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NTE1844
Integrated Circuit
Motor Speed Regulator

Description:

The NTE1844 is a monolithic integrated circuit intended for speed regulation of DC motors in record players, tape, and cassette recorders, conveniently packaged in a 4–Lead SIP type plastic package.

Features:

- High Output/Low Quiescent Currents
- Low Reference Voltage
- Excellent Stability versus Temperature, Parameters
- Excellent Characteristics even at Low Supply Voltages

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

Supply Voltage, V_{CC} 18V
Circuit Current (t ≤ 5sec), I_O 2A
Package Dissipation, P_D 1.2W
Operating Temperature Range, T_{opr} . . . . . –20° to +75°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

Recommended Operating Condition:

Supply Voltage Range, V_{CC} . . . . . 3.5V to 16V

Electrical Characteristics: (T_A = +25°C, V_{CC} = 12V, Pulse Test PW ≤ 10ms, Duty Cycle ≤ 2% unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	V_{ref}	I_4 = 10mA	1.10	1.27	1.40	V
Quiescent Current	I_d	R_M = 180Ω	0.5	0.8	1.2	mA
Reflection Coefficient	k	R_{M1} = 44Ω, R_{M2} = 33Ω	18	20	22	
Saturation Voltage	$V_{4(sat)}$	V_{CC} = 4.2V, R_M = 4.4Ω	–	1.5	2.0	V
	$\frac{\Delta k}{k}$ /ΔV_{CC}	I_4 = 100mA, V_{CC} = 6.3V to 16V	–	0.4	–	%/V

Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC} = 12V, Pulse Test PW ≤ 10ms, Duty Cycle ≤ 2% unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Line Regulation	$\frac{\Delta V_{ref}}{V_{ref}}/\Delta V_{CC}$	I_4 = 100mA, V_{CC} = 6.3V to 16V	–	0.06	–	%/V
	$\frac{\Delta k}{k}/\Delta I_M$	I_4 = 30mA to 200mA	–	–0.02	–	%/mA
Load Regulation	$\frac{\Delta V_{ref}}{V_{ref}}/\Delta I_M$	I_4 = 30mA to 200mA	–	–0.02	–	%/mA
	$\frac{\Delta k}{k}/\Delta T_A$	I_4 = 100mA, T_A = –20° to +75°C	–	0.01	–	%/°C
Temperature Coefficient	$\frac{\Delta V_{ref}}{V_{ref}}/\Delta T_A$	I_4 = 100mA, T_A = –20° to +75°C	–	0.01	–	%/°C

Note 1. R_M = internal motor resistance
k = I_4/I_2 where:
I_2 and I_4 are currents flowing from V_{CC} thru external resistors or internal motor resistance to Pin2 (I_2) and Pin4 (I_4).

Pin Connection Diagram
(Front View)