

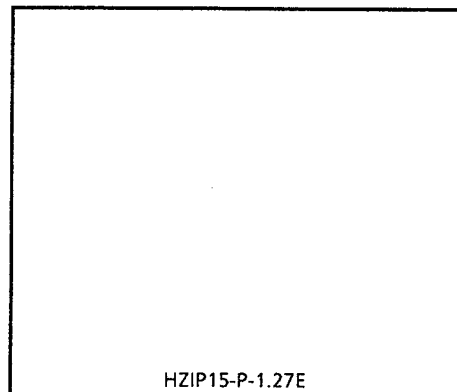
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8254H**45W BTL×2CH AUDIO POWER AMPLIFIER**

The TA8254H is BTL stereo audio power amplifier for car audio application, especially for 2Ω load impedance. It is built-in Stand-by Function, Muting Function, diagnosis circuit, output clipping detector and various kind of protections.

FEATURES

- High power
 - : $P_{OUT(1)} = 45W$ (Typ.) / Channel
($V_{CC} = 14.4V$, $f = 1kHz$, $THD = 10\%$, $R_L = 2\Omega$)
 - $P_{OUT(2)} = 35W$ (Typ.) / Channel
($V_{CC} = 13.2V$, $f = 1kHz$, $THD = 10\%$, $R_L = 2\Omega$)
 - $P_{OUT(3)} = 21W$ (Typ.) / Channel
($V_{CC} = 13.2V$, $f = 1kHz$, $THD = 10\%$, $R_L = 4\Omega$)
- Low distortion ratio : $THD = 0.02\%$ (Typ.)
($V_{CC} = 13.2V$, $f = 1kHz$, $P_{OUT} = 10W$, $R_L = 4\Omega$)
- Low noise : $V_{NO} = 0.10mV_{rms}$ (Typ.)
($V_{CC} = 13.2V$, $R_L = 4\Omega$, $R_G = 0\Omega$, $BW = 20Hz \sim 20kHz$)
- Built-in stand-by function : (With pin set at LOW, Power is turned OFF.) $I_{SB} = 1\mu A$ (Typ.)
- Built-in output clipping detection and diagnosis circuit : (Open Collector (Active Low))
- Built-in various protection circuits : Thermal Shut Down, Over Voltage, Out \rightarrow V_{CC} Short, Out \rightarrow GND Short and OUT-OUT Short.
- Operating supply voltage : $V_{CC(opr)} = 9 \sim 18V$



Weight : g (Typ.)

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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Peak Supply Voltage (0.2s)	V _{CC(surge)}	50	V
DC Supply Voltage	V _{CC(DC)}	25	V
Operating Supply Voltage	V _{CC(opr)}	18	V
Output Current (Peak)	I _{O(peak)}	9	A
Power Dissipation	P _D (*)		W
Operating Temperature	T _{opr}	- 40~85	°C
Storage Temperature	T _{stg}	- 55~150	°C

(*) Package terminal resistance $\theta_{j-T} = \text{°C/W (Typ.)}$
(Ta = 25°C, with infinite heat sink)

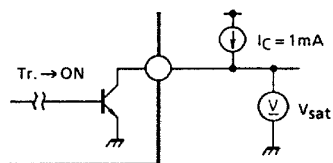
TENTATIVE

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC} = 13.2V, R_L = 4Ω, f = 1kHz, Ta = 25°C)

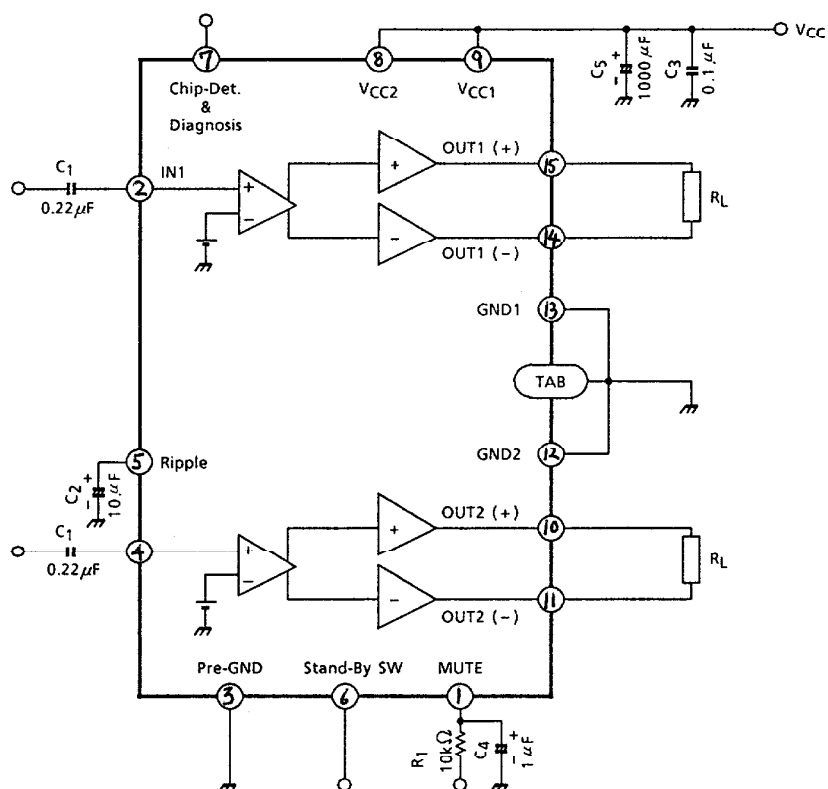
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Supply Current	I _{CCQ}	—	V _{IN} = 0	—	120	250	mA
Output Power	P _{OUT} (1)	—	V _{CC} = 14.4V, R _L = 2Ω THD = 10%	—	45	—	W
	P _{OUT} (2)	—	R _L = 2Ω, THD = 10%	—	35	—	
	P _{OUT} (3)	—	THD = 10%	—	21	—	
Total Harmonic Distortion Ratio	THD	—	P _{OUT} = 10W	—	0.02	0.2	%
Voltage Gain	G _V	—	—	24	26	28	dB
Voltage Gain Ratio	ΔG _V	—	—	- 1.0	0	1.0	dB
Output Noise Voltage	V _{NO}	—	R _g = 0Ω, BW = 20Hz~20kHz	—	0.10	0.35	mV _{rms}
Ripple Rejection Ratio	R.R.	—	f _{ripple} = 100Hz, R _g = 600Ω	40	55	—	dB
Input Resistance	R _{IN}	—	—	—	90	—	kΩ
Output Offset Voltage	V _{offset}	—	V _{IN} = 0	- 150	0	150	mV
Current at Stand-by State	I _{SB}	—	—	—	1	10	μA
Cross Talk	C.T.	—	R _g = 600Ω V _{OUT} = 0.775V _{rms} (0dBm)	—	75	—	dB
Stand-by Control Voltage	V _{SB}	—	Stand-By → OFF (Power → ON)	3.0 2.5	—	V _{CC}	V
CLIP DET & DIAGNOSIS OUT Saturation Voltage	V _{sat}	—	I _C = 1mA	—	100	—	mV
Mute Control Voltage (*)	V _M H	—	Mute : off	OPEN			V
	V _M L	—	Mute : on	0	—	1.5	
Mute Attenuation	ATT M	—	Mute : on, V _{OUT} = 7.75V _{rms} (20dBm) at Mute : off	—	85	—	dB

(*) Muting function must be controlled by open and Low Logic.
This means that the Mute control terminal : pin○ must not be pulled up.

Clip. Det. & Diagnosis Out Test Circuit



TEST CIRCUIT
TA8254H ($G_V = 26\text{dB}$)

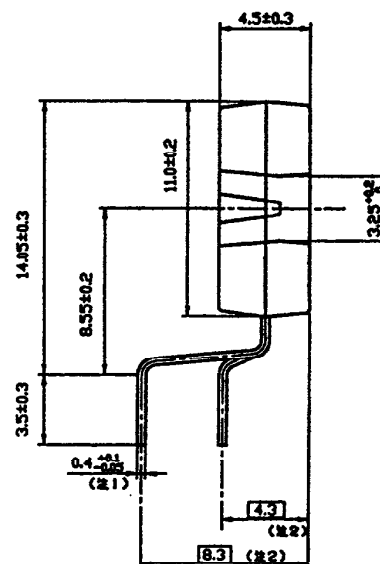
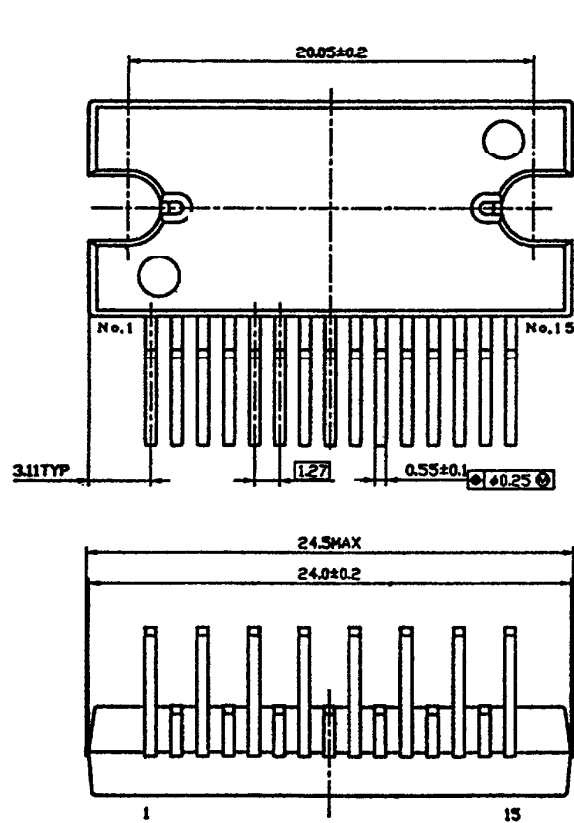


* Now under considering pin arrangement.

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OUTLINE DRAWING
HZIP15-P-1.27E

Unit : mm



Weight : g (Typ.)

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