

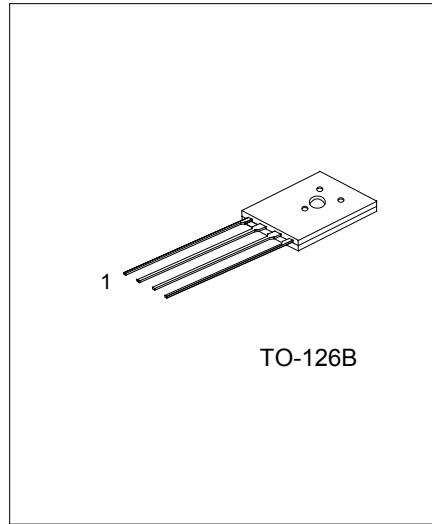
MOTOR CONTROL CIRCUIT

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.

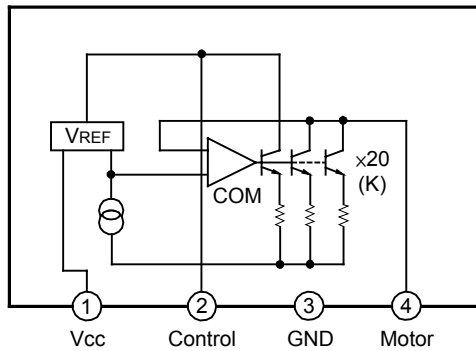
FEATURES

- *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	Vcc	22	V
Supply Current	Icc ^{*2}	1.5	A
Power Dissipation	P _D ^{*1}	1.3	W
Operating Temperature	T _{opr}	-20~+75	°C
Storage Temperature	T _{stg}	-40~+150	°C

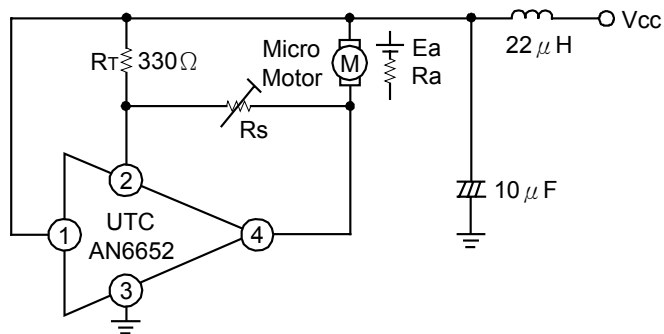
*1. Ta = 25°C, With a 10×10mm bakelite printed circuit board (35μm Cu leaf)

*2. t ≤ 5s

ELECTRICAL CHARACTERISTICS (Ta=25°C)

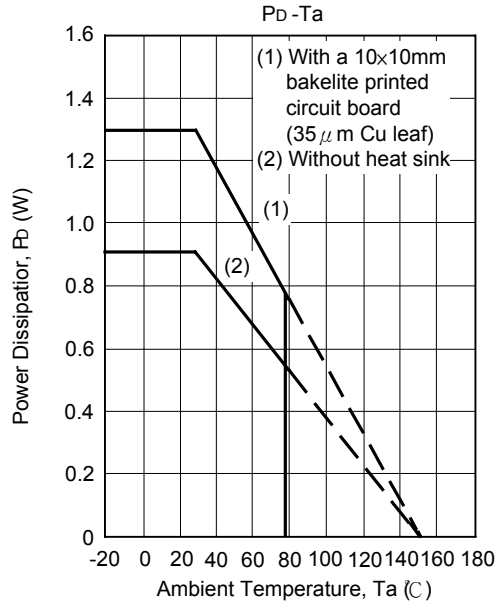
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	VREF	Vcc=12V, Ra=1k Ω	1.15	1.25	1.40	V
Bias Current	IBias	Vcc=12V		0.1	1	mA
Current Proportional Constant	K	Vcc=12V, DI4=20mA	18	20	22	
Saturation Voltage	Vsat	Vcc=8.0V, Ra=18 Ω		1	2	V
Voltage Characteristics (1)	$\frac{\Delta V_{REF}}{V_{REF}} / V_{CC}$	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



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.