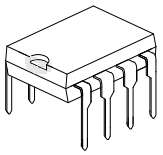
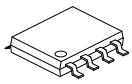
# BA6220

*LINEAR INTEGRATED CIRCUIT*

# GENERAL USE ELECTRONIC GOVERNOR



DIP-8



SOP-8

## ■ DESCRIPTION

The UTC **BA6220** is a monolithic integrated circuit, developed for speed control of general use DC motors.

## ■ FEATURES

* Wide range of working power supply voltage range ($V_{CC}$= 3.5V - 16V).
* Very large starting torque at the low voltage.
* Large permissible loss due to effective utilization of substrate radiation.
* Usable for various DC motors by means of changing constants of the external components.

## ■ APPLICATION

* Radio cassette tape recorders

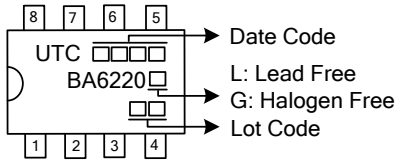
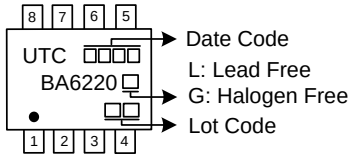
## ■ ORDERING INFORMATION

| Ordering Number | | Package | Packing |
|---|---|---|---|
| Lead Free | Halogen Free | | |
| BA6220L-D08-T | BA6220G-D08-T | DIP-8 | Tube |
| BA6220L-S08-R | BA6220G-S08-R | SOP-8 | Tape Reel |

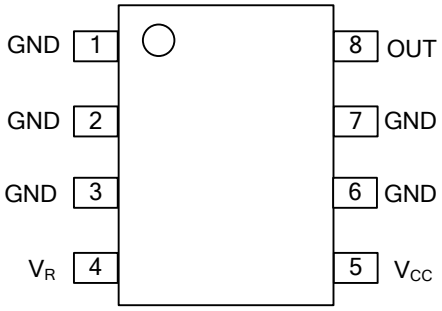
BA6220G-D08-T
(1)Packing Type
(2)Package Type
(3)Green Package

(1) T: Tube, R: Tape Reel
(2) D08: DIP-8, S08: SOP-8
(3) G: Halogen Free and Lead Free, L: Lead Free

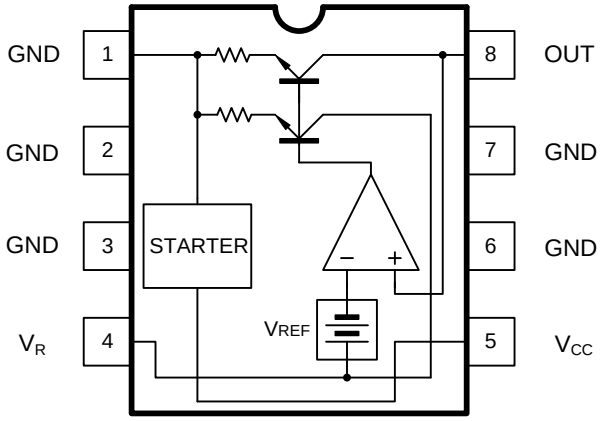
## ■ MARKING

| DIP-8 | SOP-8 |
|---|---|
|  |  |

## ■ PIN CONFIGURATION




## ■ BLOCK DIAGRAM



## ■ ABSOLUTE MAXIMUM RATINGS ($T_A$=25°C, unless otherwise specified.)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|---|---|---|---|---|
| Supply Voltage | | $V_{CC}$ | 18 | V |
| Power Dissipation (Note 2) | DIP-8 | $P_D$ | 1.4 | W |
| | SOP-8 | | 0.8 | W |
| Operating Temperature | | $T_{OPR}$ | -25 ~ +75 | °C |
| Storage Temperature | | $T_{STG}$ | -55 ~ +125 | °C |

Notes: 1. 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.
2. PCB (Copper-surfaced) 9cm$^2$, T 1.0mm.

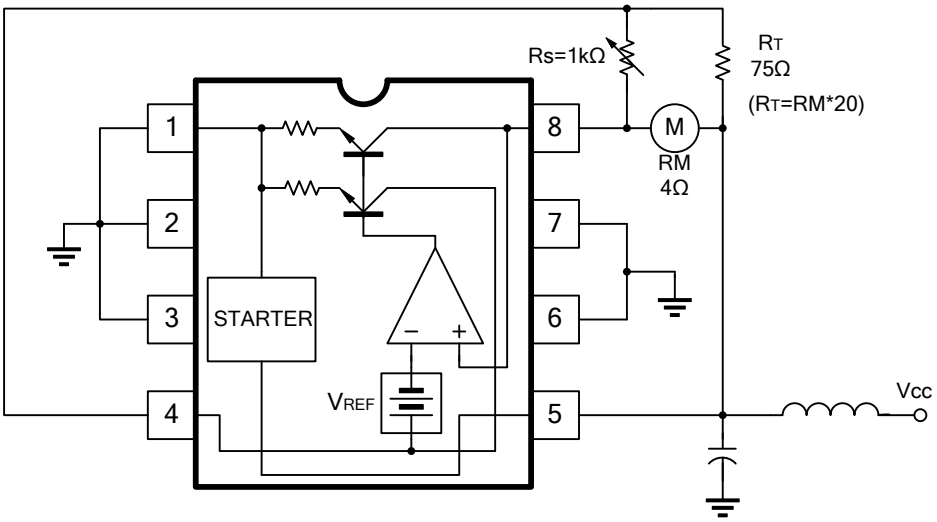
## ■ RECOMMENDED OPERATING CONDITIONS ($T_A$=25°C, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Operating Supply Voltage | $V_{CC}$ | Loader: 8g-cm | 3.5 | | 16 | V |

## ■ ELECTRICAL CHARACTERISTICS ($T_A$=25℃, $V_{CC}$=12V, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Output Saturate Voltage | $V_{SAT}$ | $V_{CC}$ =4.2V, $R_M$=4.4Ω (Fig.3) | | 1.5 | 2.3 | V |
| Reference Voltage | $V_{REF}$ | $I_M$=10Ma (Fig.1) | 1.10 | 1.27 | 1.40 | V |
| Current Ratio | K | $R_M$=33 - 44Ω (Fig.2) | 18 | 20 | 22 | |
| Voltage Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta V_{CC}$ | $I_M$=100mA, $V_{CC}$=6.3 - 16V (Fig.1) | | 0.06 | | %/V |
| Voltage Feature of Current Ratio | $\Delta K/K/\Delta V_{CC}$ | $I_M$=100mA, $V_{CC}$=6.3 - 16V (Fig.2) | | 0.4 | | %/V |
| Bias Current | IBIAS | $R_M$=180Ω (Fig.4) | 0.5 | 0.8 | 1.2 | mA |
| Current Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta I_M$ | $I_M$=30 - 200mA (Fig.1) | | -0.02 | | %/mA |
| Current Feature of Current Ratio | $\Delta K/K/\Delta I_M$ | $I_M$=30 - 200mA (Fig.2) | | -0.02 | | %/mA |
| Temperature Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta T_A$ | $I_M$=100mA, $T_A$=-25 ~ 75℃ (Fig.1) | | 0.01 | | %/°C |
| Temperature Feature of Current ratio | $\Delta K/K/\Delta T_A$ | $I_M$=100mA, $T_A$=-25 ~ 75℃ (Fig.2) | | 0.01 | | %/°C |

## ■ APPLICATION CIRCUIT




## ■ TEST CIRCUIT

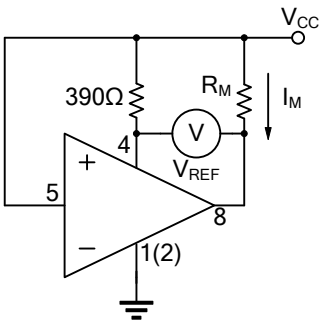



Fig. 1

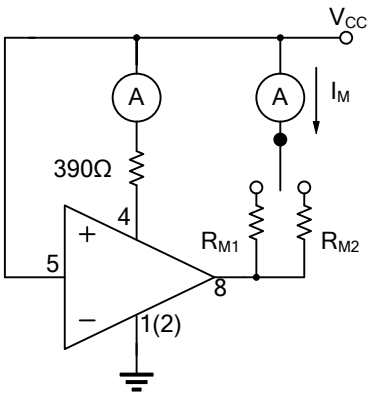



Fig. 2

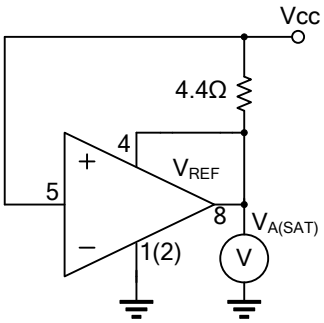



Fig. 3

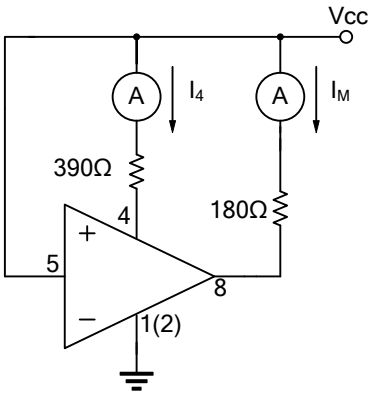



Fig. 4