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NTE1754 & NTE1754S
Integrated Circuit
Vertical Deflection Output Circuit

Description:

The NTE1754 and NTE1754S are full–performance vertical deflection output circuits intended for direct drive of the deflection coils and can be used for a wide range of 90° and 110° deflection systems.

These devices are provided with a guard circuit which blanks the picture tube screen in the absence of deflection current.

Features:

- Available in 2 Package Types:
  - 9–Lead SIP (NTE1754)
  - 9–Lead Staggered SIP (NTE1754S)
- Direct Drive to the Deflection Coils
- 90°and 110° Deflection System
- Internal Blanking Guard Circuit
- Internal Voltage Stabilizer

Applications:

- Video Monitors
- TV Receivers

Absolute Maximum Ratings: (Note 1)

Output Voltage, V_{5-4} . . . . . 0 to 60V
Supply Voltage, V_{9-4} . . . . . 0 to 40V
Supply Voltage Output Stage, V_{6-4} . . . . . 0 to 60V
Input Voltage, V_{1-2} . . . . . 0 to V_{9-4}
Input Voltage Switching Circuit, V_{3-2} . . . . . 0 to V_{9-4}
External Voltage at Pin7, V_{7-2} . . . . . 0 to 5.6V
Repetitive Peak Output Current, $\pm I_{5RM}$ 1.5A
Non–Repetitive Peak Output Current (Note 1), $\pm I_{5SM}$ 3A
Repetitive Peak Output Current of Flyback Generator, I_{8RM} . . . . . +1.5A, –1.6A
Non–Repetitive Peak Output Current of Flyback Generator (Note 1), $\pm I_{8SM}$ 3A
Operating Ambient Temperature Range, T_A . . . . . –25° to +60°C
Operating Junction Temperature Range (Note 2), T_J . . . . . –25° to +150°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction–to–Mounting Base, R_{thJMB} . . . . . 3.5 to 4.0°C/W

Note 1. Pin2 and Pin4 are externally connected to GND.
Note 2. The output current at Pin5 should not exceed 2.5A.

Electrical Characteristics: (T_A = +25°C, V_{CC} (V_{9-4}) = 26V, Note 1, Note 3 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply						
Supply Voltage, Pin9	V_{9-4}	Note 5	10	–	40	V
Supply Voltage Output Stage	V_{6-4}		–	–	60	V
Supply Current, Pin6 and Pin9	$I_6 + I_9$	Note 6	35	55	85	mA
Quiescent Current	I_4		25	40	65	mA
Variation of Quiescent Current with Temperature	TC		–	–0.04	–	mA/°C
Output Current						
Output Current (Peak−to−Peak), Pin5	$I_{5(P-P)}$		–	2.5	3.0	A
Output Current Flyback Generator, Pin8	$+I_{8(P-P)}$		–	1.25	1.5	A
	$-I_{8(P-P)}$		–	1.35	1.6	A
Output Voltage						
Peak Voltage During Flyback	V_{5-4}		–	–	60	V
Saturation Voltage to Supply	$V_{6-5(sat)}$	I_5 = −1.5A	–	2.5	3.2	V
	$V_{5-6(sat)}$	I_5 = 1.5A, Note7	–	2.5	3.2	V
	$V_{6-5(sat)}$	I_5 = −1.2A	–	2.2	2.7	V
	$V_{5-6(sat)}$	I_5 = 1.2A, Note 7	–	2.3	2.8	V
Saturation Voltage to GND	$V_{5-4(sat)}$	I_5 = 1.2A	–	2.2	2.7	V
		I_5 = 1.5A	–	2.5	3.2	V
Flyback Generator						
Saturation Voltage	$V_{9-8(sat)}$	I_8 = −1.6A	–	1.6	2.1	V
	$V_{8-9(sat)}$	I_8 = 1.5A, Note 7	–	2.3	3.0	V
	$V_{9-8(sat)}$	I_8 = −1.3A	–	1.4	1.9	V
	$V_{8-9(sat)}$	I_8 = 1.2A, Note 7	–	2.2	2.7	V
Leakage Current at Pin8	$-I_8$		–	5	100	μA
Flyback Generator Active If:	V_{5-9}		4	–	–	V
Input						
Input Current, Pin1	I_1	I_5 = 1.5A	–	0.33	0.55	mA
Input Voltage During Scan, Pin1	V_{1-2}		–	2.35	3.0	V
Input Current During Scan, Pin3	I_3	Note 8	0.03	–	–	mA
Input Voltage During Scan, Pin3	V_{3-2}	Note 8	0.8	–	V_{9-4}	V
Input Voltage During Flyback, Pin1	V_{1-2}		–	–	250	mV
Input Voltage During Flyback, Pin3	V_{3-2}		–	–	250	mV

Note 1. Pin2 and Pin4 are externally connected to GND.

Note 3. Pin1 externally connedted to Pin3.

Note 4. Non−repetitive duty factor 3.3%.

Note 5. The maximum supply voltage should be chosen so that during flyback the voltage at Pin 5 does not exceed 60V.

Note 6. When V_{5-4} is 13V and no load at Pin5.

Note 7. Duty cycle, d = 5% or d = 0.05

Note 8. When Pin3 is driven separately from Pin1.

Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC} (V_{9-4}) = 26V, Note 1, Note 3 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Guard Circuit						
Output Voltage, Pin7	V_{7-2}	R_L = 100kΩ, Note 11	4.1	4.5	5.8	V
		I_L = 0.5mA, Note 11	3.4	3.9	5.3	V
Internal Series Resistance of Pin7	Ri_7		0.95	1.35	1.7	kΩ
Guard Circuit Activates	V_{8-2}	Note 9	–	–	1.0	V
General Data						
Open Loop Gain	G_O	at 1kHz, Note 10	–	33	–	
Frequency Response	f	–3dB, Note 12	–	60	–	kHz

Note 1. Pin2 and Pin4 are externally connected to GND.

Note 3. Pin1 externally connedted to Pin3.

Note 4. Non–repetitive duty factor 3.3%.

Note 5. The maximum supply voltage should be chosen so that during flyback the voltage at Pin 5 does not exceed 60V.

Note 6. When V_{5-4} is 13V and no load at Pin5.

Note 7. Duty cycle, d = 5% or d = 0.05

Note 8. When Pin3 is driven separately from Pin1.

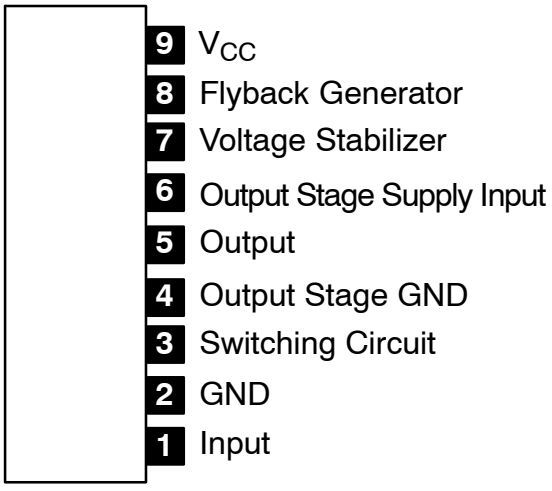
Note 9. During normal operation the voltage V_{8-2} may not be lower than 1.5V

Note 10. R_L = 8Ω; I_L = 125mA_{RMS}

Note 11. If guard circuit is active.

Note 12. With a 22pF capacitor between Pin1 and Pin5.

Pin Connection Diagram
(Front View)



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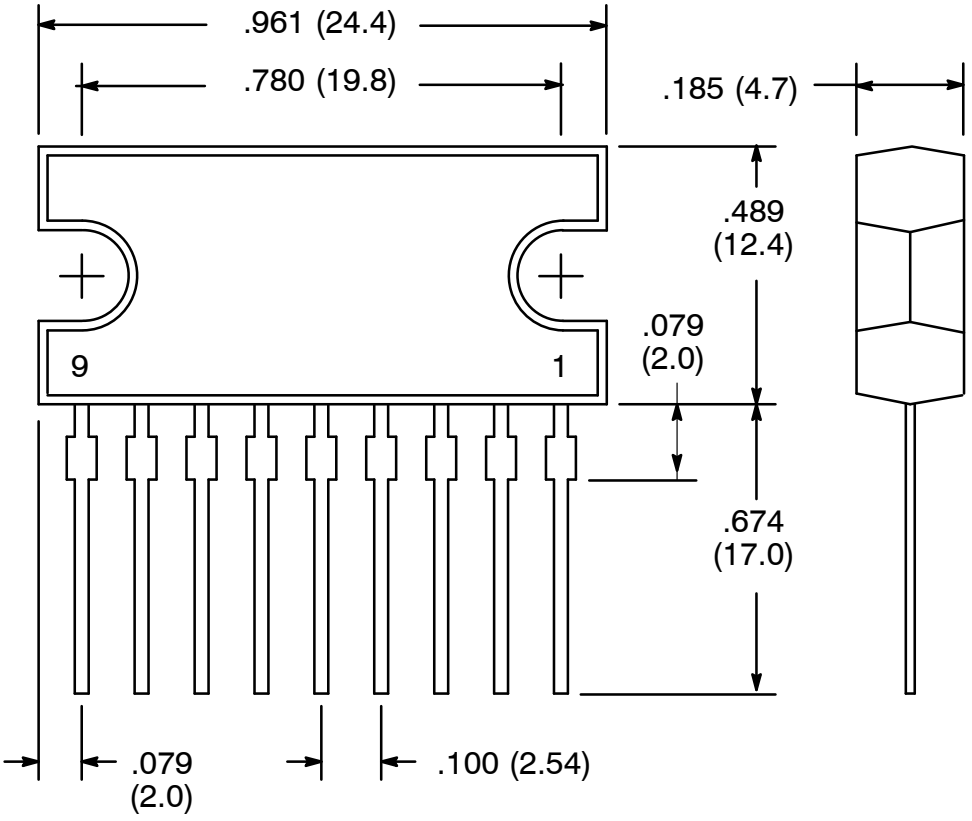

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