

# UTC6650

# LINEAR INTEGRATED CIRCUIT

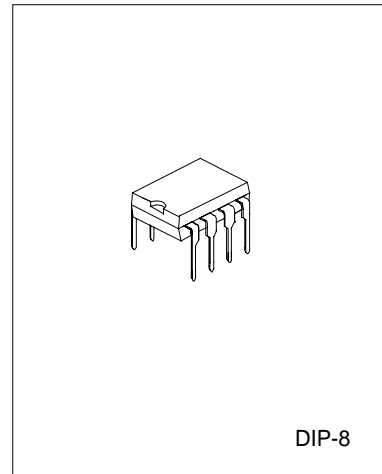
## MOTOR SPEED CONTROL CIRCUIT

### DESCRIPTION

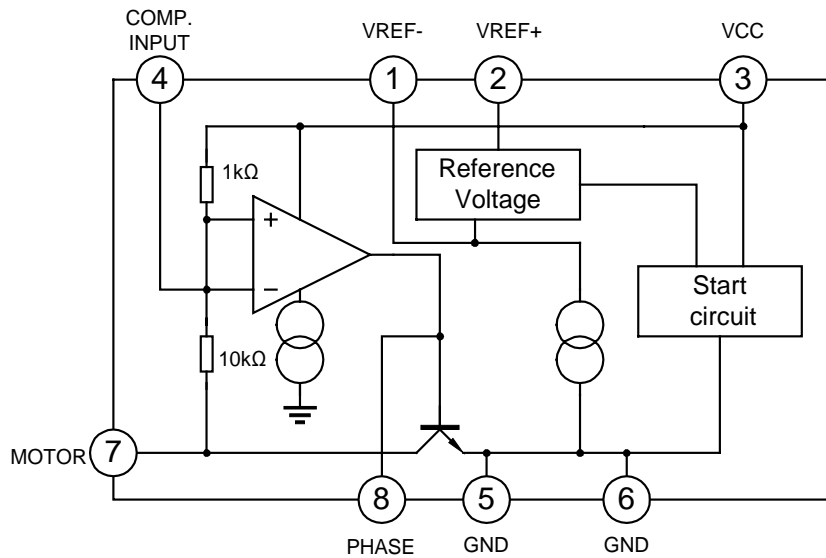
The UTC6650 is a monolithic integrated circuit designed for the tape recorder.

### FEATURES

- \*Wide operating supply voltage:  $V_{cc}=1.8V-7V$
- \*Few external components
- \*Easy Speed control mode



### BLOCK DIAGRAM



**ABSOLUTE MAXIMUM RATINGS**( $T_a=25^\circ\text{C}$ )

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	7.5	V
Terminal Voltage	$V_n(n=1,2,3,4)$	-0.5~7.5	V
Terminal 8 Voltage	$V_8$	-0.5~1	V
Supply Current	$I_{CC}$	1000	mA
Terminal 7 Current	$I_7$	1000	mA
Power Dissipation	$P_D$	750	mW
Operating Temperature	$T_{op}$	-20 ~ +70	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS**

(Ta=25°C, Vcc=6V, f=1kHz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units	Test circuit
Quiescent Circuit Current	$I_{CC}$	$V_{CC}=3V$		2	3	mA	1
Reference Voltage	$V_{REF}$	$V_{CC}=3V, R_2-1>10k\Omega$	1.20	1.28	1.35	V	4
Start Voltage	$V_{CC(S)}$	30mA current flow to $R_a$		1.0	1.2	V	2
Saturation Voltage	$V_{SAT}$	$V_{CC}=1.8V, R_a=4.7\Omega$		0.2	0.5	V	2
Reference Voltage Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta V_{CC}$	$V_{CC}=1.8V\sim 7.0V$	-1.25	0.1	1.25	%/V	1
Output Voltage Characteristics	$\frac{\Delta V_A}{V_A} / \Delta V_{CC}$	$V_{CC}=1.8V\sim 7.0V$	-1.2	0.1	1.2	%/V	3
Reference Voltage Current Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta I_7$	$I_7=1mA\sim 20mA$	-0.2	0.01	0.2	%/mA	4
Reference Voltage Temperature Characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta T_A$	$T_A=-20\sim +60^\circ\text{C}, V_{CC}=3.0V$		0.01		%/°C	4

TEST CIRCUIT

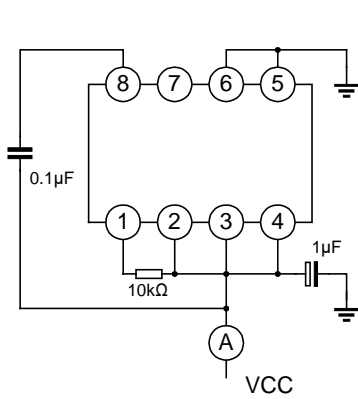


Fig.1

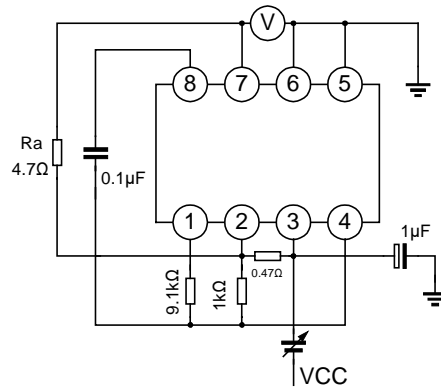


Fig.2

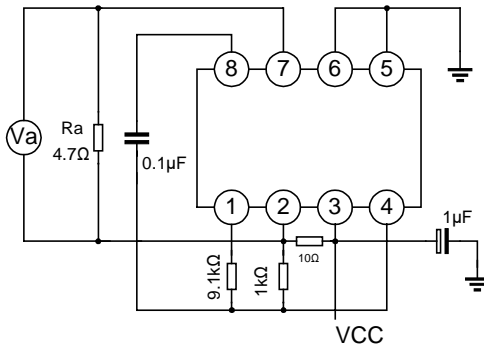


Fig.3

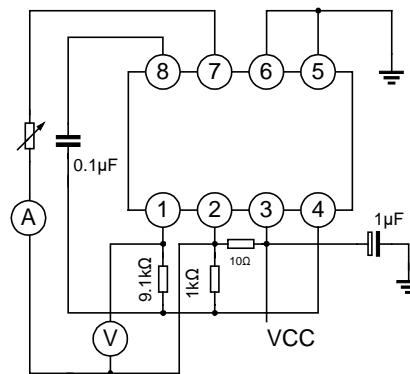


Fig.4

APPLICATION CIRCUIT

