

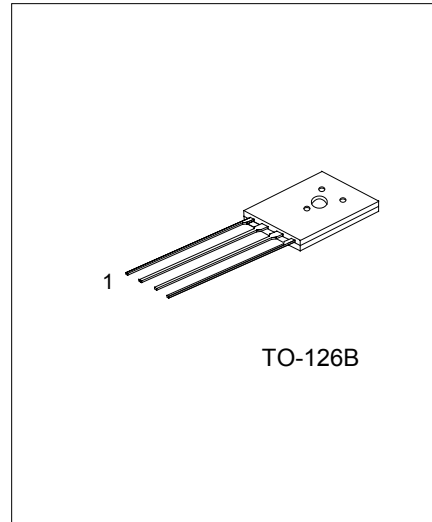
MOTOR CONTROL CIRCUIT

DESCRIPTION

The UTC AN6652 is an IC designed for the rotating speed control of a compact DC motor, which is used for a tape recorder, record player, etc.

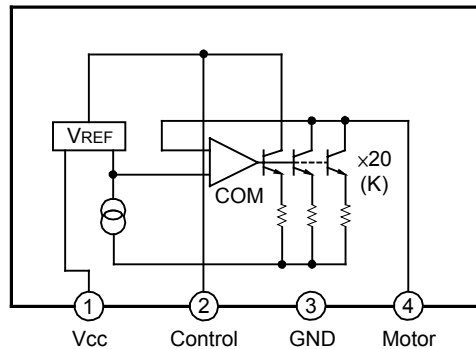
FEATURES

- \*Small four-lead plastic package for compact motor. Fewer external parts.
- \*Stable low reference voltage (1.25V typ.), wide motor speed setting
- \*Highly stable operation over a wide range of supply voltage and torque supply voltage,  $V_{cc}=6V\sim 20V$
- \*Reverse voltage protection circuit is built-in.



1: Vcc 2: Control 3: GND 4: Motor

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>cc</sub>	22	V
Supply Current	I <sub>cc</sub> <sup>*2</sup>	1.5	A
Power Dissipation	P <sub>D</sub> <sup>*1</sup>	1.3	W
Operating Temperature	T <sub>opr</sub>	-20~+75	°C
Storage Temperature	T <sub>stg</sub>	-40~+150	°C

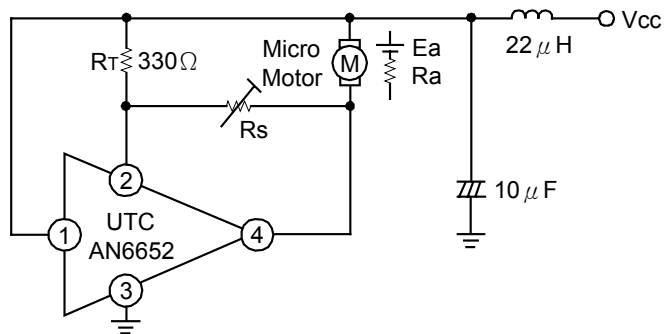
\*1. Ta = 25°C, With a 10×10mm bakelite printed circuit board (35μm Cu leaf)

\*2. t ≤ 5s

ELECTRICAL CHARACTERISTICS (Ta=25°C)

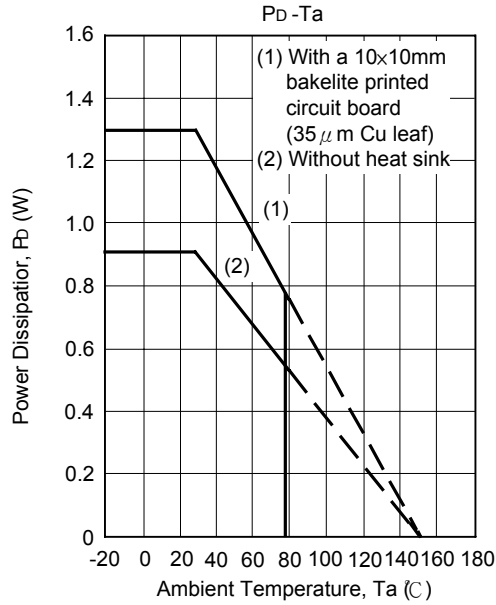
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	VREF	Vcc=12V, Ra=1k Ω	1.15	1.25	1.40	V
Bias Current	IBias	Vcc=12V		0.1	1	mA
Current Proportional Constant	K	Vcc=12V, DI4=20mA	18	20	22	
Saturation Voltage	Vsat	Vcc=8.0V, Ra=18 Ω		1	2	V
Voltage Characteristics (1)	$\frac{\Delta V_{REF}}{V_{REF}} / V_{CC}$	Vcc=9V~16V, Ra=1k Ω	-0.6	-0.02	0.6	%/V
Voltage Characteristics (2)	$\frac{\Delta K}{K} / V_{CC}$	Vcc=9V~16V, DI4=20mA	-0.7	0.2	0.7	%/V
Current Characteristics (1)	$\frac{\Delta V_{REF}}{V_{REF}} / I_4$	I4=10 mA ~50mA	-0.1	-0.03	0.1	%/mA
Current Characteristics (2)	$\frac{\Delta K}{K} / I_4$	I4=50mA~100mA	-0.15	-0.01	0.15	%/mA
Temperature Characteristics (1)	$\frac{\Delta V_{REF}}{V_{REF}} / T_a$	Ta=-20°C~+75°C, Vcc=12V, Ra=1k Ω		0.01		%/°C
Temperature Characteristics (2)	$\frac{\Delta K}{K} / T_a$	Ta=-20°C~+75°C, DI4=20mA		0.01		%/°C

APPLICATION CIRCUIT



Motor Constants {  
 Ka: Generation constant=2.4mV/rpm  
 Ra: Internal resistor = 18 Ω  
 Kt: Torque constant=200g · cm/A

CHARACTERISTICS CURVE



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