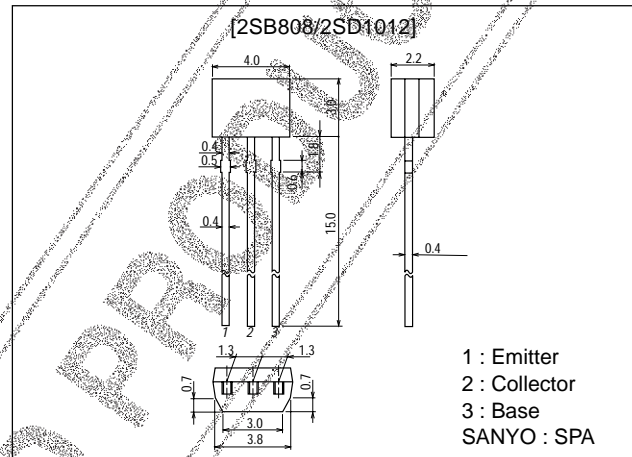


SANYO**2SB808/2SD1012****Low-Voltage Large-Current
Amplifier Applications****Package Dimensions**

unit:mm

2033A



() : 2SB808

Specifications**Absolute Maximum Ratings** at $T_a = 25\text{ C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)20	V
Collector-to-Emitter Voltage	V_{CEO}		(-)15	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)0.7	A
Collector Current (Pulse)	I_{CP}		(-)1.5	A
Collector Dissipation	P_C		250	mW
Junction Temperature	T_J		125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +125	$^{\circ}\text{C}$

Electrical Characteristics at $T_a = 25\text{ C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)15\text{V}, I_E=0$			(-)1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)2\text{V}, I_C=(-)50\text{mA}$	160*		960*	
	h_{FE2}	$V_{CE}=(-)2\text{V}, I_C=(-)500\text{mA Pulse}$	80			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		250		MHz
Common Base Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(13)		pF
				8		pF

Continued on next page.

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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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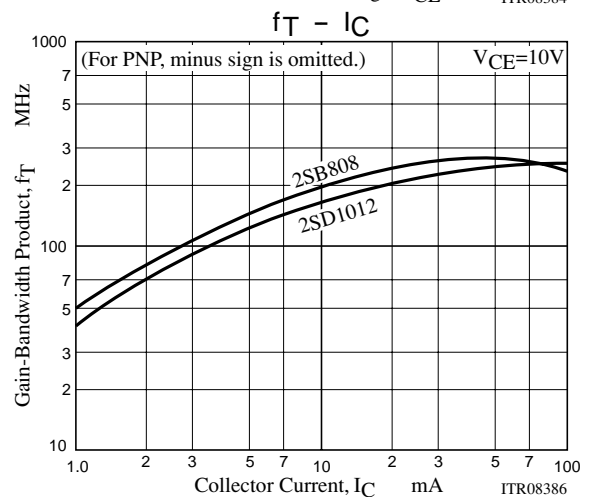
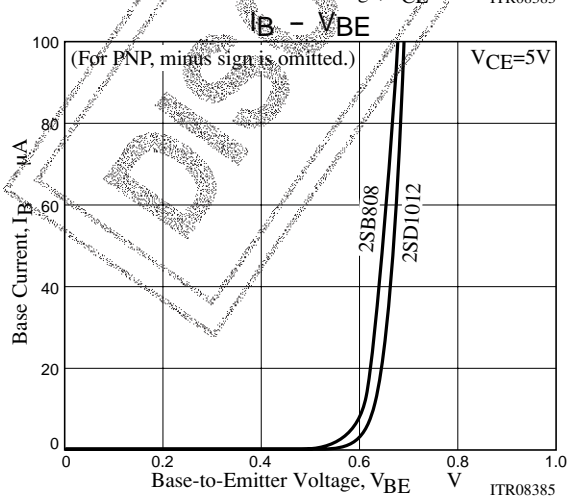
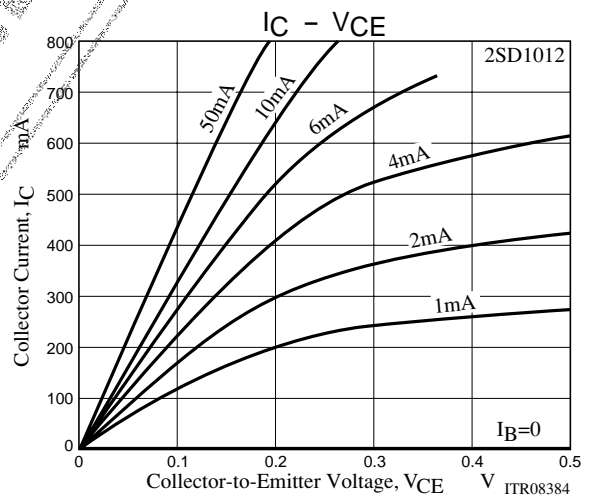
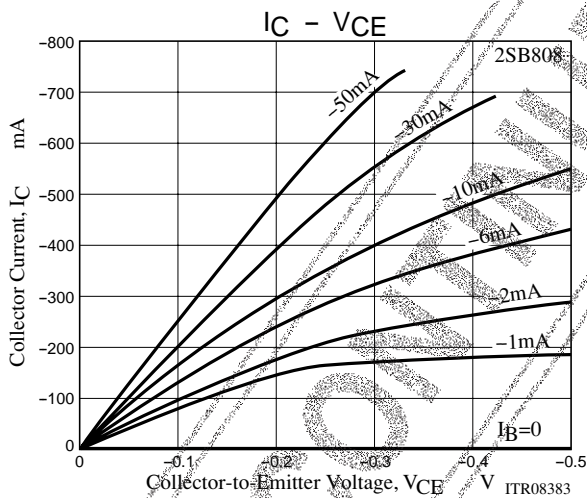
2SB808/2SD1012

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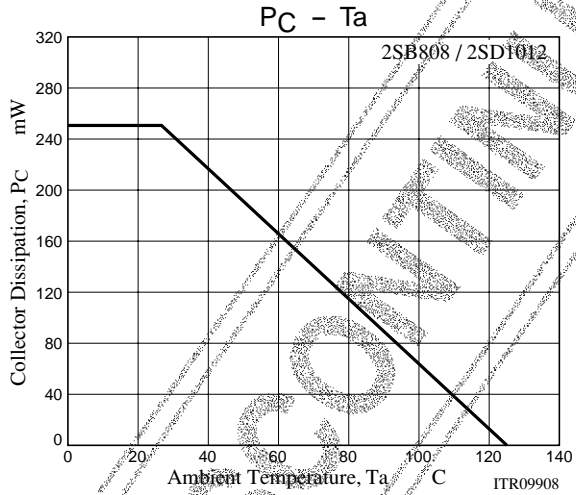
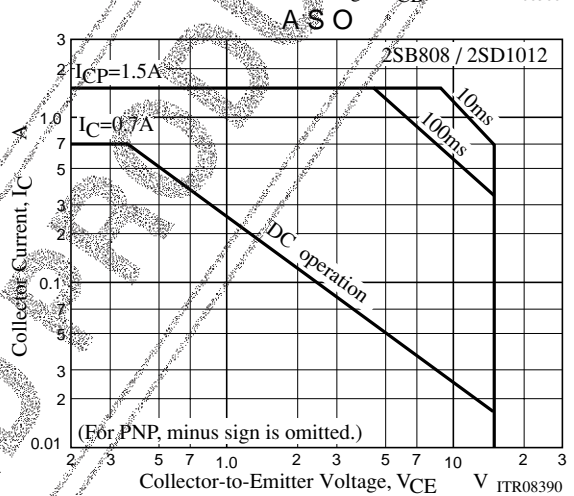
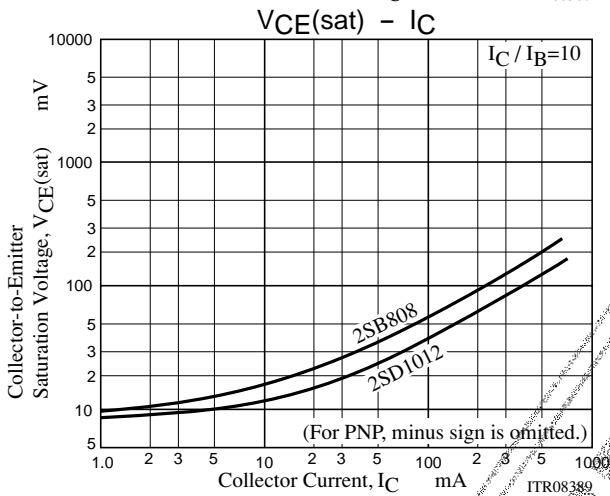
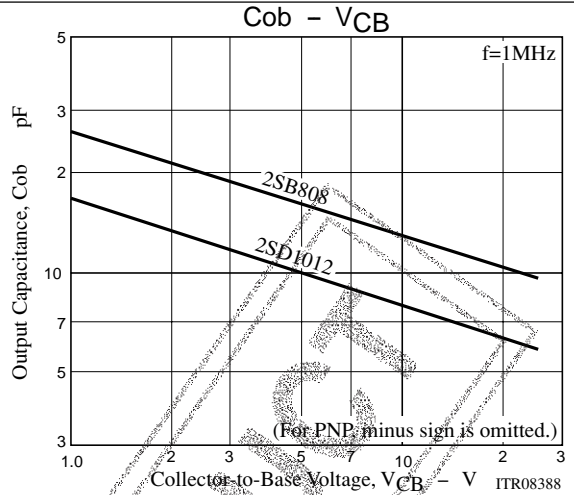
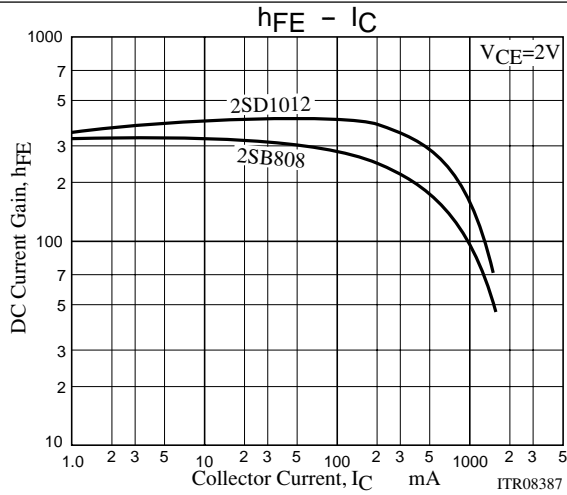
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=(-)5mA, I_B=(-)0.5mA$		(-15)	(-35)	mV
	$V_{CE(sat)2}$	$I_C=(-)100mA, I_B=(-)10mA$		10	25	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$		(-60)	(-120)	mV
				30	80	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$		(-0.8)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$		(-20)		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$		(-15)		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$		(-5)		V

* : The 2SB808/2SD1012 are classified by 50mA h_{FE} as follows :

2SB808	Rank	F	G	
	h_{FE}	160 to 320	280 to 560	
2SD1012	Rank	F	G	H
	h_{FE}	160 to 320	280 to 560	480 to 960



2SB808/2SD1012

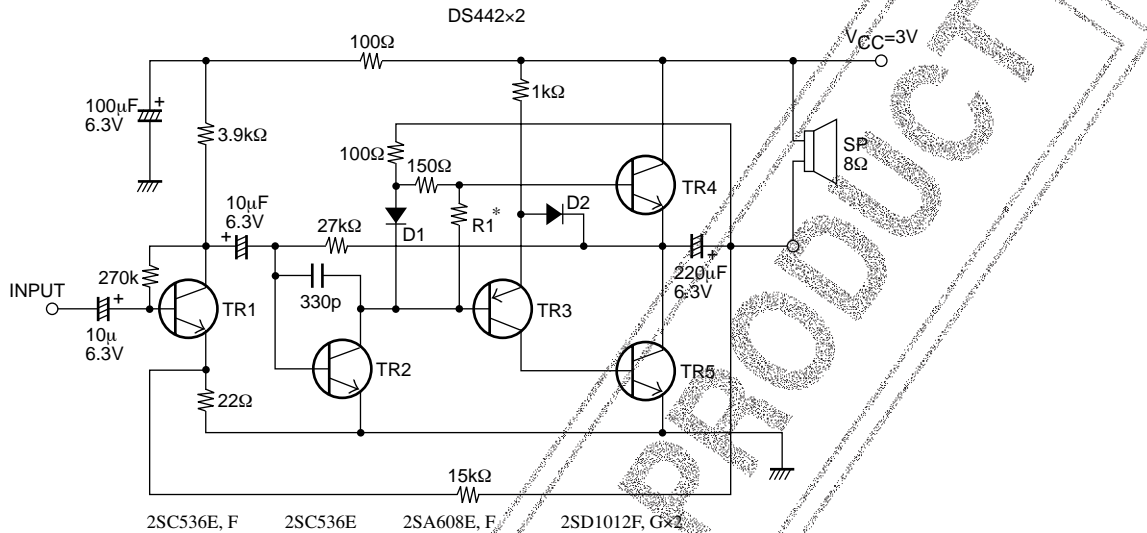


2SB808/2SD1012

Sample Application Circuit : Low-voltage 3V (P_O 120mW) ITL-OTL power amplifier.

Circuit configuration

For obtaining an output of more than 100mW, the middle-point voltage at the output stage and the collector voltage of the driver transistor must be $V_{CC}/2$. Therefore, the output stage is of quasi complementary configuration composed of npn/npn transistors. The phase is reversed by the 2SA608 and the middle-point voltage of the output stage and the collector voltage of the driver transistor are more to be $V_{CC}/2$ so that the output can be maximized.



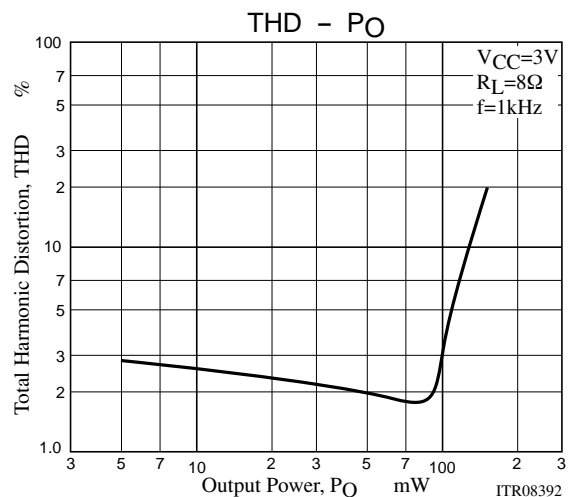
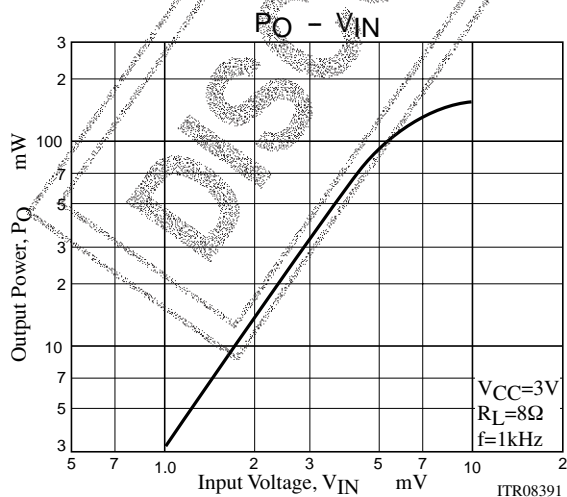
R1 : Used control idele current
 For R1=820Ω, use rank F for [TR4, 5(2SD1012)]
 For R1=680Ω, use rank G for [TR4, 5(2SD1012)]

ITR09909

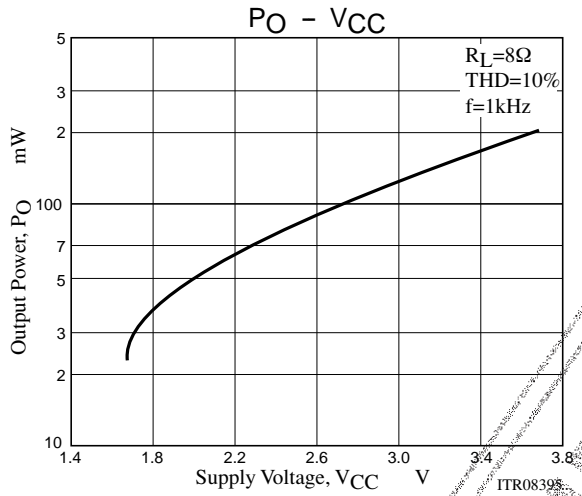
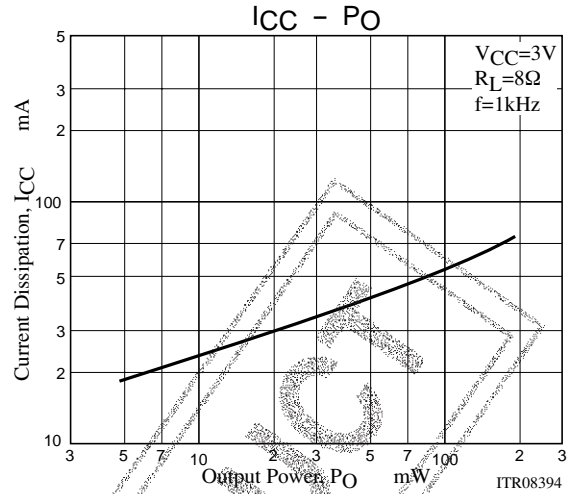
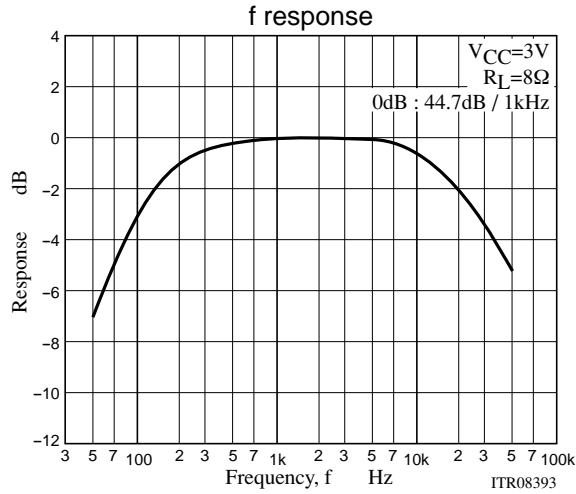
Main Specifications

Characteristic	Conditions	f=400Hz	f=1kHz	Unit
Current dissipation	Quiescent, total current dissipation	11.0 to 15.5	11.0 to 15.5	mA
Output power	THD=10%	120 to 125	127 to 130	mW
Voltage gain	P _O =10mW	43.3 to 45.5	43.5 to 45.7	dB
Total harmonic distortion	P _O =50mW	1.4 to 2.6	1.3 to 2.5	%
Input resistance	P _O =10mW	10.4 to 20.5	11.0 to 21.0	kΩ

Note : for above-mentioned h_{FE} rank.



2SB808/2SD1012



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