



# AN6650

## LINEAR INTEGRATED CIRCUIT

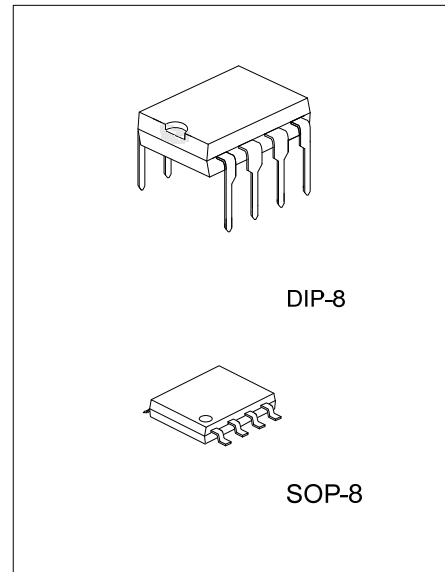
### MOTOR SPEED CONTROL CIRCUIT

■ DESCRIPTION

The UTC **AN6650** is a monolithic integrated circuit, designed for the tape recorder.

■ FEATURES

- \*Wide Operating Supply Voltage:  $V_{CC}=1.8V-7V$
- \*Few External Components
- \*Easy Speed Control Mode



■ ORDERING INFORMATION

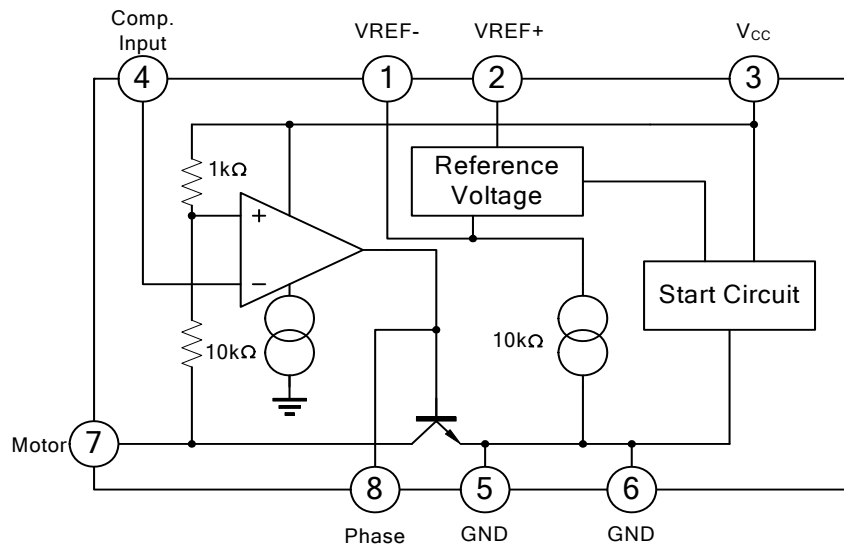
Ordering Number		Package	Packing
Lead Free	Halogen Free		
AN6650L-D08-T	AN6650G-D08-T	DIP-8	Tube
-	AN6650G-S08-R	SOP-8	Tape Reel

<p>AN6650L-D08-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) D08: DIP-8, S08: SOP-8</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING

DIP-8	SOP-8
<p>UTC AN6650</p> <p>1 2 3 4 5 6 7 8</p>	<p>UTC AN6650G</p> <p>1 2 3 4 5 6 7 8</p>

## ■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V <sub>CC</sub>	7.5	V
Terminal Voltage		V <sub>n</sub> (n=1,2,3,4)	-0.5 ~ 7.5	V
Terminal 8 Voltage		V <sub>8</sub>	-0.5 ~ 1	V
Supply Current		I <sub>CC</sub> (Note)	1000	mA
Terminal 7 Current		I <sub>7</sub>	1000	mA
Power Dissipation	DIP-8	P <sub>D</sub>	750	mW
	SOP-8		360	
Operating Temperature		T <sub>OPR</sub>	-20 ~ +85	°C
Storage Temperature		T <sub>STG</sub>	-40 ~ +150	°C

Note: Test Time<5μs

■ ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C, V<sub>CC</sub>=6V, f=1KHz, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	TEST CIRCUIT	MIN	TYP	MAX	UNIT
Quiescent Circuit Current	I <sub>CC</sub>	V <sub>CC</sub> =3V	1		2	3	mA
Reference Voltage	V <sub>REF</sub>	V <sub>CC</sub> =3V, R2-1>10kΩ	4	1.20	1.28	1.35	V
Start Voltage	V <sub>CC(S)</sub>	30mA current flow to Ra	2		1.0	1.2	V
Saturation Voltage	V <sub>(SAT)</sub>	V <sub>CC</sub> =1.8V, Ra=4.7Ω	2		0.2	0.5	V
Reference Voltage Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta V_{CC}$	V <sub>CC</sub> =1.8V ~ 7.0V	1	-1.25	0.1	1.25	%/V
Output Voltage Characteristics	$\frac{\Delta V_A}{V_A} / \Delta V_{CC}$	V <sub>CC</sub> =1.8V ~ 7.0V	3	-1.2	0.1	1.2	%/V
Reference Voltage Current Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta I_7$	I <sub>7</sub> =1mA ~ 20mA	4	-0.2	0.01	0.2	%/mA
Reference Voltage Temperature Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta T_A$	T <sub>A</sub> =-20 ~ +60°C, V <sub>CC</sub> =3.0V	4		0.01		%/°C

■ TEST CIRCUIT

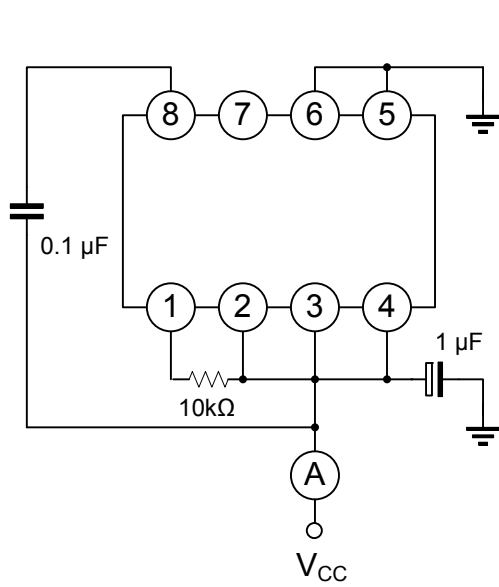


Fig.1 ( $I_{CC}, \frac{\Delta V_{REF}}{V_{REF}} / \Delta V_{CC}$ )

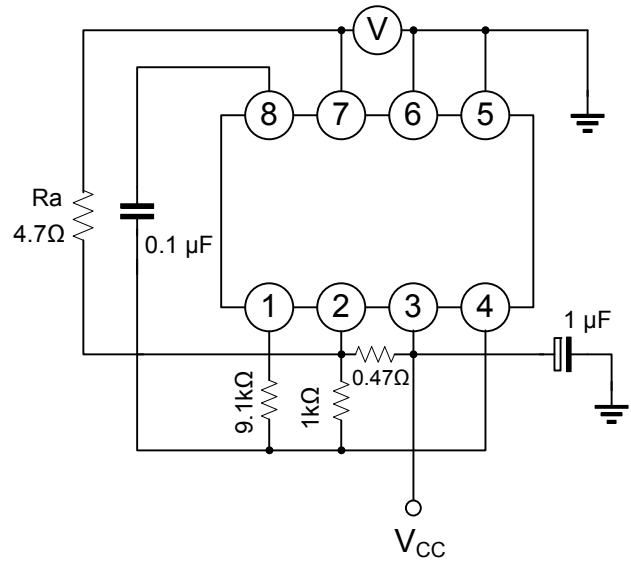


Fig.2 ( $V_{CC(s)}, V_{SAT}$ )

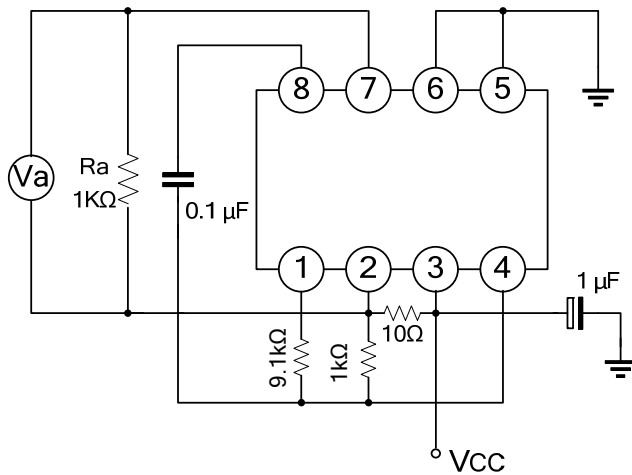


Fig.3 ( $\frac{\Delta V_A}{V_A} / \Delta V_{CC}$ )

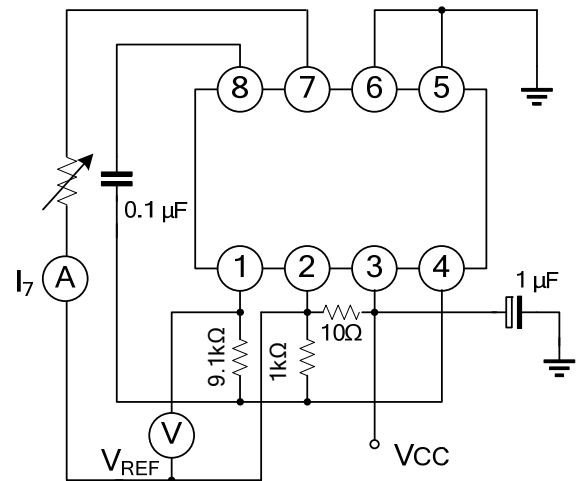


Fig.4 ( $\frac{\Delta V_{REF}}{V_{REF}} / \Delta I_7, \frac{\Delta V_{REF}}{V_{REF}} / \Delta T_A$ )

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