

ISI IDEAL SEMICONDUCTOR INC.

"Your Best Defense Against Obsolescence"

NE544 Servo Amplifier

Product Specification

Linear Products

DESCRIPTION

The NE544 is a servo amplifier and pulse-width demodulator with internal motor drive transistors. It is designed for remote control applications in digital proportional systems but can be used in many other closed-loop position control applications. It incorporates a linear one-shot for improved positional accuracy and outputs for external PNP motor drive transistors.

FEATURES

- 500mA load current capability
- Bidirectional bridge output with single power supply
- Low standby power drain
- Adjustable deadband and trigger thresholds
- High linearity, 0.5% maximum error
- Output drive for external PNP transistors (optional)
- Wide supply voltage range

APPLICATIONS

- Miniature position servo
- Robotics
- Control devices
- Remote positioning

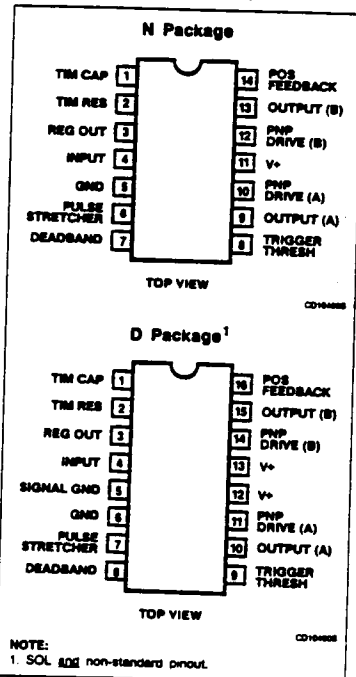
ORDERING INFORMATION

DESCRIPTION	TEMPERATURE RANGE	ORDER CODE
14-Pin Plastic DIP	0 to +70°C	NE544N
16-Pin Plastic SOL Package	0 to +70°C	NE544D

ABSOLUTE MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	RATING	UNIT
V+	Supply voltage	6.0	V
I_o	Output current D package N package	400 500	mA
T_A	Operating temperature	0 to +70	°C
T_{STG}	Storage temperature	-65 to +150	°C

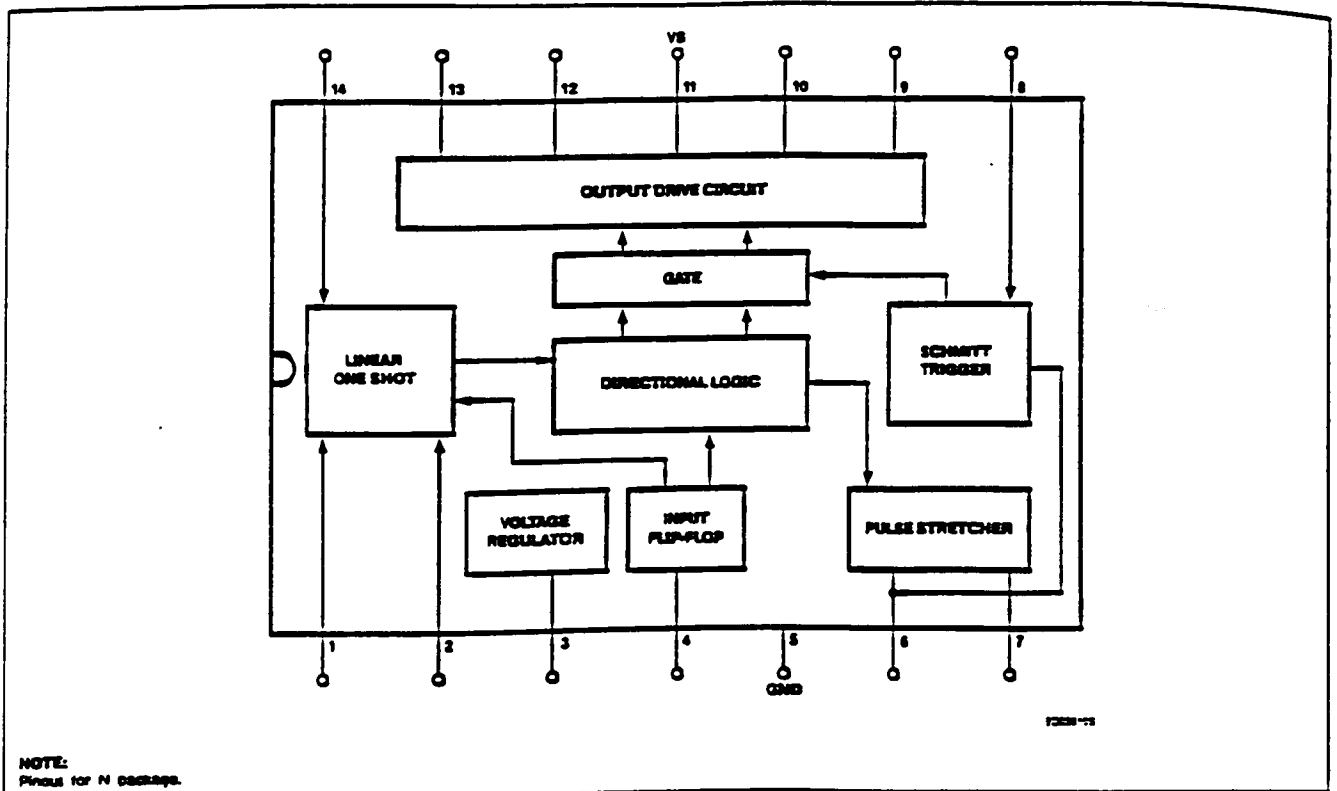
PIN CONFIGURATIONS



Servo Amplifier

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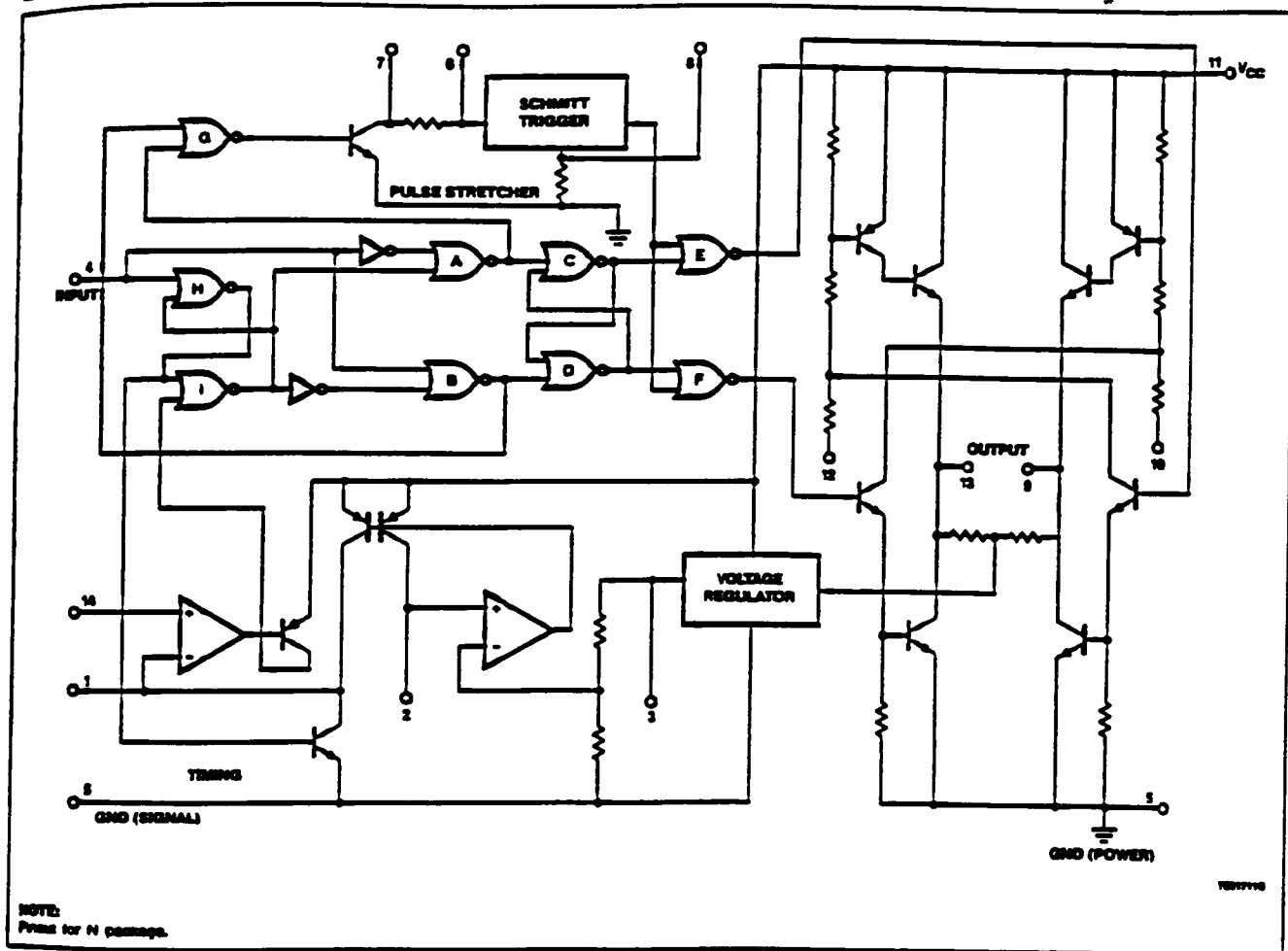
BLOCK DIAGRAM



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EQUIVALENT SCHEMATIC



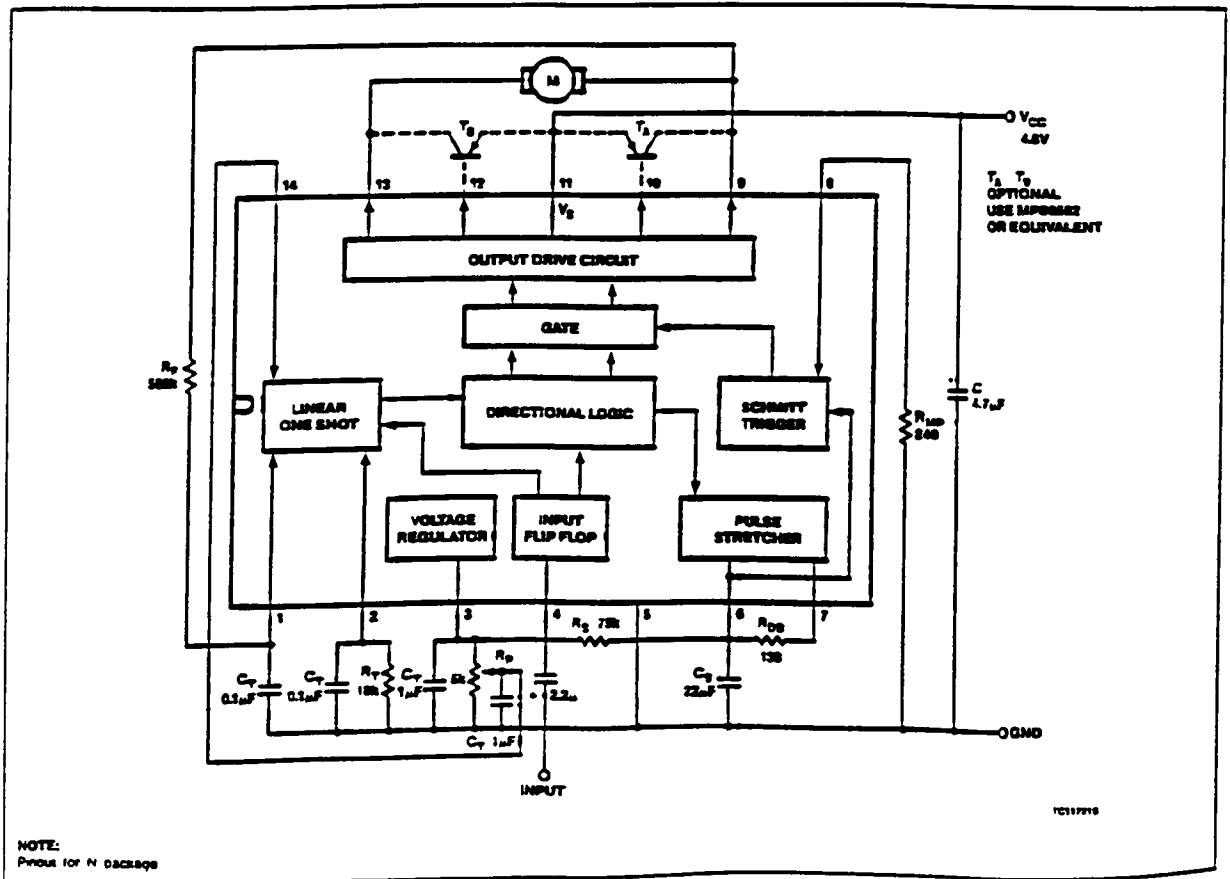
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DC ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$, $V_S = 4.8\text{V}$ unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
V_{CC}	Supply voltage	Quiescent	3.2	4.8	6	V
I_{CC}	Supply current, Pin 11		4.2	5.5	10	mA
V_{TH}	Input threshold, Pin 4			1.5		V
	On			1.4		
Z_{IN}	Input resistance, Pin 4			18		k Ω
V_{OL}	Output voltage	Pin 9 or 13, $I_L = 400\text{mA}$		0.3		V
V_{OH}	Low			3.9		
V_{REG}	Regulated voltage, Pin 3		2.1	2.5	2.9	V
ΔV_{REG}	Regulation, Pin 3	$3.9\text{V} < V_{CC} < 6\text{V}$ $R_{DS} = 0$		10		mV/V
	Minimum deadband, Pin 7			1		μs
	One-shot temperature coefficient			0.01		%/°C
	Standby output voltage	Pins 9 and 13		2.5		V
	PNP drive current	Pins 10 and 12		20		mA

TYPICAL CONNECTION OF NE544N FOR LINEAR ONE-SHOT TIMING



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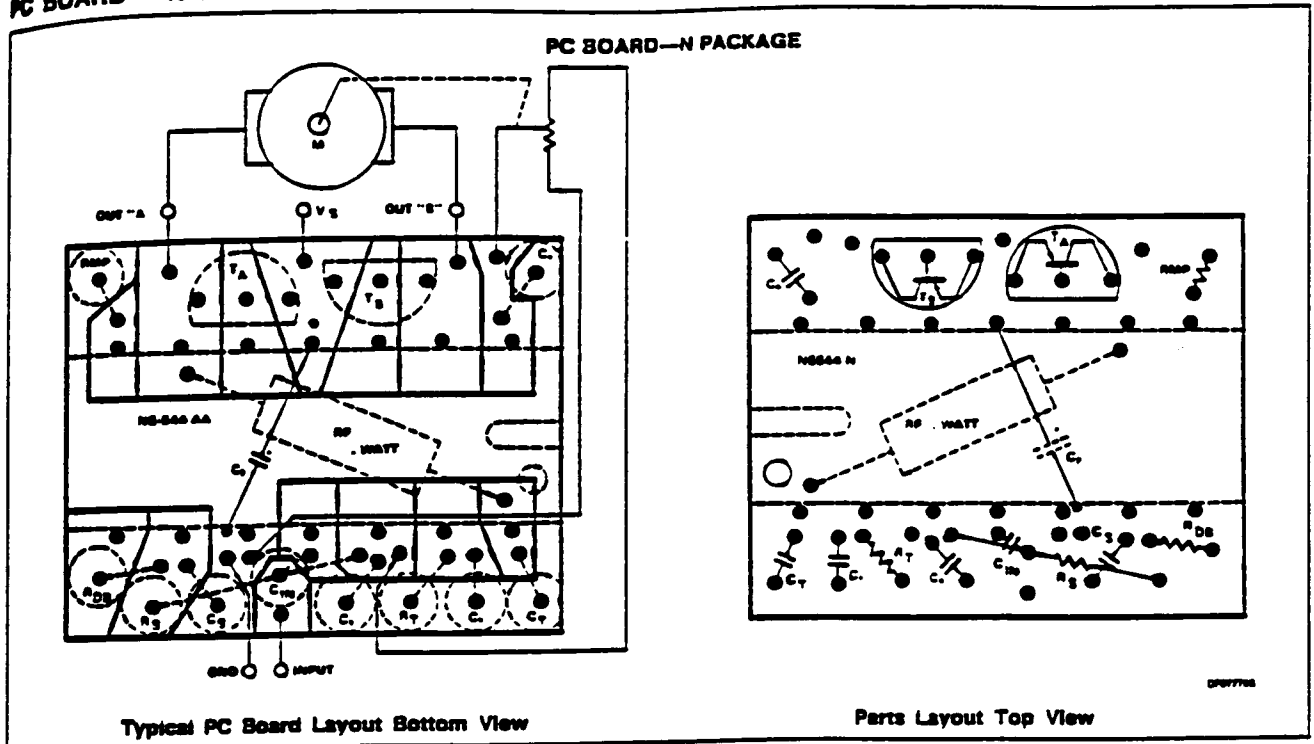
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PC BOARD — N PACKAGE



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TYPICAL PERFORMANCE CHARACTERISTICS

