BA6235
BA6235F

3-V electronic governor

The BA6235 and the BA6235F are monolithic ICs incorporating a 3-V electronic governor for speed control of general purpose dc motors. Various dc motors can be used by changing the external CR time constants.

Features

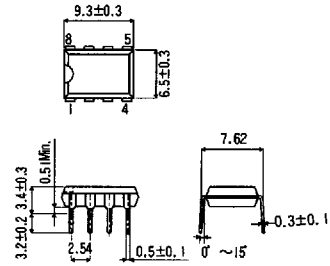
- available in DIP8 and SOP8 packages
- supply voltage range (1.8 ~ 5 V)
- power dissipation 500 mW (BA6235) and 350 mW (BA6235F)
- current proportion control system
- current proportional constant of 50 (typical) provides small reactive current
- current consumption (2.0 mA)

Applications

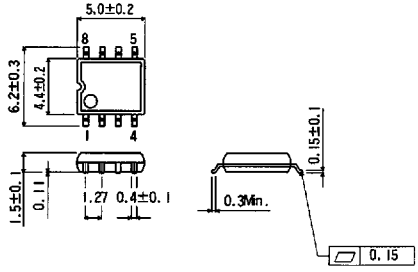
- 3–V radio cassette tape recorders
- 3–V micro-cassette tape recorders

Dimensions (Units : mm)

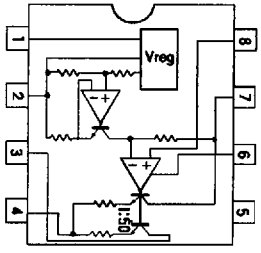
BA6235 (DIP8)



BA6235F (SOP8)



Block diagram



Absolute maximum ratings (T_a = 25°C)

Parameter		Symbol	Limits	Unit	Conditions
Supply voltage		V_{CC}	8.0	V	
Power dissipation	BA6235	P_d	500	mW	Reduce power by 5.0 mW for each degree above 25°C.
	BA6235F		350		Reduce power by 3.5 mW for each degree above 25°C.
Operating temperature		T_{opr}	−20 ~ +75	°C	
Storage temperature		T_{stg}	−55 ~ +125	°C	

Recommended operating conditions (T_a = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit
Supply voltage	V_{CC}	1.8	3.0	5.0	V
Maximum motor current	I_M			800	mA

Electrical characteristics (T_a = 25°C, V_{CC} = 12 V)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Supply current	I_S		2.0	5.5	mA	I_M = 0 mA
Output saturation voltage	$V_{O\,(sat)}$		0.1	0.3	V	I_M = 120 mA
Standard voltage	V_{REF}	165	190	215	mV	I_M = 120 mA
Current constant	K	45	50	55		I_M = 50 ~ 150 mA
Reference voltage characteristic	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta V_{CC}$		0.1		%/V	I_M = 120 mA, V_{CC} = 1.8 ~ 3.5 V
Current constant voltage characteristic	$\frac{\Delta K}{K} / \Delta V_{CC}$		0.1		%/V	I_M = 50 ~150 mA, V_{CC} = 1.8 ~ 3.5 V
Reference voltage current characteristics	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta I_M$		0.002		%/mA	I_M = 20 ~ 200 mA
Current characteristic of current constant	$\frac{\Delta K}{K} / \Delta I_M$		0.05		%/mA	I_M = 20 ~ 200 mA
Reference voltage temperature characteristic	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta T_a$		0.02		%/°C	I_M = 120 mA, T_a = −25 ~ +75°C
Temperature characteristic of current constant	$\frac{\Delta K}{K} / \Delta T_a$		0.02		%/°C	I_M = 50 ~ 150 mA, T_a = −25 ~ +75°C

Figure 1 Application example