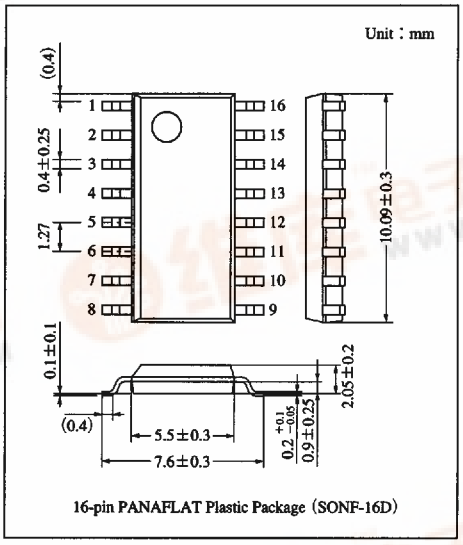
AN6607NS

DC Motor Forward/Reverse Dual Speed Electronic Governor

■ Overview

The AN6607NS is an electronic governor which incorporates the forward/reverse rotation and double speed controls of the DC motors used for radio/cassette tape recorder, and the functions such as fast forward, rewind, brake, and pause.



16-pin PANAFLAT Plastic Package (SONF-16D)

■ Features

- Operating supply voltage range : V_{CC}=8V to 16V
- Stable reference voltage (1.27V) and easy speed adjustment
- Large starting torque and maximum control torque
- Good secular drift because of external power transistor
- High-density mounting allowed by the SO package
- Forward/reverse constant speed and double speed controls, and fast forward, brake, and pause functions available by 3-bit input

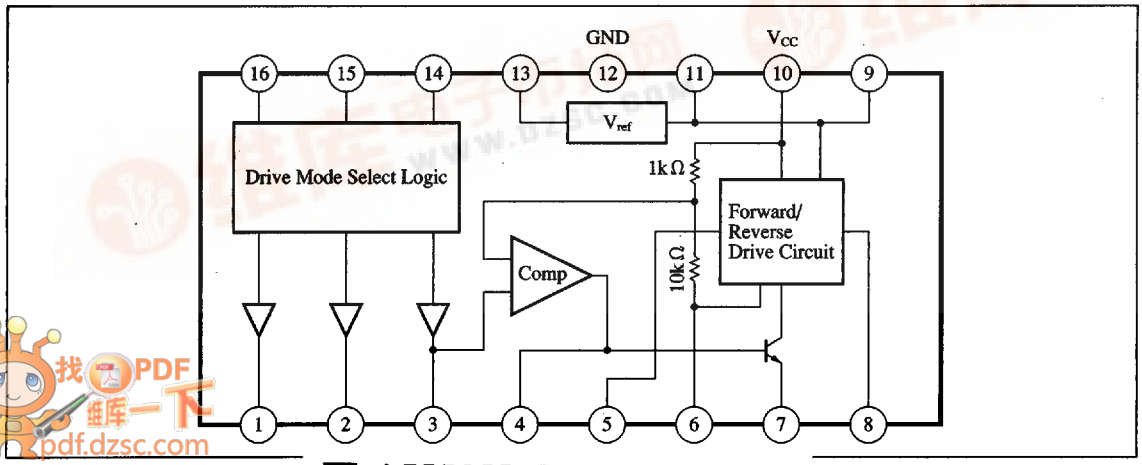
■ Applications

Cassette decks, radio/cassette tape recorders, car cassette tape players, DC motor control such as DAT, tape loading motor control

■ Pin Name

Pin No.	Pin name	Pin No.	Pin name
1	Double speed setting	9	Load characteristic setting
2	FF setting	10	V_{CC}
3	Speed adjustment	11	To pin ⑨
4	Phase correction	12	GND
5	Motor drive ⊕	13	Reference voltage ⊖
6	Collector connection	14	Logic input
7	Base connection	15	Logic input
8	Motor drive ⊖	16	Logic input

■ Block Diagram



Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	18	V
Supply current	I_C	20	mA
Power dissipation	P_D	450	mW
Operating ambient temperature	T_{opr}	−20 to +70	℃
Storage temperature	T_{stg}	−55 to +125	℃

Recommended Operating Range (Ta=25℃)

Parameter	Symbol	Range
Operating supply voltage	V_{CC}	8V to 16V

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	min	typ	max	Unit
Bias current at no load	I_{bias}	V_{CC}=12V	—	7	15	mA
Reference voltage	V_{ref}	V_{CC}=12V	1.15	1.27	1.4	mA
Rated load start voltage	$V_{CC(S)}$	Supply voltage at which rotation starts	6.5	—	—	V
Rated r.p.m.	N_L	V_{CC}=12V, N=1600rpm	−8.75	—	8.75	%
R.p.m. characteristics on load change	ΔN_L	V_{CC}=8V, I_L=55mA to 120mA	−20	—	20	rpm
R.p.m. characteristics on voltage change	ΔN_V	V_{CC}=8V to 16V, N=1600rpm	−22	0	22	rpm
FF/REW r.p.m. difference	ΔN_{Logi}	V_{CC}=12V, N=5300rpm	−3	0	3	%
Output saturation voltage 1	$V_{SAT\ (1)}$	V_{CC}=8V, I_O=1A	—	—	2	V
Output saturation voltage 2	$V_{SAT\ (2)}$	V_{CC}=8V, I_O=1A	—	—	1.5	V
R.p.m. characteristics on temperature change	ΔN_A	V_{CC}=12V, Ta=−10℃ to +60℃	—	100	—	ppm/℃

ICs for Motor

Application Circuit