

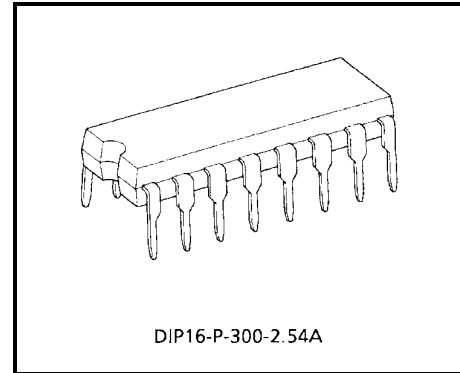
# TA2078P

## Preset Equalizer IC

TA2078P is a 3 mode preset equalizer IC.  
This IC have built-in one middle boost and two type high/low boost equalizers and flat mode.  
These operation mode are controled by internal switch.

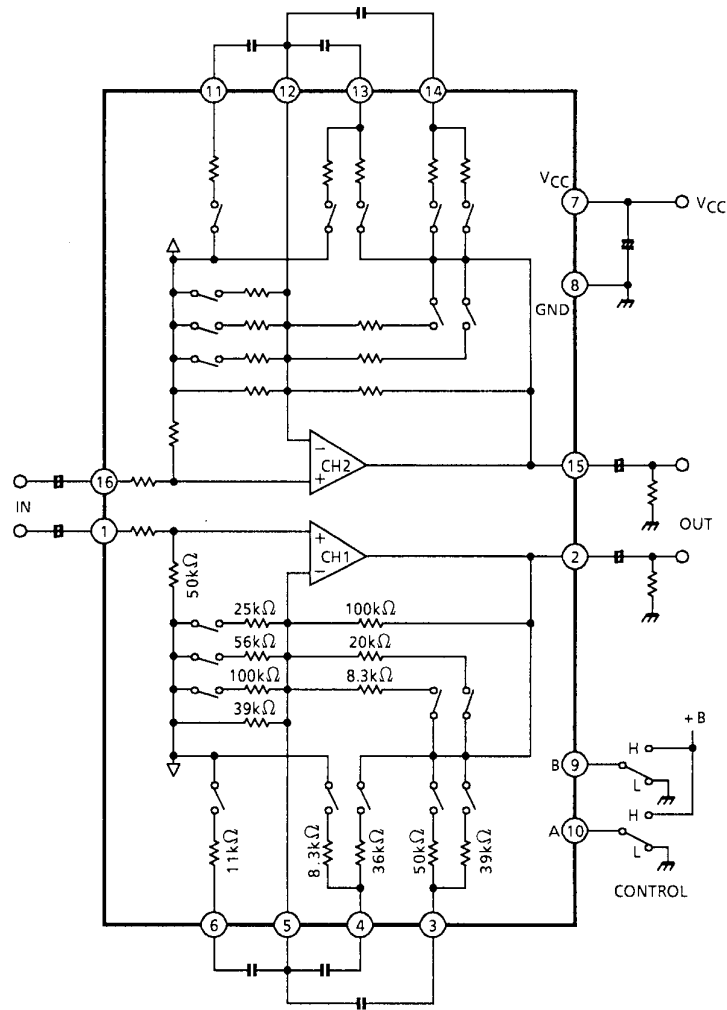
### Features

- Dual channel
- 3 mode preset equalizer
  - 1) Middle boost
  - 2) High/Low boost-1
  - 3) High/Low boost-2
  - 4) Flat (No equalizing)
- Few external parts
- Dual inline package 16 pin
- Operating supply voltage range  
:  $V_{CC(opr)} = 7.5 \sim 14.0 \text{ V}$  ( $T_a = 25^\circ\text{C}$ )



Weight: 1.00 g (typ.)

## Block Diagram



## Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	14	V
Power dissipation	P <sub>D</sub> (Note)	750	mW
Operating temperature	T <sub>opr</sub>	-25~75	°C
Storage temperature	T <sub>stg</sub>	-55~150	°C

Note: Derated above Ta = 25°C in the proportion of 6 mW/°C.

## Electrical Characteristics

(unless otherwise specified, V<sub>CC</sub> = 10 V, R<sub>g</sub> = 620 Ω, R<sub>L</sub> = 10 kΩ, f = 1 kHz, Normal Mode, Ta = 25°C)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Operating voltage	V <sub>CC</sub>	—	—	7.5	—	14.0	V
Quiescent current	I <sub>CCQ1</sub>	—	Normal mode (A = L, B = L)	—	2.5	5.0	mA
	I <sub>CCQ2</sub>	—	Rock mode (A = H, B = L)	—	4.2	9.0	
	I <sub>CCQ3</sub>	—	Classic mode (A = L, B = H)	—	4.6	9.0	
	I <sub>CCQ4</sub>	—	Pop mode (A = H, B = H)	—	4.5	9.0	
Voltage gain	G <sub>V</sub>	—	—	12.0	14.0	16.0	dB
Maximum output voltage	V <sub>om</sub>	—	THD = 1%	2.5	3.0	—	V <sub>rms</sub>
Total harmonic distortion	THD	—	V <sub>in</sub> = 200 mV <sub>rms</sub>	—	0.01	0.1	%
Ripple rejection ratio	R.R.	—	V <sub>rip</sub> = 300 mV <sub>rms</sub> , f <sub>rip</sub> = 100 Hz	—	-56	—	dB
Cross talk	C.T.	—	V <sub>in</sub> = 350 mV <sub>rms</sub>	—	-70	-60	dB
Output noise voltage	V <sub>no</sub>	—	R <sub>g</sub> = 620 Ω, DIN AUDIO filter	—	20	30	μV <sub>rms</sub>

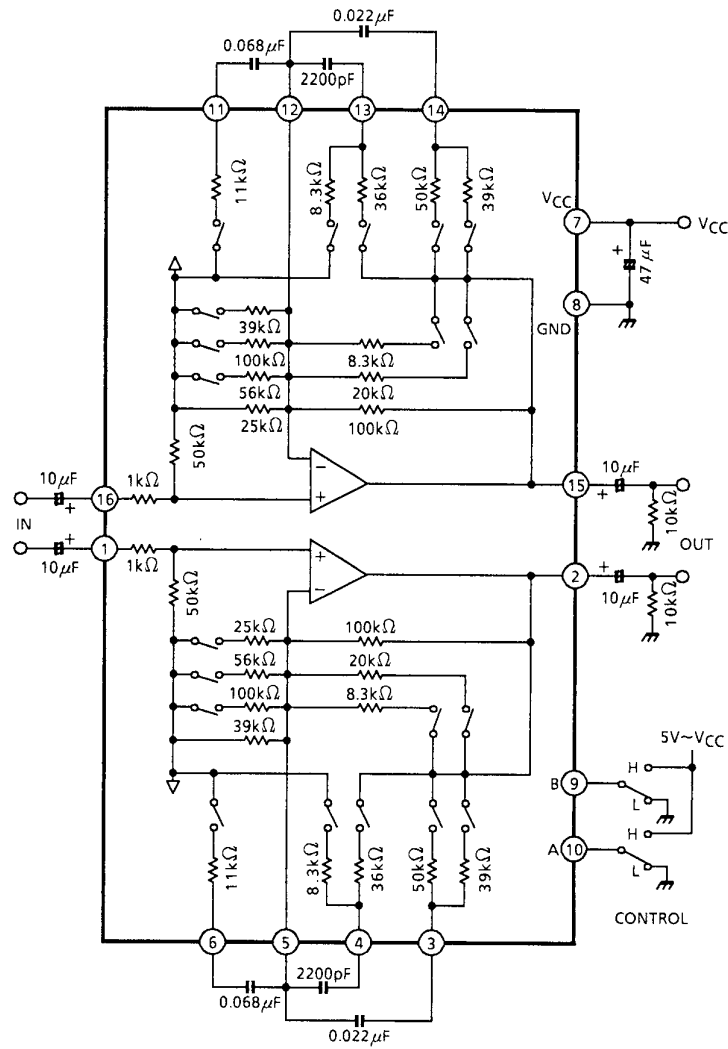
## Control Switch Voltage

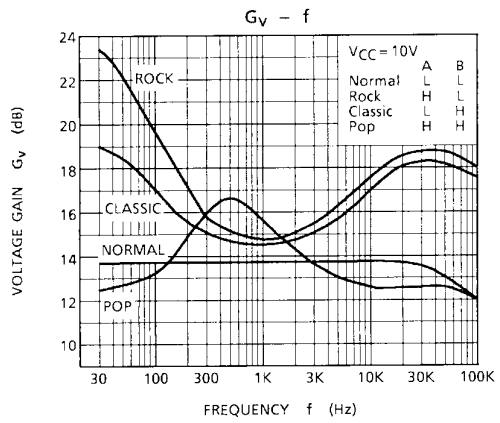
	Control Voltage for 10/9 pin
"H" Input	2.0 V~V <sub>CC</sub>
"L" Input	0~0.8 V or Open

## Operation Mode

	A (10 pin)	B (9 pin)	Boost Frequency
Normal	L	L	Flat (No equalizing)
Rock	H	L	High/Low boost-1
Classic	L	H	High/Low boost-2
Pop	H	H	Mid boost

## Test Circuit

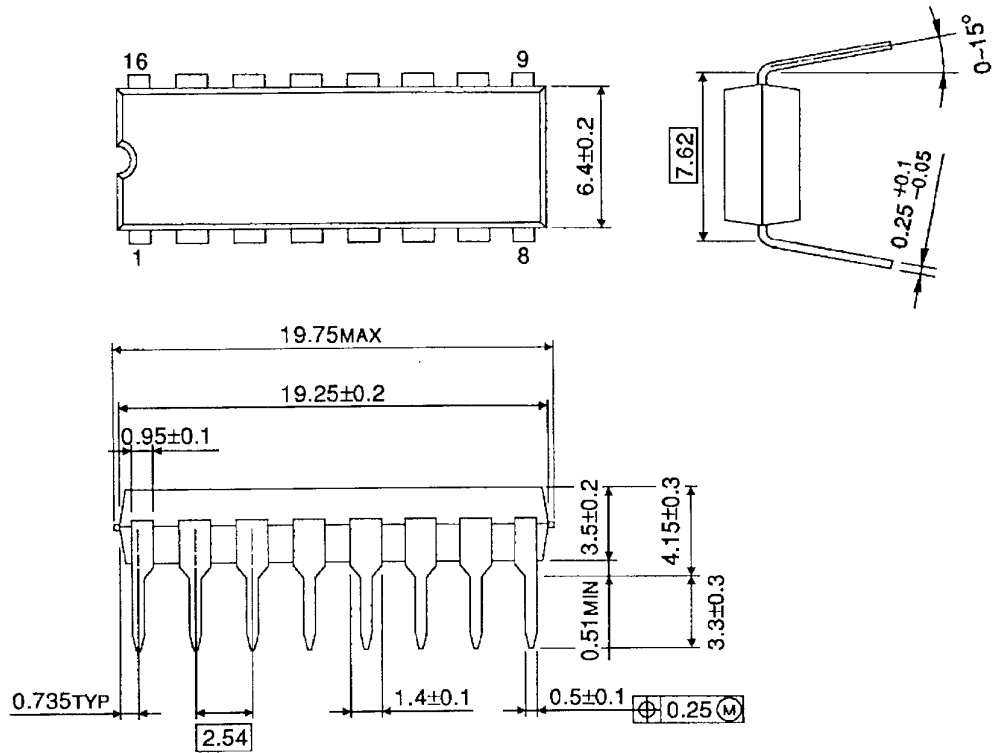




## Package Dimensions

DIP16-P-300-2.54A

Unit : mm



Weight: 1.00 g (typ.)

**RESTRICTIONS ON PRODUCT USE**

000707EBA

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.  
In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- The products described in this document are subject to the foreign exchange and foreign trade laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.