

TA7366P
TA7367P

T-77-21

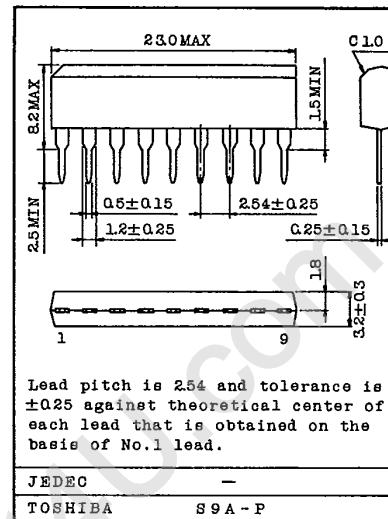
5-LED LEVEL METER DRIVER

The TA7366P and TA7367P are designed for 5 LED level meter driver.

Which are consist of one input amplifier and five comparators for LED level indication.

- . Low Spurious Noise Operation.
- . Constant Driving Current : $I_0=8\text{mA(Typ.)}$
- . Indication Level Steps
 - : TA7366P 5dB, 5dB, 3dB, 3dB
 - : TA7367P 2dB, 2dB, 2dB, 2dB
- . Wide Operating Supply Voltage Range
 - : $V_{CC}=4 \sim 12\text{V}$
- . Variable Input Amplifier Gain : $G_v=0 \sim 20\text{dB}$

Unit in mm



Lead pitch is 2.54 and tolerance is ± 0.25 against theoretical center of each lead that is obtained on the basis of No.1 lead.

JEDEC —
TOSHIBA S9A-P

Weight : 0.92g

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	VCC	14	V
LED Driving Terminal Voltage (Note 1)	V _L	15	V
Power Dissipation (Note 2)	P _D	600	mW
Operating Temperature	T _{opr}	-25 ~ 75	°C
Storage Temperature	T _{stg}	-55 ~ 150	°C

Note 1 : For Pin 1~4 and 6

2 : Derated above $T_a=25^\circ\text{C}$ in the proportion of 4.8mW/°C.

AUDIO LINEAR IC

9097247 TOSHIBA. ELECTRONIC

02E 17229 D

T-77-21

TA7366P
TA7367P

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=9V$, $f=1kHz$, $T_a=25^{\circ}C$)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CCQ}	-	$V_{IN}=0V$	-	3	5	mA
Output Current	$I_O(1 \sim 5)$	-		5	8	10	mA
Output Leak Current	$I_O(OFF)$	-		-	-	50	μA
Sensitivity	$V_{LD5(ON)}$	-	$R_S=24k\Omega$, $R_f=100k\Omega$	-	230	-	mV _{rms}

TA7366P

LED Turn-on Input Level	LD5	-	$R_S=24k\Omega$, $R_f=100k\Omega$ $I_O=1mA$	-1	0	1	dB
	LD4	-		-4	-3	-2	dB
	LD3	-		-7.5	-6	-4.5	dB
	LD2	-		-13	-11	-9	dB
	LD1	-		-19	-16	-13	dB

TA7367P

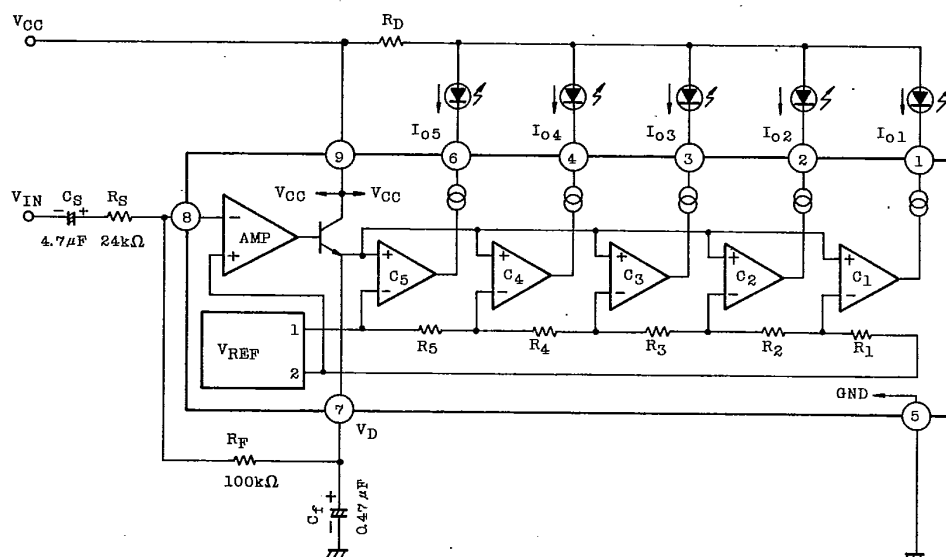
LED Turn-on Input Level	LD5	-	$R_S=24k\Omega$, $R_f=100k\Omega$ $I_O=1mA$	-1	0	1	dB
	LD4	-		-3	-2	-1	dB
	LD3	-		-5	-4	-3	dB
	LD2	-		-7	-6	-5	dB
	LD1	-		-9	-8	-7	dB

TOSHIBA

TA7366P

TA7367P

TEST CIRCUIT/BLOCK DIAGRAM



INTERNAL RESISTANCE VALUE

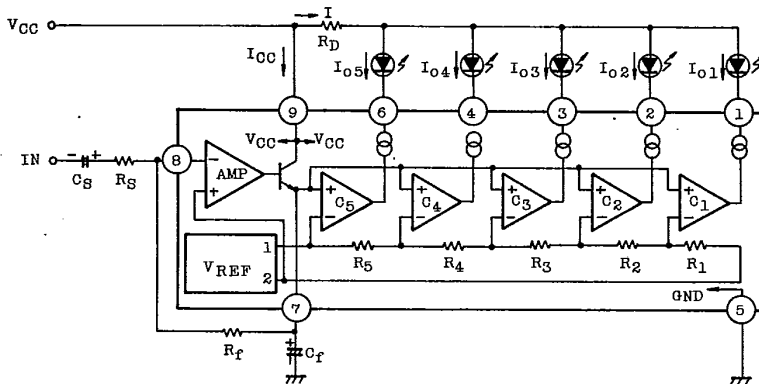
	TA7366P	TA7367P	UNIT
R1	1.36	3.66	kΩ
R2	1.08	0.948	kΩ
R3	1.89	1.19	kΩ
R4	1.78	1.50	kΩ
R5	2.50	1.89	kΩ

AUDIO LINEAR IC

TA7366P

TA7367P

PRECAUTION FOR USE AND APPLICATION METHOD



1. Setting of Turn-on Level

Turn-on input level can be set through changing the voltage gain (G_V) of the input amplifier. This voltage gain is determined by the external resistor (R_S, R_f) and obtained by the equation below.

$$G_V = 20 \log \frac{R_f}{R_S} \quad (\text{Use in the range of } G_V = 0 \sim 20 \text{ dB})$$

When $G_V = 0 \text{ dB}$ ($R_S = R_f = 100 \text{ k}\Omega$), the turn-on level at fifth LED is $958.3 \text{ mV}_{\text{rms}}$ (Typ.).

For turning on the fifth LED with the arbitrarily set input level (V_{IN}), use the following equation to set R_S and R_f .

$$\frac{R_f}{R_S} = \frac{958.3 \text{ mV}_{\text{rms}}}{V_{\text{IN}}} \quad (\text{Use the resistor of } R_f = 56 \text{ k}\Omega \text{ or over})$$

2. Setting of Power Dissipation and Limiting Resistor

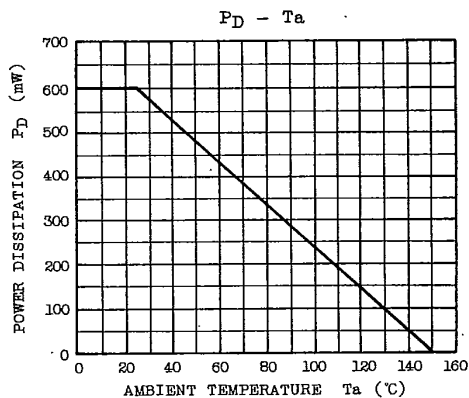
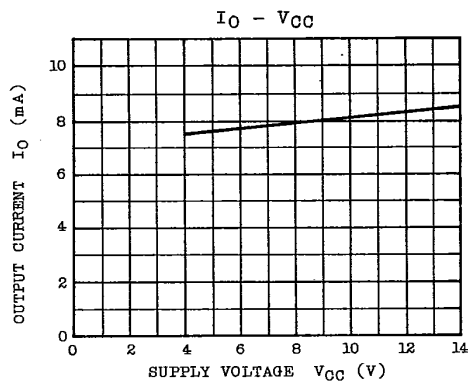
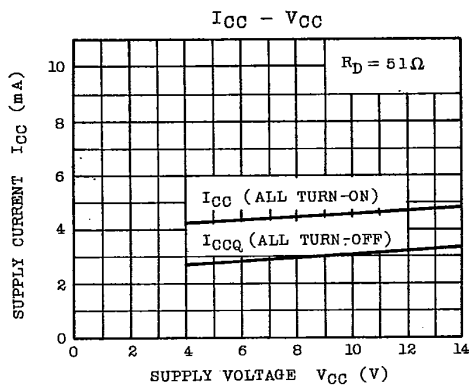
Since the output of this IC is driver by constant current, all the output current ($I_{O1} \sim 5$) are dissipated in the IC. Therefore, set the limiting resistor (R_D) so that the power dissipation (P_D) may not exceed the maximum rating because of the ambient temperature.

$$P_D = V_{CC} \cdot I_{CC} + (V_{CC} - R_D \cdot I - V_F) I_{O1} + \dots + (V_{CC} - R_D \cdot I - V_F) I_{O5}$$

$$\text{Total output current; } I = I_{O1} + I_{O2} + I_{O3} + I_{O4} + I_{O5}$$

$$\text{LED forward voltage; } V_F = 1.5 \text{ V}$$

TA7366P
TA7367P



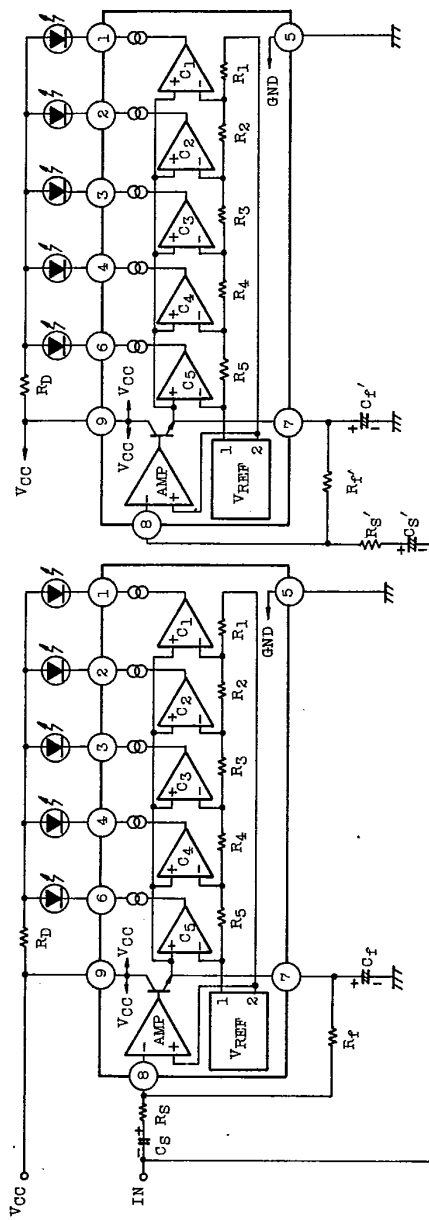
AUDIO LINEAR IC

TA7366P
TA7367P

APPLICATION

RANGE EXTENSION (10 LEDs, TA7366P+TA7367P)

Intervals of Turn-ON Level (dB)	2	2	2	2	2	2	2	2	2	3
Turn-ON input levels (mV _{rms})	7788	6186	4914	3903	3100	2263	1273	716	507	359



TA7367P

$R_S = 47k\Omega$, $R_f = 56k\Omega$
 $C_S = 4.7\mu F$, $C_f = 0.47\mu F$

TA7366P

$R_S' = 20k\Omega$, $R_f' = 82k\Omega$
 $C_S' = 4.7\mu F$, $C_f' = 0.47\mu F$