



BA6220

LINEAR INTEGRATED CIRCUIT

GENERAL USE ELECTRONIC GOVERNOR

DESCRIPTION

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

FEATURES

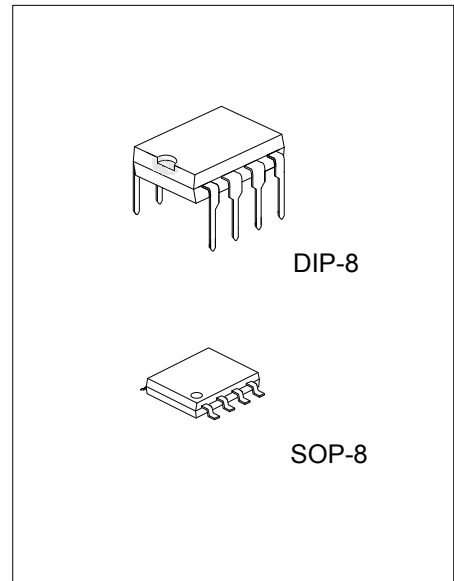
- * Wide range of working power supply voltage range ($V_{CC}= 3.5V - 16V$).
- * Very large starting torque at the low voltage.
- * Large permissible loss due to effective utilization of substrate radiation.
- * Usable for various DC motors by means of changing constants of the external components.

APPLICATION

- * Radio cassette tape recorders

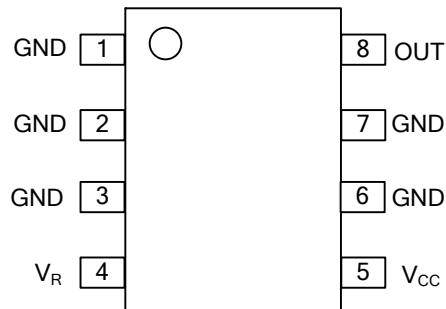
ORDERING INFORMATION

| 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 |
| BA6220L-S08-T | BA6220G-S08-T | SOP-8 | Tube |

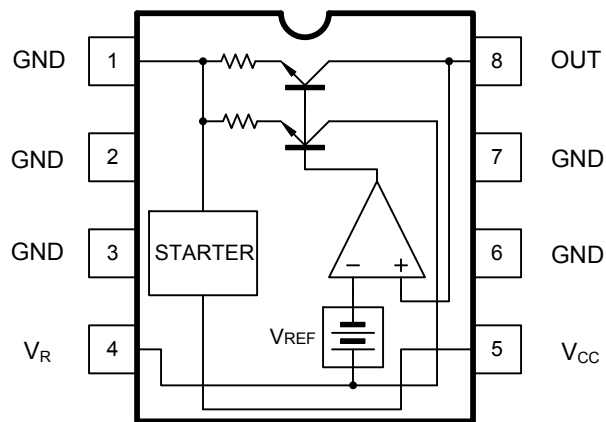


| | |
|--|---|
| <p>BA6220L-D08-T</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p> | <p>(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) G: Halogen Free, L: Lead Free</p> |
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■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ **ABSOLUTE MAXIMUM RATINGS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified.)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------------|-----------|------------|--------------------|
| Supply Voltage | V_{CC} | 18 | V |
| Power Dissipation(Note 1) | DIP-8 | 1.4 | W |
| | SOP-8 | 0.8 | W |
| Operating Temperature | T_{OPR} | -25 ~ +75 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +125 | $^{\circ}\text{C}$ |

Note 1. PCB (Copper-surfaced) 9cm², T 1.0mm.

2. 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.

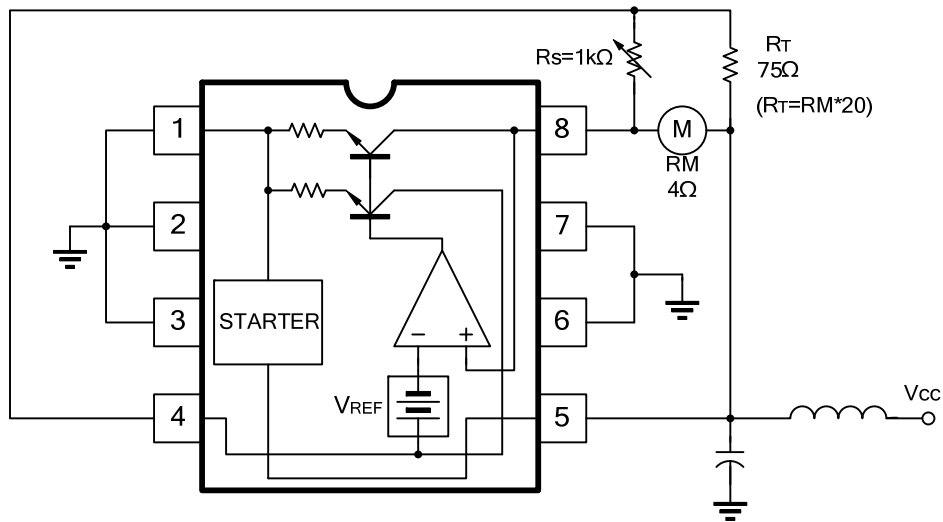
■ **RECOMMENDED OPERATING CONDITIONS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified.)

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

■ **ELECTRICAL CHARACTERISTICS** ($T_A=25^{\circ}\text{C}$, $V_{CC}=12\text{V}$, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|--|--|------|-------|------|-----------------------|
| Output Saturate Voltage | V_{SAT} | $V_{CC}=4.2\text{V}$, $R_M=4.4\Omega$ (Fig.3) | | 1.5 | 2.0 | V |
| Reference Voltage | V_{REF} | $I_M=10\text{mA}$ (Fig.1) | 1.10 | 1.27 | 1.40 | V |
| Current Ratio | K | $R_M=33 - 44\Omega$ (Fig.2) | 18 | 20 | 22 | |
| Voltage Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta V_{CC}$ | $I_M=100\text{mA}$, $V_{CC}=6.3 - 16\text{V}$ (Fig.1) | | 0.06 | | %/V |
| Voltage Feature of Current Ratio | $\Delta K/K/\Delta V_{CC}$ | $I_M=100\text{mA}$, $V_{CC}=6.3 - 16\text{V}$ (Fig.2) | | 0.4 | | %/V |
| Bias Current | I_{BIAS} | $R_M=180\Omega$ (Fig.4) | 0.5 | 0.8 | 1.2 | mA |
| Current Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta I_M$ | $I_M=30 - 200\text{mA}$ (Fig.1) | | -0.02 | | %/mA |
| Current Feature of Current Ratio | $\Delta K/K/\Delta I_M$ | $I_M=30 - 200\text{mA}$ (Fig.2) | | -0.02 | | %/mA |
| Temperature Feature of Reference Voltage | $\Delta V_{REF}/V_{REF}/\Delta T_A$ | $I_M=100\text{mA}$, $T_A=-25 \sim 75^{\circ}\text{C}$ (Fig.1) | | 0.01 | | %/ $^{\circ}\text{C}$ |
| Temperature Feature of Current ratio | $\Delta K/K/\Delta T_A$ | $I_M=100\text{mA}$, $T_A=-25 \sim 75^{\circ}\text{C}$ (Fig.2) | | 0.01 | | %/ $^{\circ}\text{C}$ |

APPLICATION CIRCUIT



TEST CIRCUIT

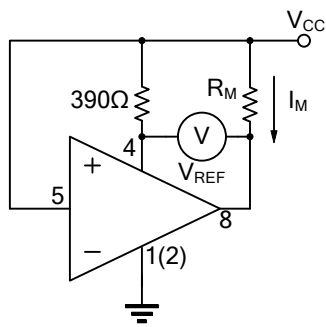


Fig. 1

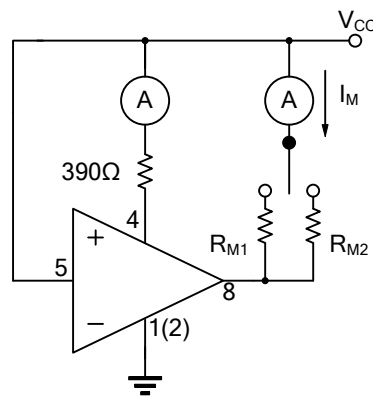


Fig. 2

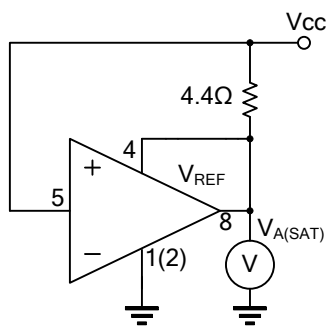


Fig. 3

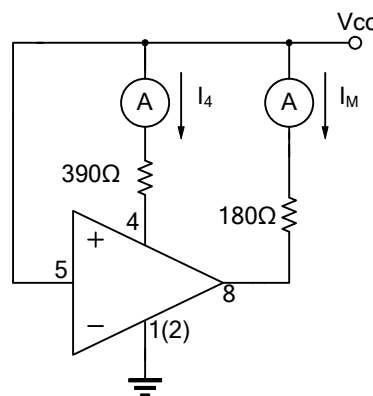


Fig. 4

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