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NTE7039 & NTE7104
Integrated Circuit
Vertical Deflection Output Circuit
W/Drive Circuit for CRT Display

Description:

The NTE7039 and NTE7104 are vertical deflection output ICs developed for use in high–grade TVs and displays. The interlace and crossover distortion responses, in particular, have been greatly improved, allowing excellent picture quality on large size television screens and high precision interlace mode displays.

Also, pulse signals can be used for input signals due to the on–chip sawtooth wave generating circuit and driver circuit. Further, the DC and AC feedback circuits can be formed with these ICs alone, simplyfing pattern design of sets and ensuring stable performance.

The NTE7104 has a maximum deflection current of $1.8A_{p–p}$, making it appropriate for use in portable to mid–size televisions while the NTE7039 has a minimum deflection current of $2.2A_{p–p}$, so it can be used for larger size sets, and can drive television screen sizes from 33 to 37 inches.

Features:

- Low Power Dissipation due to On–Chip Pump–Up Circuit
- On–Chip 50/60Hz Vertical Size Control Circuit
- On–Chip Sawtooth Wave Generating Circuit
- On–Chip Drive Circuit
- Vertical Output Circuit
- On–Chip Thermal Protection Circuit
- Excellent Interlace Response
- Excellent Crossover Response

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Driver Supply Voltage, $+V_{CC}1$ max 15V
Pump–Up Supply Voltage, $+V_{CC}8$ max 30V
Output Supply Voltage, $+V_{CC}13$ max 62V
Deflection Output Current, I_{DEF} . . . . . –1.5 to $+1.5A_{P–O}$
Thermal Resistance, Junction–to–Case, $R_{thJ–C}$ . . . . . 4°C/W
Allowable Power Dissipation (With Infinite Heat Sink), P_D max 8W
Operating Temperature Range, T_{opr} . . . . . –20° to +85°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

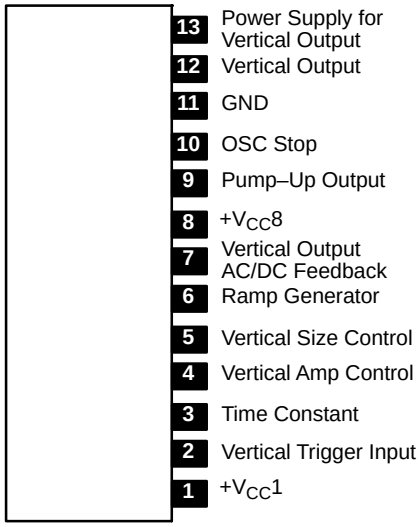
Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

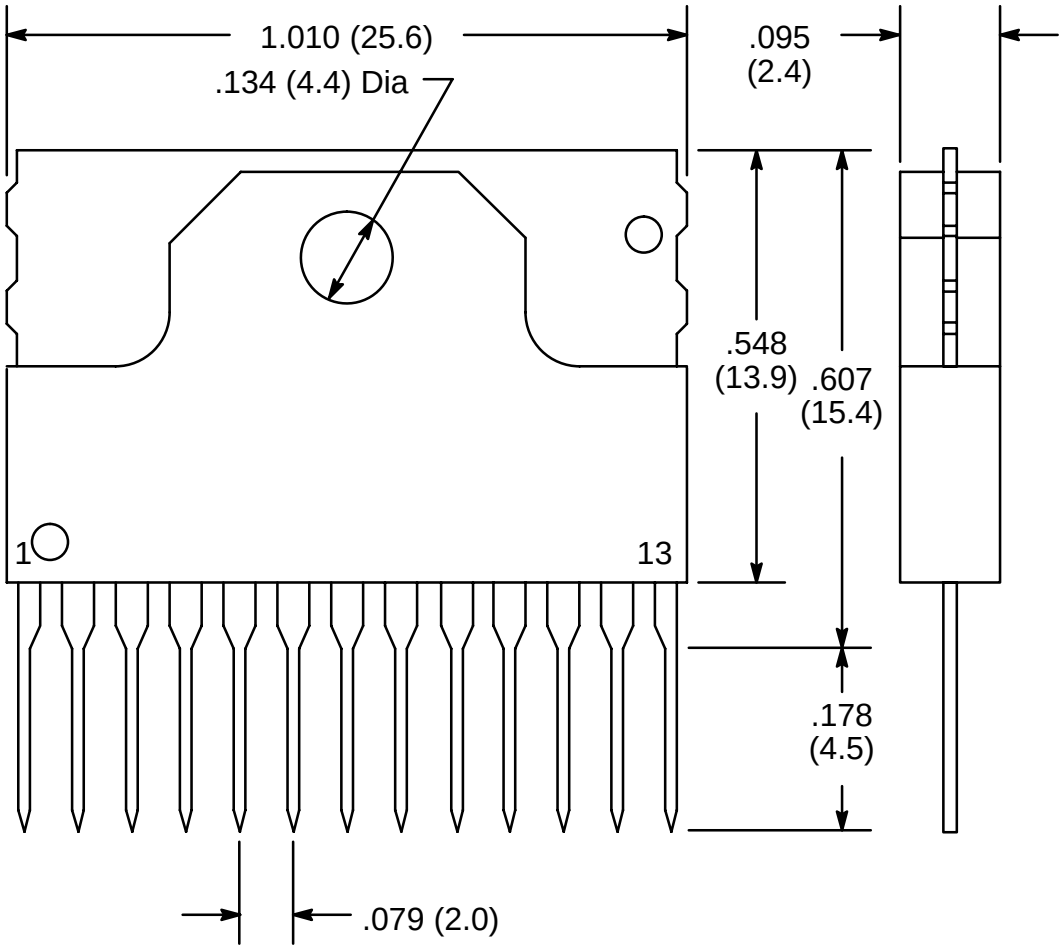
Parameter	Symbol	Min	Typ	Max	Unit
Driver Supply Voltage	$+V_{CC}1$	8	12	14	V
Pump–Up Supply Voltage	$+V_{CC}8$	10	24	27	V
Deflection Output Current	I_{12p-p}				
NTE7039			up to 2.2		A_{p-p}
NTE7104			up to 1.8		A_{p-p}
Ramp Waveform Pulse Height	V_{6p-p}				
NTE7039			up to +B1/3		V_{p-p}
NTE7104			up to –1.01		V_{p-p}

Electrical Characteristics: (T_A = +25°C, $+V_{CC}1$ = 12V, $+V_{CC}8$ = 24V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Driver Supply Current	$I_{CC}1$		5.6	6.7	7.8	mA
Trigger Input Threshold Voltage	V_2		2.6	2.9	3.2	V
Vertical Amplitude Control Pin Voltage	V_4		5.9	6.1	6.3	V
Ramp Waveform Generator Start Voltage	V_{RAMP}		4.6	4.9	5.2	V
Pump–Up Charge Saturation Voltage	V_{S9-11}	I_9 = 20mA	–	–	1.8	V
Pump–Up Discharge Saturation Voltage	V_{S8-9}					
NTE7039		I = 1.1A	–	–	3.2	V
NTE7104		I = 0.9A	–	–	3.0	V
Deflection Output Saturation Voltage (Lower)	V_{S12-11}					
NTE7039		I = 1.1A	–	–	1.5	V
NTE7104		I = 0.9A	–	–	1.2	V
Deflection Output Saturation Voltage (Upper)	V_{S13-12}					
NTE7039		I = 1.1A	–	–	3.5	V
NTE7104		I = 0.9A	–	–	3.2	V
Idling Current	I_{DL}		35	–	65	mA
Voltage Gain			–	59	–	dB

Pin Connection Diagram
(Front View)




1.010 (25.6)
.134 (4.4) Dia
.095
(2.4)
.548
(13.9)
.607
(15.4)
1
13
.178
(4.5)
.079 (2.0)