister at Max. Power Output	V_i	1.35	2	V
Input Resistance of the Transister at Max. Power Output	r_i	36	93	Ω
D. C. Collector Current at Max. Power Output	$I_{c \text{ max.}}$	-880	-640	mA
Power Gain at Max. Power Output	PG	25	26	dB
Total Harmonic Distortion at Max. Power Output	KF	5	4	%

Class B Push-Pull Amplifier

Resistors R_{B1} and R_{B2} are adjusted so that d.c. collector current at zero signal is -30mA







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