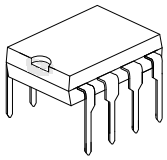
AN8850 Preliminary **CMOS IC**

MOTOR CONTROL CIRCUITS



DIP-8

■ DESCRIPTION

The UTC **AN8850** is a electronic governor suitable for low-voltage and compact DC motors generally used in the tape recorder, etc.

■ FEATURES

* Wide range of operating voltage : $V_{CC(opr)}$ =1.8V ~ 12V
* 2 package types
* Fewer external parts
* Speed control in steps with linear fine control

■ ORDERING INFORMATION

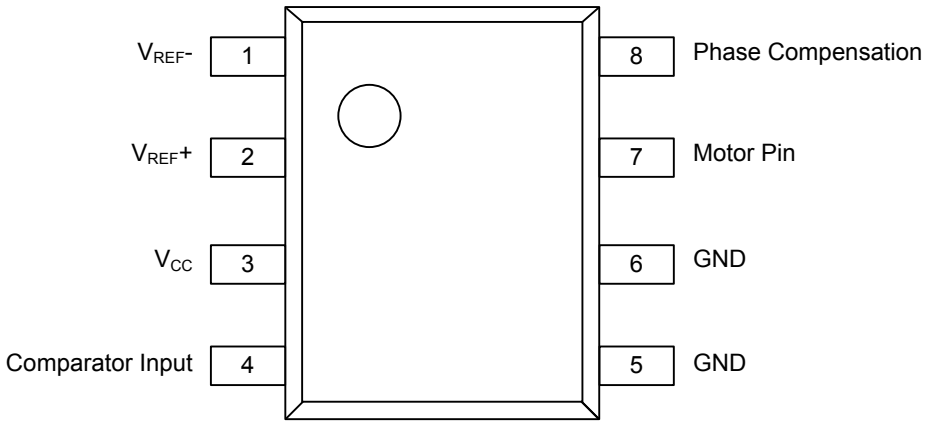
Ordering Number		Package	Packing
Lead Free	Halogen Free		
AN8850L-D08-T	AN8850G-D08-T	DIP-8	Tube

Note: xx: Output Voltage, refer to Marking Information.

AN8850L-D08-T
- (1)Packing Type
- (2)Package Type
- (3)Lead Free

(1) T: Tube
(2) D08: DIP-8
(3) Halogen Free, L: Lead Free

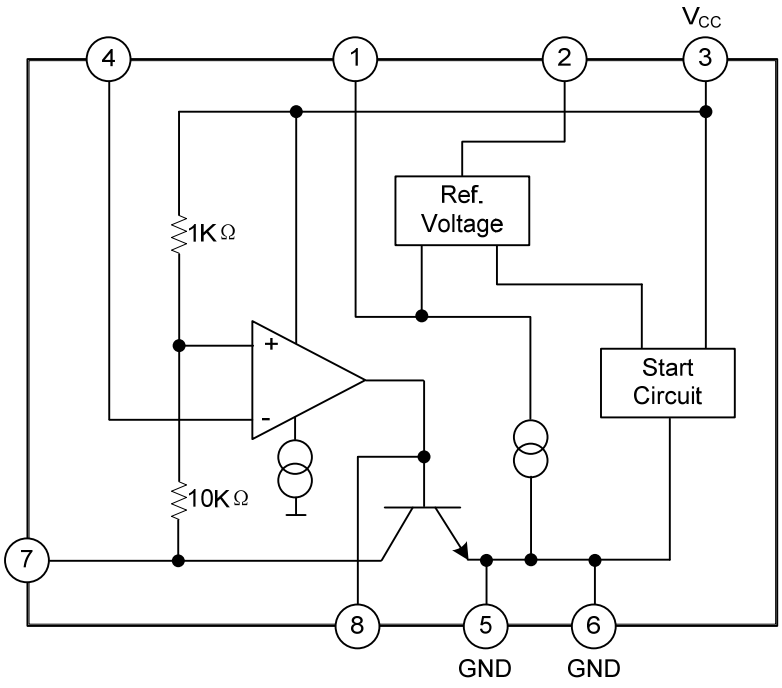
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V_{REF}-	V_{REF}-
2	V_{REF}+	V_{REF}+
3	V_{CC}	Power Supply
4	Comparator Input	Input of Comparator
5	GND	Ground
6	GND	Ground
7	Motor Pin	Output Pin
8	Phase Compensation	Phase Compensation

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (Ta= 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	12	V
Circuit Voltage	$V_{n-5,6}$ (n = 1, 2, 3, 4)	-0.5~7.5	V
Circuit Voltage	$V_{n-5,6}$	-0.5~1	V
Supply Current	I_{CC} (Note 1)	2	A
Circuit Current	I_{OUT}	2	A
Power Dissipation	P_D	750	mW
Operating Ambient Temperature	T_{OPR}	-20~+75	℃
Storage Temperature	T_{STG}	-40~+150	℃

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

1. t ≤ 5μs

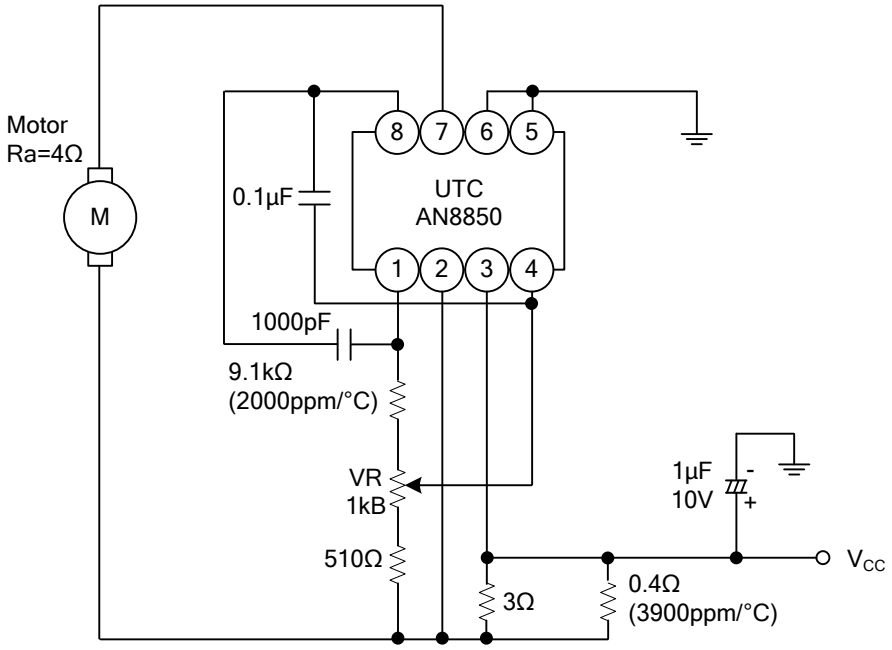
■ ELECTRICAL CHARACTERISTICS (Ta= 25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Current	I_{CC}	V_{CC}=3V		2	3	mA
Reference Voltage	V_{ref}	V_{CC}=3V, $V_{2\text{-}1}$>10kΩ	1.20	1.28	1.35	V
Starting Voltage	$V_{CC(S)}$	Supply voltage in which 30mA current flows to Ra		1.0	1.2	V
Saturation Voltage	V_{SAT}	V_{CC}=1.8V， Ra=4.7Ω		0.2	0.5	V
Voltage Characteristics 1	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta V_{CC}$	V_{CC}= 1.8V ~ 12V	-1.25	0.1	1.25	%V
Voltage Characteristics 2	$\frac{\Delta V_a}{V_a} / \Delta V_{CC}$	V_{CC}= 1.8V ~ 12V	-1.2	0.1	1.2	%V
Current Characteristics	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta I_{OUT}$	I_{OUT} =1~20mA	-0.2	0.01	0.2	%mA
Current Characteristics	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta Ta$	Ta=-20~+60°C， V_{CC}=3.0V		0.01		%°C

Note: Operating Supply Voltage Range : $V_{CC\ (opr)}$ = 1.8V ~ 12V

■ TYPICAL APPLICATION CIRCUIT

Speed Control Circuit with 3V Core Motor



Motor Constants
- R_a : Internal resistor = 4Ω
- K_a : Electromotive force constant = 0.4mV/rpm
- K_T : Torque constant = 30g · cm/A